Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

_____ _____

Whitney A. Brown July 18, 2011

A Big Fat Problem?
Public Health Students, Obesity Stigma, and the Law

By

Whitney A. Brown
MPH

Behavioral Sciences and Health Education

Delia Lang
Committee Chair

Howard Kushner
Committee Member

Michael Windle
Department Chair

A Big Fat Problem?
Public Health Students, Obesity Stigma, and the Law

By

Whitney A. Brown

Bachelor of Arts
University of Chicago
2007

Thesis Committee Chair: Delia Lang, Ph.D., M.P.H.

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2011

Abstract

A Big Fat Problem?
Public Health Students, Obesity Stigma, and the Law

By Whitney Brown

Background: Research on the health effects of obesity has largely focused on the negative physical health consequences and medical sequelae associated with the condition. Substantially less research has investigated the medical and social consequences of obesity stigma, though a growing body of research has documented the existence of weight-based stigma in the general population as well as among professionals in the healthcare field. The purpose of this study is to explore public health students' beliefs about obese people and the causes of obesity, to assess their likelihood of support of hypothetical legislation that would provide protections against weight-based discrimination, and to determine whether beliefs about obese people and the causes of obesity would predict students' support for anti-discrimination legislation and/or acceptance of discriminatory practices in various scenarios. **Method:** Data were collected using an online, self-administered survey of currently-enrolled students at Rollins School of Public Health. **Results:** 309 participants were eligible and completed the study. Results suggest that public health students surveyed harbored weight bias, even while acknowledging that social causes may play an important role in the development of obesity. Most participants believed that weight-based discrimination in employment scenarios should be illegal, but did not strongly support any of the proposed hypothetical pieces of legislation that would provide legal protections on the basis of weight. Fewer negative attitudes about obesity, a belief that internal causes are to blame for obesity, and female sex were found to be positive predictors of both outcome measures. Liberal political affiliation and multiracial identity were also found to positively predict less support for discrimination in the scenarios presented. **Conclusions:** This study suggests the need to educate public health students about their own stigmas, and to equip them with tools to ensure that common stereotypes do not negatively influence future research, health education, or policy endeavors. Such efforts may also have the effect of increasing the likelihood that public health students would reject weight-based discrimination and support legislation protecting people against unfair discrimination on the basis of weight status.

A Big Fat Problem?
Public Health Students, Obesity Stigma, and the Law

By

Whitney A. Brown

Bachelor of Arts
University of Chicago
2007

Thesis Committee Chair: Delia Lang, Ph.D., M.P.H.

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2011

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

Introduction

Obesity has become an increasingly urgent public health concern in the United States. Recent estimates suggest that 32.2% of adult men and 35.5% of adult women in this country have a body mass index (BMI) of 30 or higher, and can therefore be categorized as obese (Flegal, Carroll, Ogden, & Curtin, 2010). The prevalence of obesity has risen dramatically in the last 20 years; in 1990, the obesity prevalence in all states was less than 15%, while in 2009, the prevalence of obesity was less than 20% in only one state (Colorado) and the District of Columbia (Centers for Disease Control and Prevention, 2010). This rapid increase has led some to label the trend an "epidemic." While analyses suggest that the rising prevalence of obesity may be leveling off in the United States and elsewhere (Rokholm, Baker, & Sorensen, 2010), important disparities by race and ethnic group remain (Flegal, et al., 2010).

Discourses about obesity as a public health problem largely have focused on the negative physical health consequences and medical sequelae associated with the condition (Allison, Fontaine, Manson, Stevens, & VanItallie, 1999; Hebl, Ruggs, Singletary, & Beal, 2008; Pi-Sunyer, 1991). A litany of co-morbidities have been found to be associated with obesity, including cardiovascular disease, coronary heart disease, insulin resistance and diabetes mellitus, sleep-breathing disorders, degenerative joint disorder, and several types of cancer (Kopelman, 2000; Pi-Sunyer, 1991). Obesity has also been found to be associated with an increased risk of death; analysis of data from five prospective cohort studies revealed that between 280,000 (Allison, et al., 1999) and 400,000 (Mokdad, Marks, Stroup, & Gerberding, 2004) deaths may be attributable to obesity in the United States annually. The "problem of obesity" in the United

States has garnered widespread attention in recent years within peer-reviewed scientific journals (Manganello & Blake, 2010) as well as the mainstream media (Oliver, 2006).

Despite a substantial body of literature revealing the negative consequences of obesity on physical health, as well as a steadily growing number of studies that support an "obesity paradox," (the finding that under some circumstances, higher body mass index is associated with a reduced risk of death (Curtis, et al., 2005; McAuley, Kokkinos, Oliveira, Emerson, & Myers, 2010; Orpana, et al., 2010)), relatively few studies have examined obesity as a social disease, or a condition that has social as well as medical consequences (Hebl, et al., 2008). Obese individuals often report feeling stigmatized or discriminated against on the basis of their weight alone, and must endure denigrating and demoralizing experiences on a daily basis (Rogge, Greenwald, & Golden, 2004). Obesity has been called a "particularly pernicious stigma" (Hebl, et al., 2008), and despite the ever-increasing prevalence of obesity in the United States, studies reveal that obesity stigmatization is worsening (J. D. Latner & Stunkard, 2003). Weight bias has become a pervasive aspect of our society, and has been documented not only in the general population but also among groups of people responsible for delivering healthcare treatment and services, such as nurses (Poon & Tarrant, 2009), psychotherapists (Davis-Coelho, Waltz, & Davis-Coelho, 2000), physicians (R. Puhl & Brownell, 2001), medical students (Wigton & McGaghie, 2001), dietitians (McArthur & Ross, 1997; Oberrieder, Walker, Monroe, & Adeyanju, 1995; R. Puhl, Wharton, & Heuer, 2009), and fitness professionals and exercise science students (Chambliss, Finley, & Blair, 2004; Hare, Price, Flynn, & King, 2000). That weight stigma is reflected among individuals who are in a position to provide physical, emotional, and political support for obese individuals is of serious public health concern, as perceived stigmatization and discrimination on the basis of weight has been linked to both

medical and social consequences, from reduced social networks and compromised quality of life (Stuber, Meyer, & Link, 2008) to delays and avoidance in seeking healthcare services (Drury & Louis, 2002).

Though innumerable instances of discrimination on the basis of weight have been documented in employment, education, healthcare, and interpersonal settings, obese people have very few legal recourses to challenge discrimination directed at them. Currently, no federal laws prohibit discrimination on the basis of weight, and only one state (Michigan) bans weight-based discrimination (Brown, 2010; *Elliott-Larsen Civil Rights Act of 1976*), though several statutory solutions have been suggested (Pomeranz, 2008). While the relative strength or prevalence of this type of discrimination as compared to discrimination based on race, sex, or other factors remains unclear (Andreyeva, Puhl, & Brownell, 2008), weight remains a relatively new, and currently legal, basis for discrimination.

Recent research suggests that one's beliefs about a particular group of people may predict endorsement of an ambiguously discriminatory medical policy targeted at that group (Brochu & Esses, 2009). Understanding individuals' beliefs about obese people may therefore provide insight into their support for or opposition to legal protections against weight-based discrimination. To our knowledge, there are no studies that explore public health students' support for legislation aimed at reducing discrimination and the subsequent health disparities suffered by a stigmatized group such as obese people.

Significance of Study

The purpose of this study is to explore public health students' beliefs about obese people, and to assess their likelihood of supporting hypothetical legislation that would provide

protections against weight-based discrimination. While previous studies suggest that other groups of students, including medical students (Blumberg & Mellis, 1985; Persky & Eccleston, 2011; Wiese, Wilson, Jones, & Neises, 1992), nursing students (Poon & Tarrant, 2009), and exercise science students (Chambliss, et al., 2004) exhibit negative attitudes toward and beliefs about obese people, the prevalence of these beliefs has not been investigated among public health students, nor has previous research endeavored to assess public health students' endorsement of or opposition to laws and policies that would protect obese individuals from discrimination on the basis of their weight.

In past responses to public health crises, public health practitioners have been responsible for conducting research to expand knowledge about the basic physiology of the disease or condition, have been involved in treating the afflicted population, have had substantial roles to play in health prevention and education campaigns, and have also led efforts to combat discrimination against the disease or condition in question (Downey, 2005). The rising prevalence of obesity in the United States means that public health practitioners (both current and future) can expect to confront the obesity discourse in their professional endeavors, either directly or indirectly, and will likely have a role to play in shaping the public health response to this issue. As professionals with diverse backgrounds and training, public health practitioners may be involved in conducting research or reviewing research proposals that pertain to obesity; in explaining developments in our understanding of the condition to governmental agencies, independent organizations, and the general public; in determining to what extent obesity treatments are covered by federal health insurance programs; in producing guidelines for the most effective evaluation and management (Christina C. Wee & Yanovski, 2005) of the physical, psychological, and social sequelae of obesity; in conveying educational messages about the

relative importance of lifestyle, environmental, and genetic contributors to overweight and obesity to the public; in advocating for more money to be allocated to research that investigates stigmatization and discrimination; and in a myriad of other capacities that contribute to the way that obesity is viewed and treated in this country (Downey, 2005; MacLean, et al., 2009). As a group with a vested interest in reducing health disparities among stigmatized groups, the beliefs of public health professionals (and by extension public health students entering the field) about an issue as prevalent and stigmatized as obesity will clearly play a part in determining the path of future public health research, education, policy, and advocacy. Therefore, as future health educators, medical practitioners, policymakers, health researchers, and authorities and activists on health-related matters, current public health students are likely to play a wide variety of roles in addressing the determinants and consequences of obesity on the individual-, community-, and policy-levels.

Previous studies have indicated that age is a significant predictor of anti-fat bias among groups such as physicians, with younger individuals exhibiting greater implicit anti-fat bias than older individuals (Schwartz, Chambliss, Brownell, Blair, & Billington, 2003). Schools of public health, which tend to attract students early in their careers, may thus be the ideal context in which to address the reality and ramifications of weight stigma. The results of this study may identify opportunities for intervention to prevent the negative consequences of inadvertent stigmatization and discrimination that may otherwise deleteriously affect students' interest in interacting with or addressing issues related to these persons, or their willingness to advocate on behalf of obese individuals. Determining the extent to which public health students would support the enactment of laws that provide civil protections to obese individuals could further illuminate the role of beliefs in predicting support for policy enactment (Brochu & Esses, 2009),

while also providing direction for advocates seeking support for such policies from powerful interest groups, such as future policymakers, health educators, and physicians.

Theoretical Framework

The theoretical framework upon which this study is centered is the attributional theory of motivation. Grounded in psychology, the attributional theory of motivation (or Attribution-Value Model) postulates that individuals tend first to assess causality and controllability when confronted with someone that possesses or exemplifies a particular health condition. The individual will make both causal attributions (i.e. whether or not the condition is subject to volitional control or change) and assignments of responsibility (i.e. whether the individual is responsible for his or her condition as a result of particular behaviors or inaction) prior to making a judgment about a person with a particular trait or condition (Weiner, 1995).

Figure 1: The Attributional Theory of Motivation (adapted from Weiner 1995)

Judgments about whether a stigmatized condition is caused by internal, controllable factors, or external, uncontrollable factors, and determinations about whether an individual is personally responsible for his or her condition are thus expected to influence one's perception of individuals with the condition in question (Rush, 1998). Characteristics that are perceived to be internally controllable and for which a person is perceived to be personally responsible tend to be perceived more negatively than characteristics that are perceived to be uncontrollable, and for which an individual is not perceived to be personally responsible (Crandall, et al., 2001). Negative perceptions of the condition ultimately produce social and emotional responses in the

form of stigmas (R. M. Puhl & Brownell, 2003), blaming of the individual with the condition in question (Weiner, 1995), or feelings of empathy and compassion if the condition is perceived to be uncontrollable or beyond one's own responsibility. Ultimately, these social and emotional responses may lead to more tangible behavioral consequences such as punishment, discrimination, or acts of assistance and sympathy (Weiner, 1995).

The attributional framework has been utilized in previous research to explain how negative traits have become associated with obesity. Numerous studies have indicated that obesity is perceived as personally controllable; behavioral consequences of this perception include social rejection of or discrimination against obese people (Weiner, 1995). Thus, assessing the extent to which individuals believe obesity to be internally versus externally controllable and a function of personal versus impersonal causality may have a direct bearing on their appraisals of obese people, their acceptance of weight stigma, and their behaviors toward obese people.

Attribution theory further posits that personal and cultural values and stereotypic attributes related to the condition or trait may also contribute to the formation of stigma and prejudice (Crandall, et al., 2001). Crandall and his colleagues found that beliefs about the controllability of obesity are associated with "more fundamental beliefs about the nature of the social world" (Crandall, et al., 2001), including belief in a just world, authoritarianism, and political conservatism (Crandall, 1994). These findings provide evidence for the importance of investigating personal factors that may influence one's perception of obese people.

CHAPTER 2: REVIEW OF THE LITERATURE

Part I: Weight-Based Stigmatization

Obesity and Stigmatization

As it is currently defined and conceived, obesity is a medical condition with physical consequences. However, an increasing body of research has revealed that the social implications of obesity may be just as severe as the physical consequences. Stigmatization against overweight and obese people, also called weight bias or anti-fat prejudice, can be defined as resulting from "a negative attitude toward (dislike of), belief about (stereotype), or behavior against (discrimination) people perceived as being 'fat'" (Danielsdottir, O'Brien, & Ciao, 2010). Weight stigma occurs when attributes associated with being obese influence expectations about an individual, which may include negative judgments about their character, or beliefs that obese people are lazy or lack self-discipline (Chambliss, et al., 2004). Weight stigma is pervasive in the United States and elsewhere, and may even be considered normative in many cultures and age groups (Brown, 2010). Though an increasing prevalence of obesity in the United States might be expected to result in a greater degree of comfort and familiarity with obese people, and a subsequent reduction in stigmatization of the condition, the opposite has been found to be true; stigmatization against obese people appears to have increased in the last 40 years (J. D. Latner & Stunkard, 2003). A recent study found that negative perceptions about people who are overweight may be on the rise, even in countries where larger body size had been previously associated with wealth, prestige, and beauty (Brewis, Wutich, Falletta-Cowden, & Rodriguez-Soto, 2011), suggesting that weight stigma is becoming just as globalized as obesity itself (Parker-Pope, 2011). Obese people report feeling both "enacted" stigma, which involves discriminatory behavior or tacit approval of such behavior at the individual and collective level,

as well as "felt" stigma, which involves internal fear of enacted stigma (Green, 1995). Living in constant anticipation of hostile reactions from others results in chronic stress among obese people, which exists independent of whether or not stigmatization actually occurs (MacLean, et al., 2009). Stigmatization and prejudice against obese people has been labeled civilized oppression (Rogge, et al., 2004), in that obese people commonly face interactions that "diminish, degrade, belittle, and control" (Harvey, 1999; Rogge, et al., 2004). These interactions and experiences of stigmatization – which may include being stared at, receiving comments from children, perceiving that others are making negative assumptions about them, being physically attacked, or being denied a job because of one's weight – occur frequently and repeatedly over the course of a lifetime (Myers & Rosen, 1999). In fact, one study identified 50 distinct weight-based stigmatization experiences (Myers & Rosen, 1999); the frequency with which obese individuals suffered these experiences of stigmatization was found to be positively correlated with weight up to a point, beyond which excess weight and stigmatization were not strongly associated.

Weight stigmatization is also an especially persistent form of prejudice. Women who underwent laparoscopic adjustable gastric banding surgery and had lost at least 50 percent of their excess body weight reported that stigmatization and discrimination persisted even after weight loss, but that the focus of this bias shifted from their weight to their decision to have surgery (Hayden, Dixon, Dixon, Playfair, & O'Brien, 2010). In this sense, obesity must be considered as much an enduring and destructive psychosocial phenomenon as it is an objective measure of weight (Schmalz, 2010). From a public health standpoint, therefore, the health consequences of the discrimination and social stigmatization faced by overweight and obese

individuals may place them in an even more vulnerable position than the health risks associated with being overweight or obese (Hebl & Xu, 2001).

The Biological and Social Production of Weight-Based Stigma

Both social and biological explanations have been put forth to explain the existence of weight-based stigma. Emerging research indicates that antipathy towards obese people increases when one feels more vulnerable to disease, which suggests that obesity may serve as a visible cue or proxy for pathogen infection (Park, Schaller, & Crandall, 2007). Obesity may therefore be a "pathogen-connoting characteristic" that triggers a response from the behavioral immune system, as does facial birthmarks, physical deformities, and visible lesions and rashes (Park, et al., 2007). More research is necessary to establish whether or not the behavioral immune system plays a role in weight-based stigmatization, but this finding provides some preliminary evidence that weight bias may be anchored in biological responses.

Significantly more research has focused on the social production of weight-based stigma. Weight stigma is likely socially produced through attributions of responsibility and control. Crandall found that negative attitudes toward obese people were correlated with a belief in the controllability of weight (Crandall, 1994). Other studies have confirmed this finding. Causal attributions of obesity to heredity have been found to be significantly associated with reduced stigmatization of obese people (Hilbert, Rief, & Braehler, 2008; Persky & Eccleston, 2011), and when overweight could be attributed to a glandular disorder, obese targets were not believed to lack self-discipline or to be self-indulgent, as were obese individuals without such an 'excuse,' and were better liked than other obese individuals (Dejong, 1980). In one study, the most significant predictor of greater stigmatizing attitudes toward obesity was causal attributions of

obesity to individual behavior (Hilbert, et al., 2008), rather than to a genetic or medical cause; causal attributions to environmental factors (i.e. food and activity environment) were also significantly associated with greater stigmatization, perhaps because these environmental factors were believed to be personally controllable (Hilbert, et al., 2008).

It is important to note that becoming aware of the uncontrollable causes of obesity does not necessarily result in decreased weight stigma. Providing information explaining that obesity is largely due to genetics did not change participants' implicit or explicit biases (Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003), nor did attempting to evoke empathy in participants through stories of discrimination against a young obese woman (Teachman, et al., 2003). Danielsdottir suggests that attempting to evoke empathy or pity for obese subjects as a strategy for reducing weight stigma is ineffective, as it has the effect of emphasizing individuals' negative preconceptions about overweight and obesity, and merely reinforces attributions of personal responsibility and the "'weakness' stereotype" (Danielsdottir, et al., 2010). Similarly, Puhl and her colleagues found that reading about uncontrollable causes of obesity did not improve positive traits attributed to obese individuals; rather, doing so reduced the number of negative traits attributed to obese people and also decreased beliefs that obesity is caused by personally-controllable factors (R. M. Puhl, Schwartz, & Brownell, 2005). Conversely, reading about causes of obesity that are under an individual's control not only increased participants' beliefs that obesity is caused by controllable factors but also increased negative traits assigned to obese people (R. M. Puhl, et al., 2005). Thus, though weight stigma may be initially produced by attributions of blame and controllability, reducing weight stigma likely requires a more comprehensive solution than merely providing information about the uncontrollable contributors to overweight and obesity.

The Prevalence of Weight Bias

While other forms of bias and prejudice, such as racism and sexism, are now considered offensive and socially unacceptable, obese people constitute one of the few groups who may be openly ridiculed without public resistance or repercussions (Rebecca M. Puhl, Heuer, & Brownell, 2010). Weight bias has therefore been called the last acceptable form of prejudice (Chambliss, et al., 2004; Rebecca M. Puhl, et al., 2010). While it is difficult to measure the precise prevalence of weight bias in the general population or the relative difference in weight bias directed at "obese" persons versus those who are "overweight" according to WHO criteria (see page 53), many studies conducted in the United States and internationally have documented widespread stigma against both overweight and obese people. A representative, random-digit dial survey in Germany found that 23.5 percent of the population exhibited "definite stigmatizing attitudes" toward obesity (Hilbert, et al., 2008), though this estimate might be lower than the actual percentage due to social desirability bias in self-reported survey responses. Another nationwide, population-based study found that Swedish 10-year-olds were 53 times more prejudiced against drawings of obese individuals than they were against an average-weight figure (Hansson, Karnehed, Tynelius, & Rasmussen, 2009). Though no nationally representative survey has assessed weight stigma in the United States thus far, many smaller studies corroborate the finding that weight stigma is similarly pervasive in this country. Among a sample of adults, Photoshop-altered photographs of heavier individuals were denigrated more than those of thinner individuals on several dimensions, including competence, warmth, and attractiveness (Hebl, et al., 2008). In a study of 368 university students, weight bias was found to be significantly stronger than other forms of prejudice, such as that directed against Muslims or gays (J. D. Latner, O'Brien, Durso, Brinkman, & MacDonald, 2008). A large, community-based online

sample provided support for both internal (implicit) and external or self-reported (explicit) anti-fat stereotypes (Schwartz, Vartanian, Nosek, & Brownell, 2006); in this study, 46 percent of respondents reported that they would rather give up a year of their lives than be obese, 15 percent would rather give up 10 years or more of their lives, 30 percent would rather be divorced, 35 percent would rather be unable to have children, 15 percent would rather be severely depressed, and 14 percent would rather be alcoholic than be obese (Schwartz, et al., 2006). In two studies of implicit stereotypes among samples of the general population and college students, implicit stereotypes of fat people relative to thin people as lazy (versus motivated), stupid (versus smart) and worthless (versus valuable) were demonstrated (Teachman, et al., 2003). Interestingly, none of the implicit characteristics measured in this study had any direct relation to body size or health, yet participants nevertheless rated obese people more negatively than thin people.

Weight stigma has even been found to extend to people in the near vicinity of overweight and obese people. A randomized, controlled trial found that normal-sized job applicants were judged more negatively if they appeared in the presence of an overweight individual than in the presence of a normal-weight individual (Hebl & Mannix, 2003). In another study, unconscious anti-fat attitudes were found to predict how far away from a fat person study participants chose to sit (Bessenoff & Sherman, 2000). These findings have led researchers to theorize that the visibility of weight, as opposed to other stigmatized conditions such as sexuality, may lead family members, friends, and others to feel vulnerable to criticism simply as a result of their association with or proximity to an obese person (R. M. Puhl, Moss-Racusin, Schwartz, & Brownell, 2008).

The portrayal of overweight and obese individuals in the media may contribute to the social acceptability (Rebecca M. Puhl, et al., 2010) of weight stigma. Overweight characters in

situational comedies on television were less likely to be judged as attractive than normal-weight or underweight characters (Ata & Thompson, 2010; Greenberg, Eastin, Hofschire, Lachlan, & Brownell, 2003). Other studies of situational comedies found that derision of heavier female characters by male characters was reinforced by audience laughter 80 percent of the time (Fouts & Burggraf, 2000), and thinner female characters were found to receive more positive comments from male characters than their heavier counterparts in an analysis of 52 female characters from 28 different prime-time sitcoms (Fouts & Burggraf, 1999). Similar themes have been found in children's programming. Overweight cartoon characters were nearly three times as likely to be judged as physically unattractive than underweight or normal-weight characters in a content analysis of cartoons produced by major animation studios (H. Klein & Shiffman, 2006). Perhaps as a result of the negative portrayal of overweight and obese people in the media, children who reported greater total media and magazine use as well as time spent playing video games showed greater stigmatization of overweight and obese children than children who consumed less media (Ata & Thompson, 2010; Janet D. Latner, Rosewall, & Simmonds, 2007). Finally, the recent popularity of weight loss programming and weight-related "reality television" shows do not provide positive, humanizing portrayals (Ata & Thompson, 2010) of obese people, instead reinforcing the idea that heavy participants are miserable and can only be made happier by losing weight (Blaine & McElroy, 2002). These media influences likely fuel our culture's fixation with weight and methods of weight control, and as a result may have deleterious psychological effects on individuals who already exhibit sensitivity about their weight status (Schmalz, 2010).

Weight-based stigmatization does not occur in a silo, but instead has been found to be correlated with other forms of marginalization, such as marginalization on the basis of poverty, disability, and race or culture. Obese people may therefore have to cope with multiple stigmas

and may experience layered stigmatization (MacLean, et al., 2009). Additionally, some evidence suggests that there are sub-cultural variations in the pervasiveness or intensity of weight stigma. White women in one study showed greater stigmatization of obesity than did Black women (Hebl & Heatherton, 1998). Subsequent research has revealed that White female college students tend to stigmatize heavier same-race targets, while Black participants did not, and that Black participants seemed to identify less with the ideal of being thin than did White participants (Hebl, King, & Perkins, 2009). The researchers posit that Black women may disengage from social norms like obesity stigmatization for self-protection, and that doing so may also shield this population from medical disorders (such as eating disorders and depression related to concerns over body image) faced by women who subscribe to these social norms (Hebl, et al., 2009). Some evidence indicates that Black women who spend time in culturally inconsonant environments, such as largely White academic environments, report beliefs and behaviors that are consistent with stigmatizing obesity and valuing thinness (Hebl, et al., 2009), which lends support for the notion that one's social environment may affect one's acceptance or endorsement of social stereotypes against obesity.

Weight Bias Among Overweight and Obese People

Unlike people who belong to other categories that are subject to prejudice, such as race and sex, overweight and obese people do not appear to display an in-group bias with regard to weight stigma. In one study, people in the top 25 percent of the population in terms of BMI were found to exhibit no less anti-fat stigma than those in the bottom 75 percent (Crandall, 1994). In another study, overweight and non-overweight participants did not differ on primary measures, such as negative emotions toward overweight individuals, endorsing weight control beliefs,

perception of policies as discriminatory against overweight people, and willingness to support an ambiguously discriminatory policy. The authors suggest that the fact that overweight and obese individuals themselves endorse – implicitly or explicitly – anti-fat stigma may make the reduction of weight-based prejudice and discrimination more challenging (Brochu & Esses, 2009).

This lack of an in-group bias has been confirmed by other research (Hebl, et al., 2008; R. M. Puhl, Moss-Racusin, et al., 2008); in fact, one study found that 15 percent of adults participating in a weight-loss support program indicated that they believed that most stereotypes about fat people (for example, that obese people are lazy and unintelligent, have poor hygiene and self-discipline, and tend to overeat or binge) were true (R. M. Puhl, Moss-Racusin, et al., 2008). Overweight adults enrolled in a university-based weight loss research program also exhibited significant implicit associations between 'fat people' and negative characteristics (bad, lazy, stupid, and worthless) on the Implicit Association Test, and also reported that fat people were significantly lazier and less motivated than thin people on explicit measures of anti-fat bias (Wang, Brownell, & Wadden, 2004). Several researchers have argued that without overtly contesting or eschewing the negative perceptions that non-obese people possess about obesity and overweight, obese people may be failing to take advantage of the opportunity to provoke conscious thought about (Wang, et al., 2004) or shed light on the negative consequences of weight-based stereotyping. This may be particularly problematic because stigmatized, in-group sources have been found to be more credible (R. M. Puhl, et al., 2005) and motivating than non-stigmatized sources in catalyzing majority group members to investigate a particular message (Wang, et al., 2004). Thus, the absence of an in-group bias means that obese people do not have

the same protective barrier (Wang, et al., 2004) against stigma that other stigmatized groups such as racial minorities do.

Weight Bias in Health-Related Professions

While several studies have examined the prevalence of weight bias in the general population and among overweight and obese people themselves, research suggests that many groups of people whose professions require working closely with obese clients also exhibit implicit or explicit fat bias. High levels of implicit and/or explicit anti-fat bias have been found in graduate students studying physical education (O'Brien, Hunter, & Banks, 2007) as well as in undergraduate and graduate exercise science students (Chambliss, et al., 2004). Similarly, a study of dietetics students revealed that 65 percent of those surveyed strongly agreed that obese patients have poor self-control, and 41 percent strongly agreed that obese patients have no willpower (R. Puhl, et al., 2009). These students exhibited moderate fat phobia overall (R. Puhl, et al., 2009). The same study found that dietetics students tended to rate obese people as less likely to comply with treatment recommendations, based on assessing patient profiles (R. Puhl, et al., 2009). Data from a purposive sample of practicing dietitians suggests that these biases are not only present in students, but also among registered dieticians, who believed that client overweight was attributable to emotional problems (McArthur & Ross, 1997). One study found no difference between the negative attitudes exhibited by dietetics students and registered dietitians toward obesity (Oberrieder, et al., 1995), while another estimated that the unfavorable attitudes about obesity among this population may be comparable to those in the general population (Berryman, Dubale, Manchester, & Mittelstaedt, 2006).

Psychotherapists may also exhibit weight bias. Davis-Coelho and her colleagues found that different treatment goals and provisional diagnoses were given for obese clients than non-obese clients, based on photographs and self-descriptions. Obese patients were more likely to be given a provisional diagnosis of an eating disorder than were normal-weight patients, and improving body image was significantly more likely to be listed as a treatment goal for obese patients than for non-obese patients (Davis-Coelho, et al., 2000). These findings suggest that clinicians may modify their treatment plan on the basis of a patient's weight alone, and that these treatments may be influenced by anti-fat prejudice.

Stigmatization of obesity has also been documented among nurses (Maroney & Golub, 1992). The majority (between 60.5 and 88.3 percent) of student and registered nurses in a Hong Kong study believed that obese people liked food, were more likely to overeat, and were shapeless, slow, and unattractive (Poon & Tarrant, 2009). Interestingly, nurses in this study reported having negative attitudes about obese people but neutral attitudes toward the management of obese patients (Poon & Tarrant, 2009), which suggests that some individuals working in healthcare fields may divorce qualities attributed to a patient from qualities attributed to the management of the same patient's health needs. The same study also revealed that registered nurses had more negative perceptions of obesity than did student nurses (Poon & Tarrant, 2009), which may mean that more experience in caring for obese patients does not diminish weight prejudice but rather amplifies it.

Finally, a wealth of research on weight bias among physicians and medical students has been conducted. These studies reveal that, while they encounter obese patients frequently and have access to scientific studies that provide evidence of genetic and other uncontrollable elements of obesity (Hebl & Xu, 2001), and while they are trained to treat all patients warmly

and with respect (Hebl & Xu, 2001), physicians are not immune to obesity stigma (Brown, 2010; Wigton & McGaghie, 2001). Indeed, obesity was found to be the fourth most common medical condition negatively perceived by physicians, ranking just below drug addiction and above conditions related to sexual behavior, with 33.5 percent of physicians reporting negative perceptions of obesity (D. Klein, Najman, Kohrman, & Munro, 1982). Weight bias has even been reported among health care specialists attending a continuing education meeting on obesity (Teachman & Brownell, 2001) and among physicians specializing in obesity (Schwartz, et al., 2003).

What is perhaps most surprising and concerning about these findings is that clinicians' attitudes seem to be directed toward obese people themselves rather than to the less tangible concept of obesity (Teachman & Brownell, 2001). In a variety of studies, physicians have associated obese people with the terms "worthless" (Schwartz, et al., 2003), "stupid" (Schwartz, et al., 2003), and "lazy" (Cade & O'Connell, 1991; Foster, et al., 2003; Price, Desmond, Krol, Snyder, & O'Connell, 1987; Schwartz, et al., 2003), and have also been found to characterize obese people as overindulgent (Cade & O'Connell, 1991), weak-willed (Foster, et al., 2003), sloppy (Foster, et al., 2003), unattractive or ugly (Foster, et al., 2003), awkward (Foster, et al., 2003), sad (Price, et al., 1987), lacking in self-control, discipline, or willpower (Hebl & Xu, 2001; Kristeller & Hoerr, 1997; Price, et al., 1987), non-adherent to medication (Huizinga, Bleich, Beach, Clark, & Cooper, 2010), less healthy (Hebl & Xu, 2001), worse in taking care of themselves (Hebl & Xu, 2001), and more difficult to care for than other patients (Amy, Aalborg, Lyons, & Keranen, 2006). These attributes are not characteristics of all obese people, yet have been consistently associated with obesity in studies of physicians' implicit and explicit beliefs.

Research conducted among medical students suggests that they, too, exhibit negative attitudes about overweight and obese patients. In one study, medical students rated obese-appearing patients as less attractive, less compliant, and more depressed than normal-weight-appearing patients (Wigton & McGaghie, 2001). In another study, 57 percent of medical student respondents characterized obese individuals as lazy, 52 percent believed obese people to be sloppy, and 62 percent believed obese people lacked self-control (Wiese, et al., 1992). Interestingly, nearly one quarter of the same students disagreed when asked if obese individuals are often labeled with a variety of undesirable characteristics (Wiese, et al., 1992), which suggests that medical students may not only be unfamiliar with their own biases but may be unaware of the existence of weight stigma in general. Medical students' negative perceptions of obese people appear to be as enduring as those in the general population; even after an eight-week psychiatry rotation in which they had direct contact with obese individuals, medical students' negative attitudes persisted (Blumberg & Mellis, 1985).

The widely-reported weight bias among physicians and medical students is unsurprising to some extent, given that these individuals are subjected to the same social norms and media influences as the general population. However, beliefs and perceptions of obesity among medical students and physicians are of concern, as they may affect the decisions that are made about the medical care and treatment provided to these patients (Hebl & Xu, 2001; Teachman & Brownell, 2001). Studies suggest that physicians' beliefs are also perceived by obese patients, and may contribute to their experiences of weight-based stigmatization. Anecdotes about physicians mocking or belittling their obese patients abound (Kahn, 2010). In a sample of adults belonging to a national non-profit, non-commercial weight-loss support group, nearly 8.2 percent of respondents reported that a health professional was the source of the very worst stigmatization

experience they had encountered (R. M. Puhl, Moss-Racusin, et al., 2008). Women participating in obesity trials at a university clinic expressed frustration that "doctors don't believe me when I tell them I don't eat that much" (Wadden, et al., 2000), and other obese women have reported that their physicians seem to struggle to see anything but their weight, even relating such maladies as the common cold back to their weight (Hayden, et al., 2010).

Weight Bias Among Public Health Practitioners

To date, no studies have explicitly examined weight stigma among public health academicians, researchers, or policy makers. While the effect of any weight bias in these groups may be more difficult to ascertain than among those in other health-related professions whose prejudices may have an immediate impact on individual-level health, latent discriminatory beliefs among current or future public health practitioners could affect the way public health research is conducted and how health messages, education, and policies are shaped at the community- and population-level. Preliminary research suggests that overweight people have been underrepresented in health research, with the exception of research that expressly focuses on obesity (R. Puhl & Brownell, 2001), which suggests that weight biases may influence the decisions these individuals make in planning and implementing health research. Though examining the weight biases of public health practitioners would likely require the involvement of people from a diverse array of backgrounds, professions, and agencies, it is impossible to know the existence or effect of weight bias in this population without systematic investigation.

Do Anti-Fat Attitudes Translate into Discriminatory Behavior?

Some research suggests that negative beliefs about overweight and obesity may translate into the way that physicians and other health professionals manage the medical needs of their obese patients. Negative attitudes have been found to produce psychic stress among physicians who exhibit them (D. Klein, et al., 1982), which could subsequently affect behavior and medical treatment of the individuals toward whom these negative attitudes are directed. In one study, physicians who reviewed the medical form for an obese patient reported that they would order more tests and spend less time with heavier patients than those who reviewed the medical form of a normal-weight patient (Hebl & Xu, 2001). In the same study, 12 of the 13 affective and behavioral indices were significant in a linear trend analysis, indicating that the heavier the patients were, the more negative the attitudes and distancing behaviors they faced from physicians (Hebl & Xu, 2001). Physicians are also more likely to recommend psychological counseling to heavier individuals, which implies that physicians may believe that overweight patients must necessarily also be unstable and unhappy (Hebl & Xu, 2001), though this may also be a reflection of a greater understanding of the psychosocial consequences associated weight-based discrimination. Physicians who were asked to evaluate an obese case were less likely to report wanting the obese patient rather than a non-obese patient in their continuity-of-care practice (Wigton & McGaghie, 2001). Finally, patients who were perceived by their physician to be non-adherent to medication have been found not to have received guideline-recommended care for diseases such as acute coronary syndrome, hemophilia, and HIV (Huizinga, et al., 2010), which suggests that some of the negative stereotypes exhibited by physicians may translate into actual gaps in care. These findings are particularly worrisome, as the same finding – that

negative attitudes influence decisions and behaviors – could be true for those working in other health professions (such as health educators or individuals working for insurance companies) who are responsible for some aspect of the management, care, or education of obese individuals.

Other research suggests that the existence of implicit anti-fat bias does not actually translate into discriminatory behavior (Chambliss, et al., 2004). In one study of physicians, obesity status did not seem to affect management of a patient with an abdominal pain condition (Wigton & McGaghie, 2001). However, some researchers hypothesize that negative perceptions of obese people, such as believing them to be lazy, worthless, or weak-willed, may subtly influence behavior in both observable and subtle ways, such as through the amount of time that physicians spend with patients, the quality of their interactions, the degree of empathy extended, as well as through individuals' beliefs about the capacity of their patients or clients to improve or heal, and their willingness to provide additional supports to their patients (Schwartz, et al., 2003). Others conjecture that hostile feelings or even mild annoyance about overweight and obesity could translate into rushing through appointments or engaging in more negative interactions with overweight and obese patients than they would with a normal-weight client (Hebl & Xu, 2001; O'Brien, Puhl, Latner, Mir, & Hunter, 2010). More research will be necessary to establish the degree to which negative attitudes toward certain categories or conditions may predict behavioral change in physicians and others in health-related fields toward these patients and their management of these conditions.

Part II: Weight-Based Discrimination

Obesity and Discrimination

Discrimination can be understood as the behavioral manifestation of weight bias or anti-fat prejudice (Danielsdottir, et al., 2010). Numerous studies have documented that overweight and obese people face not only stigmatization but also mistreatment due to their weight, which may be manifested as overt discrimination or as more subtle forms of differential treatment, such as being stared at (Cossrow, Jeffery, & McGuire, 2001). In fact, weight-related discrimination was the fourth most prevalent form of discrimination among all adults, following gender, age, and race discrimination (R. M. Puhl, Andreyeva, & Brownell, 2008). Across gender, age, and race categories, obese people have been found more likely to report major discrimination, interpersonal discrimination, work-related discrimination, and health discrimination than normal-weight individuals (Carr & Friedman, 2005). Data from the National Survey of Midlife Development indicate that the risk of weight discrimination was highest among individuals with a BMI greater than 35 (R. M. Puhl, Andreyeva, et al., 2008). Perceived weight-related mistreatment was found to be strongly associated with BMI among a non-clinical sample of adults enrolled in a weight-gain prevention program, and in the same study reported mistreatment among those in the highest BMI quartile was more than ten times the prevalence of reported mistreatment among those in the lowest BMI quartile (Falkner, et al., 1999). A dose-response relationship between BMI category and the prevalence of perceived weight discrimination was also found in a study of a sub-subsample of overweight and obese individuals drawn from the National Epidemiologic Survey on Alcohol and Related Conditions, a nationally representative study (Hatzenbuehler, Keyes, & Hasin, 2009). However, other research has revealed that individuals across all BMI levels, from the overweight range to the highest levels

of obesity, reported similar experiences with weight-based stigmatization and discrimination (R. M. Puhl, Moss-Racusin, et al., 2008), which suggests that anyone who is overweight, regardless of his/her degree of overweight, is susceptible to weight bias and the negative consequences associated with it (R. M. Puhl, Moss-Racusin, et al., 2008).

Weight-Based Discrimination in Employment

Numerous studies have indicated that overweight and obese people face discrimination in the workplace (Giel, Thiel, Teufel, Mayer, & Zipfel, 2010; R. M. Puhl, Andreyeva, et al., 2008; R. M. Puhl & Brownell, 2006). Data from a prospective cohort study revealed that obesity was associated with reduced employment at follow-up, even after adjusting for demographic factors, smoking, exercise, and self-reported health (Tunceli, Li, & Williams, 2006). Obesity has been associated with a persistent wage penalty, ranging from 1.4 percent to 4.5 percent of income (Baum & Ford, 2004). In a community-based survey of English-speaking adults, nearly 60 percent of those who reported being discriminated against on the basis of their weight or height believed they had been discriminated against on average four times over the course of their lifetime (R. M. Puhl, Andreyeva, et al., 2008), which was similar to the frequency of discrimination among those who reported experiencing race and sex discrimination. Analysis of the National Longitudinal Survey of Youth indicated that obese individuals are underrepresented in managerial and professional occupations and overrepresented in transportation occupations, which suggests that obese people may engage in occupational sorting to offset wage penalties that they might face in higher-paying professions (Pagán & Dávila, 1997)

Qualitative research supports the finding that obese people experience discrimination in employment settings. In one study, participants often reported a feeling judged in a subtle way

because of their failure to conform to social expectations of an appropriate weight (Cossrow, et al., 2001), while obese participants in another study reported that they had been refused positions or removed from visible roles because they did not fit the company image (Hayden, et al., 2010).

Weight-Based Discrimination in Education

Evidence of discrimination against obese people has also been documented in educational settings. Negative attitudes toward obese students have been documented among educators (Greenleaf & Weiller, 2005; Neumark-Sztainer, Story, & Harris, 1999; O'Brien, et al., 2007), and obese students have even been dismissed from college because of their weight (Weiler & Helms, 1993). An analysis of nationally representative data from the National Longitudinal Study of Adolescent Health found that obese girls had a 50 percent lower chance of attending college than those who were not obese (Crosnoe, 2007). Such disparities in educational attainment, which may be a result of stigmatization and discrimination, are likely to have long-lasting effects on socioeconomic status and social mobility (Crandall & Schiffhauer, 1998). A nationally representative sample of 10,039 16- to 24-year olds found that after seven years of follow-up, women who had been overweight were less likely to be married, had lower household incomes, and had higher rates of household poverty than women who had not been overweight, independent of their baseline socioeconomic status and aptitude test scores (Gortmaker, Must, Perrin, Sobol, & Dietz, 1993). This socioeconomic differential was not observed among people with other chronic conditions, which suggests that the stigma against obesity has unique implications for one's future socioeconomic status.

Weight-Based Discrimination in Interpersonal Interactions and Relationships

That an obese person's weight provokes stigmatizing attitudes and even discriminatory behaviors in interpersonal relationships is well-documented. Of those who reported having experienced weight or height discrimination in a nationally representative study of U.S. adults, one third experienced being treated as inferior, or with less respect and courtesy, "often" or "sometimes" (R. M. Puhl, Andreyeva, et al., 2008). In a study in which conversations between obese and non-obese women and their telephone partners were judged by individuals blinded to the weight of the women, obese women were liked less, made a poorer impression, and were rated as being less socially skilled and physically attractive than non-obese women (C. T. Miller, Rothblum, Barbour, Brand, & Felicio, 1990). The more obese the women were, the less positively they were evaluated by both the judges and their telephone partners (C. T. Miller, et al., 1990), which suggests that the social behavior of obese and non-obese women may actually differ, perhaps as a result of perceived discrimination.

Weight-Based Discrimination in Healthcare Contexts

As we have seen, health practitioners are not immune from the stigmatizing beliefs about obesity that are present in the general population (MacLean, et al., 2009). Discrimination against obese people is also evident in the healthcare arena (R. M. Puhl & Brownell, 2006; Teachman & Brownell, 2001). In a geographically-representative national random sample of physicians, 37 percent of those surveyed reported having negative reactions to the appearance of obese patients (Foster, et al., 2003). Respect for obese patients has also been found to decline as patient BMI increases, independent of other patient and provider characteristics (Huizinga, Cooper, Bleich, Clark, & Beach, 2009). This finding is of particular interest, because physicians who are more

respectful of their patients have been found to provide them with more information during visits, and to express more positive affect toward them (Beach, Roter, Wang, Duggan, & Cooper, 2006) than toward patients whom they do not respect. A nonclinical sample of adults found that health care providers were the individuals about whom participants expressed the most concern and frustration with regard to weight stigmatization (Cossrow, et al., 2001). It is important to note, however, that not all obese people feel that they are being discriminated against in clinical contexts. The majority of obese women surveyed in one study did not report being treated disrespectfully or insensitively by their physicians when weight management was discussed, though a small minority (between 0.4 and 8.0 percent) believed that they were routinely criticized or treated disrespectfully by healthcare professionals (Wadden, et al., 2000). A study of internal medicine residents found that few (8 percent) reported feeling uncomfortable examining obese patients or difficulty feeling empathy for obese patients, though these data are based on self-report and may be subject to social desirability bias.

Part III: The Consequences of Stigmatization and Discrimination

Social Consequences

Investigations of the social determinants of health have shown that discrimination on the basis of weight or other statuses, such as race or sex, has negative social consequences. The internalization of stigma and prejudice by targeted individuals has been found to constrict social networks, compromise quality of life, and result in low self-esteem, depressive symptoms, unemployment, and income loss (Stuber, et al., 2008). An inverse relationship between perceived weight discrimination and social support has been documented (Hatzenbuehler, et al., 2009), as have feelings of social isolation resulting from social exclusion or self-inflicted isolation

(Hayden, et al., 2010). Evidence from a nonclinical sample of adults suggests that overweight individuals may avoid going out socially or dating to avoid feeling judged or negatively evaluated for weighing more than is socially acceptable (Cossrow, et al., 2001) or feeling discriminated against in some other capacity. Indeed, all focus group participants concurred that weight status influences their social interactions (Cossrow, et al., 2001).

Weight-based bias and discriminatory behaviors are even committed by individuals closest to the obese person him- or herself, such as family, friends, co-workers, and classmates (R. M. Puhl & Brownell, 2006). Given the high percentage (48 percent) of overweight adults who reported that the worst stigma experiences occurred with family members or friends, Puhl and her colleagues suggest that the normativity of weight bias is such that even close relatives, including the parents and spouses of obese people, are not immune to negative attitudes about overweight and obesity (R. M. Puhl, Moss-Racusin, et al., 2008). Perhaps as a result, obese women sometimes feel as though they must compensate for others' reactions to their appearance (Carol T. Miller, Rothblum, Felicio, & Brand, 2000). These findings underline the profound effects that discrimination can have on the personal and social lives of obese individuals.

Medical Consequences

Discrimination has been linked to a variety of adverse medical consequences, including depression, hypertension, coronary heart disease, and stroke (Major & O'Brien, 2005). It is possible that the stress pathways associated with discrimination may partly explain or mediate the relationship between obesity and the diseases that this condition has traditionally been charged with causing (Muennig, 2008), such as cardiovascular diseases and diabetes. Indeed, those who perceive weight-based discrimination were found to be 3.21 times more likely to be in

the highest quartile of perceived stress compared to those who did not believe that they had experienced weight-based discrimination (Hatzenbuehler, et al., 2009).

The experience of prejudice and discrimination is also believed to contribute to the production and maintenance of health disparities (Nelson, 2002). Among obese individuals, a growing body of research has documented the relationship between higher BMI and the delay or avoidance of receiving health care services. Despite reporting satisfaction with health care services received, obese women reported delaying health care for weight-related reasons (like having gained weight or having to wear a gown) (Amy, et al., 2006; Drury & Louis, 2002). In another study, BMI was found to be directly related to delaying clinical breast examinations, gynecological exams, and Papanicolaou (Pap) smears, even after adjusting for race, age, income, education, smoking, and health insurance status (Fontaine, Faith, Allison, & Cheskin, 1998). Mammogram use has also been shown to be lowest among women with a BMI greater than 35 (C. C. Wee, McCarthy, Davis, & Phillips, 2004); in the same study, both overweight and obese women were significantly less likely than normal-weight women to report previous mammography (C. C. Wee, McCarthy, Davis, & Phillips, 2000). The same was true for rates of screening with Pap smears; overweight and obese women reported significantly lower rates of cervical cancer screening than did normal-weight women, even after controlling for sociodemographic variables, health insurance and access to care, illness burden, and provider specialty (C. C. Wee, et al., 2000). Even among a sample of well-educated, female nurses, nursing assistants, health unit coordinators, and general psychiatric assistants employed at a hospital, 12.7 percent of respondents reported delaying or cancelling a physician appointment because of weight concerns or embarrassment about their weight (Olson, Schumaker, & Yawn, 1994). Of all the variables considered (including age, educational level, women's perception of

her weight, occupation, or reason for the most recent medical visit), BMI was the only statistically significant variable found to be correlated with cancelling an appointment (Olson, et al., 1994). Morbidly obese women have been found to have statistically significantly lower rates of colon cancer screening compared to women with a normal BMI, though this correlation was not found for overweight or obese women, or among men of any weight category (Rosen & Schneider, 2004). Finally, a systematic review of studies investigating the relationship between body weight and Pap testing found that obese White women were significantly less likely to report being screened for cervical cancer than were non-obese White women (Maruthur, Bolen, Brancati, & Clark, 2009), though the same relationship did not hold for Black women. Taken together, these studies provide powerful evidence that obese individuals are more likely to delay seeking preventive care and medical treatment than their non-obese counterparts, which could have profoundly negative consequences for their long-term health, especially because obesity increases the risk of developing the same types of cancers (breast, cervical, and colorectal) that have been found to be associated with low screening rates among obese people (Rebecca M. Puhl, et al., 2010).

Subjective barriers to seeking out medical care vary, but tend to focus on having experienced stigmatization from physicians or having faced other logistical and psychological barriers. Encountering inappropriate comments from doctors was one of the most common stigmatizing situations reported by adults involved in a weight loss support group, with over half of the sample reporting having experienced this form of stigmatization (R. M. Puhl & Brownell, 2006). The anticipation of disrespectful treatment from healthcare providers was cited by 36% of female respondents in another study as a barrier to seeking care (Amy, et al., 2006), which further supports the notion that women are well aware (Amy, et al., 2006) of physicians'

negative beliefs about obese people, and that these perceptions likely influence their choice of whether or not to seek treatment. Logistical issues that may prevent obese people from seeking care include medical equipment that is inappropriate or unsuitable for obese patients (Kaminsky & Gadaleta, 2002), such as gowns, exam tables, and blood pressure cuffs (Amy, et al., 2006) that are too small to accommodate larger clients. Though many hospitals have made a concerted effort to adapt their facilities to the needs of overweight and obese clients in recent years (Ghose, 2010), past experiences and the fear of facing such indignities in the future may still affect an obese person's decision to seek help for a medical condition (Hayden, et al., 2010).

Mental Health Consequences

In addition to its effect on physical health and access to medical care, discrimination and stigmatization may have a profound impact on the mental health of obese people. Numerous studies have indicated that anti-fat prejudice has discernable, negative mental health consequences for the targets of such persecution (Danielsdottir, et al., 2010). A nationally-representative sample of U.S. adults found that obesity was associated with significant increases in lifetime diagnoses of major depression, bipolar disorder, and panic disorder or agoraphobia in both men and women (Simon, et al., 2006). Other studies have found experiences of weight-based discrimination to be significantly associated with depression (regardless of BMI) (Friedman, et al., 2005), self esteem (Friedman, et al., 2005; Myers & Rosen, 1999), social self esteem (Annis, Cash, & Hrabosky, 2004), lower self-acceptance (Carr & Friedman, 2005), body image distress (Annis, et al., 2004; Friedman, et al., 2005), general psychiatric symptoms (Friedman, et al., 2005), psychological distress (including overall psychological symptomology, interpersonal sensitivity, depression, social isolation, anxiety, obsessive-compulsive disorder,

and suspiciousness) (Ashmore, Friedman, Reichmann, & Musante, 2008), and poorer reported quality of life (Annis, et al., 2004). A robust relationship between perceptions of weight discrimination and prevalence of current psychiatric disorders (including major depressive episode, social phobia, manic episode, post-traumatic stress disorder, and others) and substance use disorders (including nicotine, alcohol, and drug dependence) has also been found (Hatzenbuehler, et al., 2009). More perceived weight stigma experienced in childhood, adolescence, and adulthood was related to greater body image dissatisfaction and distress, weight preoccupation, and dysfunctional beliefs about appearance, as well as lower self-esteem, lower life satisfaction, and greater levels of social anxiety, depression, and binge eating (Annis, et al., 2004). Even individuals who are not objectively overweight or obese may exhibit poor body image and be susceptible to the negative mental health consequences of weight-based stigma (Schmalz, 2010). Results from several qualitative studies underscore the finding that experiences of weight-based stigma and discrimination may contribute to poorer mental health; adults belonging to a weight-loss support organization reported feeling depressed and down after experiencing stigmatizing encounters (R. M. Puhl, Moss-Racusin, et al., 2008). Obese women reported low self-esteem and self-confidence in another qualitative study (Hayden, et al., 2010).

Importantly, the coping mechanisms that obese people employ to deal with weight stigma, including negative self-talk, crying, or isolating oneself, may further contribute to poor mental and physical health outcomes (Myers & Rosen, 1999). Eating more food or refusing to diet were frequently reported as coping strategies for dealing with weight stigma (R. M. Puhl & Brownell, 2006). In fact, in a nationwide survey of adults participating in a weight-loss support group, 44 percent of female and 57 percent of male respondents could be classified as having binge eating disorder (R. M. Puhl & Brownell, 2006). Whether this disorder was a contributor to

their overweight or a consequence of suffering weight stigmatization is not possible to discern from these cross-sectional data, but the relationship between weight status, stigmatization, and disordered eating is nevertheless striking. Similarly, consciousness of weight-related stigma has been found to be negatively related to one's perceived competence in physical activity, suggesting that individuals who fear being stigmatized may elect not to participate in exercise (Schmalz, 2010). Not participating in physical activity may not only contribute to overweight and subsequent stigmatization, but may have health consequences of its own, given that exercise is associated with positive health implications independent of BMI (Kruk, 2007).

It is important to note that the experience of weight stigma may not always be associated with poor mental health. In a sample of 3,304 adults, self-esteem and depressive symptoms were not found to be significantly related to having experienced stigmatizing situations (R. M. Puhl & Brownell, 2006); another study of 1,013 women belonging to a national, non-profit weight loss organization confirmed that beliefs that weight-related stereotypes were true were unrelated to psychological functioning or distress (R. M. Puhl, Moss-Racusin, & Schwartz, 2007), though these beliefs were associated with more frequent binge eating. Similarly, a British study of a non-clinical sample of obese women found that women in the highest BMI range were not in the poorest state of mental health (Hill & Williams, 1998). So while a growing body of evidence links weight-related stigma to negative psychosocial consequences, one must not assume that being discriminated against on the basis of weight will necessarily lead to poor mental health. Though some evidence suggests that social support alone cannot buffer the adverse effects of perceived weight discrimination on mental health (Hatzenbuehler, et al., 2009), experiences of weight-related stigma and other factors such as gender and degree of obesity may still mediate psychological consequences of overweight and obesity (Rebecca M. Puhl, et al., 2010).

Stigmatization and Discrimination as 'Motivators' for Weight Loss

While some have suggested that in some cases the stigmatization of overweight and obesity may be morally defensible (Bayer, 2008), particularly when the anxiety that results from such stigma promotes healthy eating and exercise behaviors among formerly-overweight individuals (perhaps as a result of past experiences of social adversity related to excess weight) (Annis, et al., 2004), most researchers would agree that weight bias, stigma, and discrimination do not have the effect of encouraging people to change their habits. The internalization of weight bias has actually been shown to increase unhealthy eating behaviors and reduce motivation to lose weight (R. M. Puhl, et al., 2007); as a result, some researchers have concluded that there is little evidence that stigma is an effective deterrent (MacLean, et al., 2009), and that weight stigma and discrimination can only be considered an "arbitrary and cruel form of social control" (Burris, 2008). While the full impact of weight stigma in healthcare and other settings is not fully understood (Huizinga, et al., 2010), it is important for public health practitioners and healthcare providers to recognize that obesity is not being addressed to the same degree as non-stigmatized medical conditions, in part due to discrimination (Pomeranz, 2008). In devising strategies to promote health among overweight and obese people, clinicians and public health practitioners must therefore remain cognizant of the potentially devastating social, medical, and mental health consequences of weight stigma and discrimination on their overweight and obese patients.

Part IV: Weight-Based Discrimination: A Human Rights Issue?

Background to Discrimination in the Human Rights Regime

Non-discrimination is a fundamental principle of the human rights regime. While it did not establish an explicit definition of "discrimination" or "non-discrimination," the Sub-Commission on the Prevention of Discrimination and Protection of Human Rights (later replaced by the United Nations Commission on Human Rights) was the first body to propose that "prevention of discrimination" be understood as action(s) that impede equality of treatment (McKean, 1985; Weiwei, 2004). Neither the International Covenant on Civil and Political Rights (ICCPR) nor the International Covenant on Economic, Social and Cultural Rights (ICESCR) define "discrimination," though Article 2 of the Universal Declaration of Human Rights establishes that "every human being has the right to certain goods and freedoms without "distinction on the basis of race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth, or other status" (UN General Assembly, 1948). The Universal Declaration of Human Rights further provides that "all are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination" (UN General Assembly, 1948), underlining the expectation that all individuals are to be treated equally under the law. Similarly, the Charter of the United Nations includes as a primary purpose the promotion and encouragement of respect for human rights "without distinction as to race, sex, language, or religion" (United Nations, 1945). Two international treaties, the Convention on the Elimination of All Forms of Racial Discrimination and the Convention on the Elimination of All Forms of Discrimination Against Women, were specifically established to define and clarify the guarantees of non-discrimination (United Nations Department of Public Information, 2011) on the basis of race and sex, respectively.

Despite the striking commitment to universality and non-discrimination manifested in these documents, human rights abuses motivated by discrimination nevertheless occur. Many human rights abuses are products of discrimination against particular groups of people. In 2007, human rights groups condemned the Egyptian government for discriminating against citizens who refused to list "Muslim" or "Christian" on their national identity cards and were subsequently harassed or denied employment (Human Rights Watch, 2007). Widespread discrimination on the basis of political opinion, particularly in employment and vocational training, was the impetus for the Fair Employment and Treatment Order 1998 in Northern Ireland ("The Fair Employment and Treatment (Northern Ireland) Order 1998," 1998). In many parts of the world, a substantial gender disparity exists in primary and secondary education between men and women, and estimated earnings are significantly lower for women than for men in all regions of the world (UNICEF, 2006), suggesting widespread gender-based discrimination. In the United States, law enforcement officials frequently have been accused of using race as a surrogate for criminal suspicion, particularly in the enforcement of drug laws. This racial discrimination in law enforcement has resulted in the disproportionate representation of Black Americans in jails and prisons (Human Rights Watch, 2008). In addition to committing human rights abuses, governments are often guilty of crimes of omission. Governments fail to acknowledge human rights violations against minority and stigmatized populations, such as those resulting from the practice sati in India (Bose, 2000) and the practice of female genital mutilation in parts of Africa (Odeku, Rembe, & Anwo, 2009). More generally, governments may fail "to fulfill their duties to protect, investigate, or prevent" the rights of women to be free from discrimination and gender-based violence (Human Rights Watch, 2010). Perhaps the most offensive and widely-recognized violation of human rights, genocide is generally understood to

be “the intentional extermination of a single ethnic, racial, or religious group,” (Maiese, 2003) and thus inherently involves discrimination against a particular category of people. These examples underscore the fact that human rights abuses can often be traced back to discriminatory practices by governments, groups, and individuals.

Nondiscrimination in the Language of Human Rights Instruments

That governments permit or even inflict egregious violations of human rights motivated by discrimination is somewhat surprising, given that the language of non-discrimination is so ubiquitous in international human rights agreements and treaties. The language of the Charter of the United Nations and the Universal Declaration of Human Rights is inclusive of many forms of inequity. Eight of the nine core international human rights instruments (the International Convention on the Elimination of All Forms of Racial Discrimination; the International Covenant on Civil and Political Rights; the International Covenant on Economic, Social and Cultural Rights; the Convention on the Elimination of All Forms of Discrimination against Women; the Convention against Torture and other Cruel, Inhuman or Degrading Treatment or Punishment; the Convention on the Rights of the Child; the International Convention on the Protection of the Rights of All Migrant Workers; and the Convention on the Rights of Persons with Disabilities) contain provisions that protect individuals from “discrimination of any kind” or distinction on the basis of “race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, property, disability, birth or other status.”

Two categories (race and sex) are protected by their own international non-discrimination treaties (UN General Assembly, 1965, 1979). The International Convention on the Protection of the Rights of All Migrant Workers also introduces categories not found in other treaties, such as

"economic position" and "marital status" (UN General Assembly, 1990), which suggests that the categories that merit protection under such international agreements may be somewhat fluid, or may be undergoing further consideration.

Finally, several specific scenarios in which discrimination is not allowable under international law are addressed in the International Labor Organization (ILO) Convention No. 111 Concerning Discrimination in Respect of Employment and Occupation (1958) and the UN Educational, Scientific and Cultural Organization's (UNESCO) Convention Against Discrimination in Education (1960). The ILO Convention aims to eliminate discrimination "which has the effect of nullifying or impairing equality of opportunity or treatment in employment or occupation" (International Labor Organization, 1958), while the UNESCO Convention seeks to prohibit "depriving any person […] of access to education of any type or at any level" (UN Educational Scientific and Cultural Organization, 1960).

Overweight/Obesity as a Human Rights Concern

As we have seen, obese people face discrimination in many contexts, including employment (Giel, et al., 2010; R. M. Puhl, Andreyeva, et al., 2008; R. M. Puhl & Brownell, 2006), education (Crosnoe, 2007), and healthcare (R. M. Puhl & Brownell, 2006; Teachman & Brownell, 2001). Discrimination against obese individuals is believed to be a contributor to the production and maintenance of health disparities (Nelson, 2002), as negative mental and physical health consequences are associated with the frequency and intensity of one's experience of discrimination (Danielsdottir, et al., 2010). Given that discrimination against obese people is pervasive and insidious (Hebl, et al., 2008), and has been found to be associated with deleterious

health outcomes, some have argued that weight status merits protection under international human rights law.

While none of the core international human rights treaties includes language that prohibits discrimination "on any grounds," each includes a provision against discrimination based on "other status." It is unclear what type of discrimination can, should, or is intended to be included in this category, but one can assume that this ambiguous language was incorporated to ensure that the principles of non-discrimination could be applied to more categories than those identified by name. The ubiquity of the language of non-discrimination in nearly all of the foundational international treaties lends further credence to the idea that other, unnamed statuses may merit protection in future interpretations of the law.

It remains unclear whether weight status could be considered an example of one such "other status" to which human rights law would apply. There is currently no precedent in either hard or soft law for including or excluding weight status as a protected categorization in the human rights regime, however, other health statuses (such as HIV/AIDS status) have been formally acknowledged by the Commission on Human Rights as falling under the "other status" designation in non-discrimination provisions. In fact, in a 1996 resolution, the Commission declared that "the term 'in other status' in non-discrimination provisions in international human rights text *should be interpreted to cover health status*, including HIV/AIDS" (United Nations High Commissioner for Human Rights, 1996) (emphasis added). However, no further general comments or resolutions explicitly interpret the "other status" provision to include weight status, or any other specific health status beyond HIV/AIDS. As the prevalence of overweight, obesity, and the frequency and intensity of weight-based discrimination rise worldwide, one can expect

that pressure will mount on courts and international bodies to determine whether weight status merits protection by human rights law.

Part V: The Legal Landscape of Weight-Based Discrimination

Legal Recourses to Challenge Weight-Based Discrimination

While the strength and prevalence of weight discrimination in comparison to other forms of discrimination (such as race and sex) remains somewhat unclear (Andreyeva, et al., 2008), some evidence suggests that the prevalence of weight and height discrimination among adults in the United States is increasing. In an analysis of two waves of data from the National Survey of Midlife Development, Andreyeva and colleagues found that the prevalence of weight and height discrimination increased significantly, from 7.3 percent in 1995-1996 to 12.2 percent in 2004-2006 (Andreyeva, et al., 2008), and may now be at a level comparable with race and age discrimination, both of which are protected classes under federal law. Such a precipitous rise in discrimination in recent years, coupled with a general belief that obesity is a induced by individual behavior that involves attributions of personal control and responsibility rather than one that requires solutions geared toward improving economic and social disparities, highlights the need to engage in discussions of whether weight status deserves legal protection.

It is currently legal to discriminate against someone on the basis of his or her weight. No federal laws prohibit weight discrimination, and only one state (Michigan) and several cities (San Francisco, CA; Santa Cruz, CA; and Washington, D.C.) ban this type of discrimination through state law or city ordinances (Brown, 2010; *Elliott-Larsen Civil Rights Act of 1976*; Pomeranz, 2008). The lack of legal recourse to challenge weight-based discrimination is troubling, particularly given that much of the discrimination that overweight and obese people face is due

to discriminatory practices by employers, medical professionals, and health insurance companies (R. Puhl & Brownell, 2001), who are currently free to deny these individuals jobs, healthcare coverage, or care on the basis of their weight alone.

Several domestic statutory solutions for weight discrimination have been proposed. The Equal Protection Clause of the U.S. Constitution has been interpreted to provide strict protection against government distinction based on the "suspect classes" of race, ethnicity, religion and national origin, and to provide intermediate protection against government distinction based on gender and illegitimacy (Pomeranz, 2008). Extending these strict or intermediate protections to the status of weight could provide protections for overweight and obese (as well as underweight) individuals against weight-based discrimination by the government. Another possible recourse would be to amend the Civil Rights Act of 1964 to include weight as a protected class (Pomeranz, 2008). Alternately, a unique federal statute targeting weight discrimination in specific venues, like employment and healthcare, could be created (Pomeranz, 2008), modeled after those targeting age (the Age Discrimination in Employment Act of 1967) or disability discrimination (the Americans with Disabilities Act of 1990). Obese people could also attempt to seek recourse under the Americans with Disabilities Act by claiming that obesity is an "impairment" or that it is "regarded as" an impairment; but to do so, one would have to prove that his or her obesity is the result of a genetic, biological, or psychological condition like diabetes (Pomeranz, 2008), which could be difficult given the complex and still largely unknown causes of obesity. Finally, some have suggested that the most effective means of securing legal protection against weight discrimination would be to advocate at the state level for revisions to state antidiscrimination laws to include weight as a protected class, as Michigan does. While each of these options has the potential to protect overweight and obese individuals from unfair

treatment on the basis of their weight alone in the future, employing such recourses remains largely theoretical at present.

An alternative to pursuing domestic legal protections would be to endeavor to make a case for weight status as a class that warrants protection under international human rights law, which if adopted could accelerate the passage and implementation of domestic legislation to align with international law. Proponents could argue that weight status, as an example of a "health status," should be included in the "other status" category set forth in international non-discrimination law. One could argue that obesity/overweight, as a highly stigmatized condition for which lifestyle and individual behaviors are often blamed (Pomeranz, 2008), and which may affect people who are already members of socially disadvantaged groups (MacLean, et al., 2009), shares many similarities with HIV/AIDS, and should therefore be protected to the same degree under the non-discrimination provisions found in human rights law. Instead of or in addition to pursuing protection under non-discrimination clauses, one could argue that obesity can be considered a "long-term physical […] impairment which in interaction with various barriers may hinder […] full and effective participation in society on an equal basis with others" (UN General Assembly, 2007) as stated in Article 1 of the Convention on the Rights of Persons with Disabilities (CRPD), and that obesity may have the effect of "impairing or nullifying the recognition, enjoyment or exercise, on an equal basis with others, […] human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field" (UN General Assembly, 2007), as indicated in Article 2, which would suggest that obesity could be protected under the CRPD. Given that the United States has yet to ratify the CRPD and that the Americans with Disabilities Act would need to be aligned with the CRPD when and if it were ratified, protection under this international treaty could not be immediately assured. Additionally,

it is likely that similar questions would need to be addressed if obesity were to be protected under the CRPD as have arisen with domestic legislation (the Americans with Disabilities Act); namely, whether obesity can or should be considered an "impairment," and whether obese individuals would oppose being classified as having a disability (Solovay, 2005). The suitability of considering obesity as a disability under the CRPD therefore remains uncertain. However, as the body of legal precedent granting obese persons the ability to raise claims of discrimination on the basis of disability grows (Thompson, 2010), one can expect that the debate will continue about whether obesity constitutes a status worthy of protection under international law.

The importance of challenging weight bias and discrimination in domestic and/or international contexts cannot be understated, particularly given the widespread and persistent nature of stigmatization against overweight and obese individuals. Doing so will catalyze public support for government action to enact measures that directly confront and eliminate disparate treatment of obese people (Pomeranz, 2008), and could improve the medical and mental health outcomes that have been associated with overweight and obesity.

Part VI: The Role of Public Health Students in Addressing Weight-Based Discrimination

As the prevalence of obesity in the United States continues to rise, current and future public health practitioners will have an increased role to play in a variety of activities that must be undertaken to address the issue at the individual-, community-, and population-levels. Through the conduct of research, the design of public health interventions, the creation of education and messaging programs, and other avenues, public health practitioners may influence the extent to which weight-based stigmatization and discrimination are either propagated or curtailed. As we have seen, weight-based discrimination has been documented in the context of

employment, education, interpersonal relationships, and healthcare (R. Puhl & Brownell, 2001); whether or not public health research, interventions, and policy have also been influenced by weight-based stigma and discrimination has not been systematically investigated, though one study found that overweight people have been underrepresented in research other than that which explicitly focuses on obesity (Pomeranz, 2008). If decisions that public health practitioners make are indeed influenced by their beliefs – conscious or unconscious – about obesity, arming them with information about how to recognize their own weight-related stigmas (Schmalz, 2010) is likely to benefit both individual patients and populations that are targeted for weight-related public health interventions.

There is also some evidence to suggest that one's feelings toward a target group can predict endorsement of an ambiguously discriminatory health policy relevant to that group (Brochu & Esses, 2009); in one study, participants who scored higher in affective weight prejudice were less likely to perceive the policy of denying surgery to overweight patients as discriminatory (Brochu & Esses, 2009). Given the critical role that public health professionals play in promoting health at the population level, determining the degree of support among this group to enact legislation aimed at alleviating health disparities caused by discrimination among a stigmatized group, such as obese people, is of considerable interest (Pomeranz, 2008). Stronger articulation of concerns about the health consequences of weight-based discrimination among the general public and among powerful interest groups such as professionals working in the field of public health is likely to elicit responses from elected officials (Pomeranz, 2008); those who seek to advocate for legal protections against weight-based discrimination would therefore do well to assess beliefs and perceptions of obese people among such groups. This study will attempt to determine to what extent beliefs and perceptions about obese individuals may affect current

public health students' support for hypothetical legislation that would provide legal protections against weight-based discrimination.

CHAPTER 3: METHODS

Study Design

The purpose of this study is to investigate public health students' perceptions of overweight and obese individuals, and to determine their likelihood of supporting hypothetical legislation that would provide civil protections against weight-based discrimination for overweight and obese persons. The study design was cross-sectional, and the study was implemented via an online, self-administered, written survey. Data collection occurred from February 18, 2011 through March 20, 2011. Inclusion criteria for this study included being an English-speaking adult (18 years or older) currently enrolled at Emory University Rollins School of Public Health (RSPH). Participants were excluded from participation if they were under age 18, could not read written English, or were not a current student at RSPH. The survey took approximately 25 minutes to complete. The Emory University Institutional Review Board reviewed and approved the study protocol prior to implementation (see Appendix A).

Participants and Recruitment

A total of 1,051 students received the recruitment email at Emory University Rollins School of Public Health. Of these, 333 agreed to participate and initiated participation in the study, and 309 met eligibility criteria. The corresponding response rate for this study was 29.4%.

A recruitment email (see Appendix B) was sent to the public health student listserv, which included email addresses for all students in their first and second year of study at RSPH. The recruitment email contained a hyperlink to the online survey, which was administered using SurveyGizmo (http://www.surveygizmo.com), an online survey software tool. Upon clicking the hyperlink included in the recruitment email, prospective study participants were directed to an

online, written consent form (see Appendix C). Participants were asked to participate in a private location, and at a time during which they would not be disturbed. After reviewing the consent form, participants were given the option to enter their email address for a chance to win a $50 gift certificate to Amazon.com. Participation in this drawing was entirely voluntary; neither participation in nor completion of the survey was required to enter the drawing. Participants then had the option of selecting "Yes, I agree to participate" or "No, I do not wish to participate at this time." Participants who made the latter selection were directed to a page that thanked them for their interest in the study, advised them to save the recruitment email if they wished to participate at a later time, and requested that they close their browser window. Participants who selected "Yes, I agree to participate" were directed to the survey.

SurveyGizmo.com provided a secure, password-protected, encrypted data server on which all data were stored. Data were only accessible by the three-person research team. No identifying information was collected from research participants, and responses were kept strictly confidential. Email addresses that were voluntarily supplied for the purposes of the drawing were deleted upon the completion of the drawing, and were not linked with participants' survey responses. For the purposes of data analysis, each participant was assigned a unique identifying number. The research team had no direct contact with study participants, with the exception of the winner of the drawing who received the Amazon.com gift certificate via email.

Survey Development

The survey used in this study was comprised of six distinct sections, which collected information about demographics, pathological fear of fatness[1], beliefs about the causes of

[1] The use of the term "fat" in this survey in place of "overweight" or "obese" is intentional. Other studies (see, i.e. Crandall, 1994; Davis-Coelho, 2000; O'Brien et al., 2008) have also elected to use the term "fat" to divorce

overweight/obesity, a measure of social desirability, level of support for hypothetical legislation that would provide protection against weight-based discrimination in employment settings, and a final section that asked participants to consider whether discrimination should be allowable in a series of hypothetical scenarios. Wherever possible, scale items were drawn from previously published work. Participants were also given the opportunity to share additional thoughts or comments on the subject matter covered by the survey in an open-ended question at the end of the survey. The full survey can be found in Appendix D.

Demographics

Basic demographic information collected included age, sex, and race. Other demographic questions covered information about the participant's degree program (M.P.H., Ph.D., or a dual degree program) and year of study at RSPH, political affiliation, personal and family history of obesity, height, weight, and the environment in which he or she grew up (rural area, small city, mid-sized city, or large metropolitan area). These variables have been shown in previous research on other populations to affect attitudes toward obese people.

Fear of Fatness

To measure pathological fear of fatness (which is manifested as negative stereotypes and attitudes about fat people (Robinson, Bacon, & O'Reilly, 1993), the Fat Phobia Scale was utilized. Developed by Robinson, Bacon, and O'Reilly in 1993, the 50-item Fat Phobia Scale uses a modified semantic differential scale which asks participants to rate a fat person on a number of adjectives representing common beliefs about and stereotypes of fat people. Eight items not included on the original 50-item scale were added by the researchers, for a total of 58

---

participants' beliefs from a medical paradigm. Some have argued that the terms "overweight" and "obese" are inherently biased, and that the medical diagnoses to which they refer are controversial (Solovay, 2005); "fat" then, has gained acceptance as a more neutral descriptor (Wann, 2009). In this survey we have therefore elected to use the terminology adopted by previous researchers to study weight stigma.

items. The Fat Phobia Scale was scored on a continuous scale by summing the values for all 50 original items. Total possible scores ranged from 58 to 290, with higher scores corresponding to less fear of fat (fewer negative attitudes and stereotypes about fat people), and lower scores corresponding to more fear of fat (more negative attitudes and stereotypes about fat people).

The 50-item Fat Phobia Scale could be deconstructed into the six subscales identified through factor analysis by Robinson, Bacon, and O'Reilly (1993). These subscales are intended to measure the different concepts of fat phobia; the six concepts include attitudes and stereotypes that overweight and obese people: (1) are undisciplined, inactive, and unappealing; (2) are grouchy and unfriendly; (3) have poor hygiene; (4) are passive; (5) have emotional/psychological problems; and (6) are stupid and uncreative. Mean scores for each of these factors was computed, with higher scores indicating more positive attitudes on the traits included in each factor, and lower scores indicating more negative attitudes on the characteristics included in each factor.

A pictorial anchor of an obese individual on which participants were asked to base their responses was provided at the beginning of the Fat Phobia Scale. Adapted from the male obese figure (#8) in Stunkard et al.'s original nine-figure body size scale (Stunkard, Sorensen, & Schulsinger, 1983), this image was altered slightly to make it appear more gender-neutral so as not to introduce gender bias into participants' responses.

Previous studies suggest that the original, 50-item Fat Phobia Scale has excellent internal consistency (Cronbach's alpha = 0.92), content and construct validity, and factor structure based on its six subscales (Robinson, et al., 1993).

Causes of Obesity

To measure beliefs about the causes of overweight/obesity and thereby to assess the causality and blame constructs posited by the attributional theory of motivation, the Causes of Obesity Scale was used. The original 31-item scale was developed by Klaczynski (2004); the scale included three sub-scales (Social Causes, Internal Causes, and Physical Causes), and responses were measured on a four-point Likert scale. Reliability statistics for the original scale revealed that the Physical Causes and Social Causes sub-scales had marginally acceptable reliability (Cronbach's alpha < 0.70), while the Cronbach's alpha for the Internal Causes sub-scale had very good reliability (Cronbach's alpha = 0.84). For the purposes of this study, responses were measured on a five-point Likert scale. Several items were reworded for clarity or omitted to avoid redundancies both within the scale and between scales used in this survey, and several additional items were added to assess the extent to which participants believed that overweight/obese individuals are to blame for their weight status.

To align with the language utilized in the rest of this survey, the term "fat" was substituted for the term "obese." The final scale consisted of 30 items. Scores for each of the three sub-scales were calculated by summing the values for each item in each of the three scales. On the Social Causes sub-scale, higher scores indicated stronger agreement that social causes were to blame for overweight/obesity, while lower scores suggested a belief that social causes were less important in causing obesity. Higher scores on the Internal Causes sub-scale indicated greater agreement that obesity is caused by factors internal to the individual, while lower scores indicated less agreement that obesity is within an individual's control. Higher scores on the Physical Causes sub-scale suggested stronger beliefs that uncontrollable physical or medical factors underlie obesity, with lower scores indicating less agreement that obesity is usually

caused by physical or medical factors. Finally, higher scores on the researcher-added questions indicated stronger agreement that individuals are ultimately to blame for being overweight or obese, while lower scores indicated less agreement that overweight and obese people are to blame for their weight status.

Social Desirability

A shortened form of the Marlowe-Crowne Social Desirability Scale was used to assess the effect of social desirability on the self-report measures used in this investigation. This scale consisted of 13 true/false questions, which had demonstrated acceptable reliability (Cronbach's alpha = 0.76) in previous research (Reynolds, 1982), and had been used to measure negative attitudes toward overweight individuals (Morrison & O'Connor, 1999). A total score for this scale was calculated by reverse-coding inversely-worded items and summing the values for each item, with higher scores on the Social Desirability Scale indicating possible bias due to social desirability, and lower scores indicating more honest responses.

Support for Hypothetical Legislation Preventing Discrimination in Employment Settings

The measure used to assess participants' support for hypothetical legislation that would provide protection against weight-based discrimination in employment settings was originally published by Puhl and Heuer (2010). This measure presents participants with several types of laws that could be considered to provide legal protection to overweight and obese people, such as protection under the Americans with Disabilities Act (ADA), protection under civil rights law, or protection under a separate law modeled after the Age Discrimination in Employment Act, and asks participants to indicate on a five-point Likert scale to what extent they agree that these measures should be enacted. No reliability or validity information was provided by the authors of the original study. A total score for this scale was calculated by summing the values for each

item, with higher scores indicating more support for enacting legislation to protect people on the basis of weight status, and lower scores indicating less support for these measures. Total score on this scale (hereafter referred to as the Discrimination in Employment Settings Scale) was treated as one of two outcome measures used in this study.

Discrimination in Hypothetical Scenarios

The final scale used in this study asked participants to rate on a five-point Likert scale their level of agreement with statements about where and when weight-based discrimination should be allowable. The nine items in this scale were developed by the researcher, and were in most cases drawn from real-life scenarios (i.e. restaurants charging fat people more than normal-weight people to eat at a fixed-price "all you can eat" buffet (Tracey, 2008) and nail salons charging fat customers more than thin customers (Post, 2010)). A total score for this scale was calculated by reverse-coding negatively worded items and summing the values for each item, with higher scores indicating less acceptance of discriminatory practices in various scenarios, and lower scores indicating more acceptance of discrimination in these situations. Total score on this scale (hereafter referred to as the Discrimination in Other Scenarios Scale) was used as the second outcome measure used in this study.

Open-Ended Response

At the end of the survey, participants had the opportunity to share additional thoughts or comments, or to elaborate on any of the subject matter covered by the survey. Relevant themes from these responses were identified, and quotations that exemplified each theme were extracted to be presented in the Results section.

Data Analysis and Statistical Methods

Data analyses were conducted using the SPSS statistical software (version 18.0, SPSS Inc., Chicago, IL). We first explored the proportion and distribution of demographic variables. Mean scores were computed for the total Fat Phobia Scale as well as its six factors identified by Robinson, Bacon, and O'Reilly (1993) (Undisciplined/Inactive/Unappealing; Grouchy/Unfriendly; Poor Hygiene; Passivity; Emotional/Psychological Problems; Stupid/Uncreative), each of the three sub-scales of the Causes of Obesity Scale (Social, Internal, and Physical Causes), the Social Desirability Scale, the Discrimination in Employment Settings Scale, and the researcher-developed Discrimination in Other Scenarios Scale. Associations between demographic variables – age, sex, race, environment in which the participant grew up, political affiliation, personal history with overweight/obesity, family history with overweight/obesity, BMI (calculated using participants' self-reported height and weight), and BMI categorization based on the BMI cutoff levels delineated in the World Health Organization's "International Classification of Adult Underweight, Overweight, and Obesity"[2] – and mean scores on each of the scales and sub-scales was explored using one-way ANOVA tests and Pearson correlation coefficients. The results of these univariate tests between demographic variables and scale/sub-scale scores can be found in compiled format in Table 10. Reliability coefficients (Cronbach's alpha) were computed for each of the scales and sub-scales (where appropriate) used in this study.

We then explored the proportion and distribution of scores on each of the scales (and/or sub-scales) used in the survey. Proportions were also used to explore participants' responses on each individual item on the Fat Phobia Scale, the Discrimination in Employment Scale, and the Discrimination in Other Scenarios Scale. The relationship between total score on the Fat Phobia

[2] According to this classification, underweight is defined as a BMI of less than 18.50 kg/m^2, normal range is a BMI between 18.50 - 24.99 kg/m^2, overweight is a BMI greater than or equal to 25.00 kg/m^2, and obese is a BMI greater than or equal to 30.00 kg/m^2.

Scale and total score on each of the Causes of Obesity sub-scales was explored using Pearson correlation coefficients. Additionally, one sample t-tests were used to determine whether total mean score on the Fat Phobia Scale and the Discrimination in Other Scenarios Scale differed significantly from a 'null' score (the score that participants would have received if they had selected the neutral response, 3, for every item in each scale). Finally, the effect of social desirability on individual scale scores was investigated by assessing the association between Social Desirability Scale score and total score on each of the other scales and sub-scales used in the study.

We next assessed univariate relationships between hypothesized independent variables (including sociodemographic variables, total Fat Phobia Scale score, Causes of Obesity sub-scale scores, and Social Desirability Scale score) and each of the two outcome measures (Discrimination in Employment Scale score and Discrimination in Other Scenarios Scale score). Independent variables that were found to be significant at $p \leq 0.20$ in univariate analyses were investigated in multivariable linear regression, however, only covariates that were significant at $p < 0.05$ were included in the final regression models.

Levene's test was used to confirm the assumption of equal variances in all one-sample t-tests and one-way ANOVA tests. The distribution of all continuous variables was assessed using histograms, normal probability plots, and the skewness statistic. The two multi-level independent variables used in these analyses, race and political affiliation, were dummy-coded, using "White/non-Hispanic" and "Conservative," respectively, as the reference categories. Correlation analysis between independent variables revealed no evidence of multicollinearity in the multi-variable models (all Pearson correlation coefficients were found to be less than 0.40). For all statistical tests, a listwise exclusion of missing data was utilized.

CHAPTER 4: RESULTS

A link to the electronic survey was sent to 1,051 students on the Rollins School of Public Health all-student listserv. A total of 333 individuals agreed to participate in the study by completing the consent form electronically. Of these, 309 met the eligibility criteria and completed the survey, for an overall response rate of 29.4%. Of the 24 individuals who did not meet eligibility criteria, all (100%) were either not currently enrolled at the Rollins School of Public Health (n=8, 33.3%) or failed to specify whether or not they were currently enrolled (n=16, 66.7%).

Descriptive statistics for the participant sample can be viewed in Table 1. Participants ranged in age from 22 to 56 years old. The mean age of participants was 26.78 years (sd=5.33). The majority of participants were women (n=224, 83.0%), and most identified as being White (non-Hispanic) (n=178, 65.9%), Asian/Pacific Islander (n=46, 17.0%), or Black/African American (n=25, 9.3%). Most participants reported having spent most of their childhood in mid-sized (n=89, 32.8%) or small (n=75, 27.7%) cities, though a sizeable proportion grew up in large metropolitan areas (n=69, 25.5%) or rural areas (n=38, 14.0%). Most participants reported a liberal (n=173, 64.8%) or moderate (n=49, 18.4%) political affiliation. Approximately half of the participant sample had a family history of overweight and/or obesity (n=131, 48.2%), while 93 participants (34.3%) had a personal experience with being overweight and/or obese. Using self-reported measures of weight and height, body mass index (BMI) was calculated for each participant. Participant BMI scores ranged from 12.71 to 35.67, with an average of 22.99 (sd=3.78). Using the BMI cutoff levels outlined in the World Health Organization's International Classification of Adult Underweight, Overweight, and Obesity, approximately 181 participants

(67.8%) could be classified as having a normal BMI, while 65 participants (24.3%) could be categorized as overweight or obese.

Table 1: Descriptive Statistics for Participant Sample	
Variable	**N (%) or Mean (sd)**
Age	26.78 (5.33)
Sex	
Female	224 (83.0)
Male	46 (14.9)
Race	
White, Non-Hispanic	178 (65.9)
Asian/Pacific Islander	46 (17.0)
Black/African-American	25 (9.3)
Multiracial	8 (3.0)
Hispanic/Latino	7 (2.6)
Other	5 (1.9)
Environment in which participant spent most of childhood	
Mid-sized city	89 (32.8)
Small city	75 (27.7)
Large metropolitan area	69 (25.5)
Rural area	38 (14.0)
Political Affiliation	
Liberal	173 (64.8)
Moderate	49 (18.4)
Independent	20 (7.5)
Conservative	16 (6.0)
Other	9 (2.9)
Family history of overweight/obesity	
No	141 (51.8)
Yes	131 (48.2)
Personal experience with overweight/obesity	
No	178 (65.7)
Yes	93 (34.3)
Average BMI	22.99 (3.78)
Weight Categorization According to WHO BMI Cutoffs	
Underweight	21 (7.9)
Normal	181 (67.8)
Overweight	52 (19.5)
Obese	13 (4.9)

Fear of Fatness

Scores on the 50-item Fat Phobia Scale ranged from 78 to 198, with an average score of 138.42 (sd=12.86), while the mean score on the 58-item scale (consisting of Robinson's 50-item scale plus eight researcher-added adjectives) was 160.38 (sd=14.86) with a range from 93 to 230. The percentage of participants who scored a 1 or a 2 on the semantic differential scale (indicating agreement) for selected adjectives is detailed in Table 2. A particularly high percentage of participants felt that the obese anchor was unhealthy (86.9%), over-eats (85.7%), is inactive (80.9%), and is unattractive (72.3%). A sizeable proportion of participants also reported that the anchor is self-indulgent (48.8%), is shapeless (48.0), is sweaty (45.7%), has no willpower (43.3%), is depressed (42.2%), is unpopular (41.5%), is lazy (33.9%), is passive (31.1%), is stuck in their ways (29.7%), is nonassertive (28.6%), smells bad (23.7%), is disabled (23.6%), and is pitiful (21.3%).

Table 2: Percentage of Participants Rating a 1 or 2 for Selected Negative Adjectives on the Fat Phobia Scale

Negative Adjective on the Fat Phobia Scale	N (%) Rating 1 or 2
Unhealthy	252 (86.9)
Over-eats	257 (85.7)
Inactive	241 (80.9)
Unattractive	217 (72.3)
Likes food	208 (69.3)
Does not attend to own appearance	184 (63.4)
Slow	189 (63.2)
Low self-esteem	172 (59.5)
Poor self-control	173 (57.7)
Insecure	160 (55.2)
Sloppy	156 (53.8)
Has no endurance	158 (53.4)

A total of 160 participants (67.2%) recorded at least one 4 or 5 for at least one item on the 58-item scale, indicating at least some positive attitudes toward obese people on these items. The

positive attributes with the highest proportion of respondents rating a 4 or 5 described the anchor as relaxed (26.3%), warm (24.5%), and friendly (20.5%).

A one sample t-test was conducted to determine whether the mean Fat Phobia Scale score differed significantly from a 'null' score of 150 (the score that participants would have obtained if they had chosen a '3,' indicating a lack of positive or negative sentiment about the obese anchor, for all of the items in the scale). The mean Fat Phobia Scale score of participants in this sample (mean=138.42, sd=12.86) was significantly lower than the 'null' score of 150 ($t=-13.89$, $df=237$, $p<0.001$), indicating that participants in this sample reported significantly more negative attitudes toward or stereotypes about the obese anchor than a hypothetical group of individuals who selected the middle or 'neutral' value (3) for every item.

The 50-item Fat Phobia Scale was deconstructed into the six subscales identified through factor analysis by Robinson, Bacon, and O'Reilly (1993). These subscales are intended to measure the different concepts of fat phobia; the six concepts include attitudes and stereotypes that overweight and obese people: (1) are undisciplined, inactive, and unappealing; (2) are grouchy and unfriendly; (3) have poor hygiene; (4) are passive; (5) have emotional/psychological problems; and (6) are stupid and uncreative. Mean scores and reliability for each of these factors can be found in Table 3. All subscales demonstrated good-to-excellent reliability, with Cronbach's alpha ranging from 0.79 to 0.91. Mean scores for each of the sub-scales indicate that participants tend to perceive the obese anchor as having more undisciplined, inactive, and unappealing attributes (mean=2.42, sd=0.40) and fewer grouchy and unfriendly attributes (mean=3.17, sd=0.42).

Table 3: Sub-Scale Score and Reliability Information for Fat Phobia Scale		
Sub-Scale	**Mean (sd)**	**Reliability Coefficient**
Undisciplined, Inactive, and Unappealing	2.42 (0.40)	0.84
Grouchy and Unfriendly	3.17 (0.42)	0.91
Poor Hygiene	2.65 (0.40)	0.79
Passivity	2.87 (0.33)	0.82
Emotional/Psychological Problems	2.61 (0.44)	0.79
Stupid and Uncreative	3.01 (0.28)	0.79

Cronbach's alpha analysis was performed to assess the internal consistency reliability of both the overall 50-item Fat Phobia Scale and the 58-item Fat Phobia Scale. Cronbach's alpha of the 50-item scale was 0.91, and 0.93 for the 58-item scale, indicating an excellent level of internal consistency among the items. Means of individual items on the 58-item scale ranged from 1.78 ("unhealthy – healthy") to 3.30 ("uptight – relaxed") with standard deviations ranging from 0.33 to 0.99.

Univariate analyses were conducted to determine whether demographic characteristics were associated with participants' overall score on the 50-item Fat Phobia Scale. No statistically significant differences were observed in mean Fat Phobia score by sex ($F=(1,215)=0.98$, $p=0.325$), race ($F=(5,212)=0.60$, $p=0.704$), environment in which the participant spent most of his/her childhood ($F=(3,214)=0.67$, $p=0.575$), family history of overweight/obesity ($F=(1,217)=0.21$, $p=0.649$), or weight categorization based on BMI ($F=(3,211)=0.51$, $p=0.678$). However, statistically significant differences were observed in mean Fat Phobia score among groups based on political affiliation ($F=(4,211)=5.1$, $p=0.001$) and personal experience with overweight/obesity ($F=(1,217)=4.00$, $p=0.047$). Bonferroni post hoc tests suggest that the mean Fat Phobia score for those with independent political affiliation (mean=147.06, sd=14.70) is significantly higher (indicating less fat phobia) than the mean Fat Phobia score for those with conservative political affiliation (mean=133.64, sd=14.16) ($p=0.018$), moderate political

affiliation (mean=133.29, sd=13.54) ($p<0.001$), and those with liberal political affiliation (mean=138.33, sd=10.69) ($p=0.039$). No mean differences in Fat Phobia score were found between the liberal and moderate groups ($p=0.149$), the moderate and conservative groups ($p=1.000$), or the liberal and conservative groups ($p=1.000$). A statistically significant difference was also observed in mean Fat Phobia score between those with a personal experience of being overweight/obese and those without a personal experience ($F=(1,217)=4.0$, $p=0.047$). The mean Fat Phobia score for those that had a personal experience with overweight/obesity is significantly higher (mean=140.13, sd=9.21) than those without a personal experience (mean=136.63, sd=14.02), indicating that those with a personal experience with overweight/obesity reported fewer negative attitudes and stereotypes about the obese anchor than did those who did not have a personal history with the condition.

Finally, a Pearson correlation coefficient was used to assess the relationship between age and BMI and total 50-item Fat Phobia score. No statistically significant association was found between age ($r=-0.001$, $p=0.986$) or BMI ($r=0.01$, $p=0.847$) and Fat Phobia score. The results of these univariate tests can be found in compiled format in Table 10.

Causes of Obesity

Mean total scores on the sub-scales of the Causes of Obesity Scale were: 20.78 (sd= 2.93, range=11-28) for the Social Causes sub-scale, 47.10 (sd=6.08, range=30-64) for the Internal Causes sub-scale, and 11.97 (sd=2.50, range=5-20) for the Physical Causes sub-scale. Table 4 summarizes the average score within each sub-scale and reliability information for these sub-scales. As was found in previous studies (Klaczynski, Goold, & Mudry, 2004), the Social and Physical Causes sub-scales demonstrated marginally acceptable reliability (Cronbach's alpha <

0.70), while the Internal Causes sub-scale had good reliability (Cronbach's alpha = 0.73). Mean scores for each of the sub-scales indicates that participants tended more strongly to agree that social causes were to blame for overweight/obesity (mean=4.67, sd=0.49), and were more likely to disagree that physical causes were to blame for overweight/obesity (mean=2.39, sd=0.50). Overall, participants did not seem to strongly agree or disagree that internal causes were to blame for overweight/obesity (mean=3.14, sd=0.41).

Table 4: Sub-Scale Score and Reliability Information for Causes of Obesity Scale

Causes of Obesity Sub-Scale	Mean (sd)	Reliability Coefficient
Social Causes	4.67 (0.49)	0.53
Internal Causes	3.14 (0.41)	0.73
Physical Causes	2.39 (0.50)	0.60

Univariate analyses were used to determine whether demographic characteristics were associated with participant's overall score on each of the Causes of Obesity sub-scales. No significant differences were observed between mean Social Causes sub-scale score by sex ($F=(1,256)=1.03$, $p=0.312$), environment in which the participant spent most of his/her childhood ($F=(3,255)=0.28$, $p=0.844$), political affiliation ($F=(4,250)=1.05$, $p=0.380$), personal experience with overweight/obesity ($F=(1,257)=0.81$, $p=0.368$), family history with overweight/obesity ($F=(1,258)=0.49$, $p=0.486$), or weight categorization based on BMI ($F=(3,251)=1.64$, $p=0.181$). However, statistically significant differences were observed in mean Social Causes sub-scale score based on race ($F=(5,252)=3.37$, $p=0.006$). Bonferroni post hoc tests indicated that the mean Social Causes sub-scale score for White/non-Hispanic participants (mean=20.98, sd=2.89) is significantly higher (indicating greater agreement that obesity is caused by social factors) than the mean Social Causes sub-scale score for Black participants (mean=18.61, sd=3.23) ($p=0.004$), and that the mean Social Causes sub-scale score for multiracial individuals (mean=22.50, sd=2.00) is significantly higher than the mean score for Black participants ($p=0.019$). No

statistically significant differences in mean Social Causes sub-scale score were found between other racial groups. Pearson correlation coefficients revealed no statistically significant relationship between age (r=-0.01, p=0.872) or BMI (r=-0.08, p=0.186) and score on the Social Causes sub-scale.

For the Internal Causes sub-scale, no significant differences were observed between mean sub-scale score by sex (F=(1,233)=1.37, p=0.244), race (F=(5,228)=2.05, p=0.072), environment in which the participant spent most of his/her childhood (F=(3,232)=0.61, p=0.612), personal experience with overweight/obesity (F=(1,234)=2.74, p=0.099), or family history with overweight/obesity (F=(1,235)=1.69, p=0.194). A statistically significant difference was observed in mean Internal Causes sub-scale score by political affiliation (F=(4,227)=4.44, p=0.002), and weight categorization based on BMI (F=(3,229)=3.61, p=0.014). Bonferroni post hoc tests indicated that the mean Internal Causes sub-scale score for conservative participants (mean=51.93, sd=7.20) is significantly higher (indicating greater agreement that obesity is caused by factors internal to the individual) than the mean Internal Causes sub-scale score for liberal participants (mean=45.99, sd=5.87) (p=0.005). No statistically significant differences in mean Internal Causes sub-scale score were found between other political affiliations. Bonferroni post hoc tests also revealed that the mean Internal Causes sub-scale score for participants categorized as being obese (mean=41.80, sd=8.65) is significantly lower (indicating less agreement that obesity is caused by factors internal to the individual) than participants categorized as overweight (mean=48.22, sd=5.65) (p=0.017) or underweight (mean=48.94, sd=4.98) (p=0.018). The mean Internal Causes sub-scale score for obese participants was also lower than participants categorized as normal weight (mean=47.02, sd=6.04), with a p-value approaching significance (p=0.050). Pearson correlation coefficients revealed a statistically

significant negative relationship between BMI and Internal Causes sub-scale score (r=-0.13, p=0.044), but no significant relationship between age (r=0.02, p=0.822) and Internal Causes sub-scale score.

No significant differences were observed between mean Physical Causes sub-scale score by sex (F=(1,258)=0.002, p=0.961), environment in which the participant spent most of his/her childhood (F=(3,257)=2.23, p=0.085), political affiliation (F=(4,252)=0.71, p=0.589), personal experience with overweight/obesity (F=(1,259)=1.30, p=0.256), family history with overweight/obesity (F=(1,260)=0.42, p=0.518), or weight categorization based on BMI (F=(3,253)=2.675, p=0.050). A statistically significant difference was observed between mean Physical Causes sub-scale score by race (F=(5,254)=3.71, p=0.003). Bonferroni post hoc tests indicate that mean Physical Causes sub-scale score for White/non-Hispanic participants (mean=11.71, sd=2.38) is significantly lower (indicating less agreement that physical/medical factors underlie obesity) than that of Asian/Pacific Islander participants (mean=13.23, sd=2.21) (p=0.004). No statistically significant difference in mean Physical Causes sub-scale score were found between other racial groups. Pearson correlation coefficients revealed no statistically significant relationships between age (r=0.03, p=0.685) or BMI (r=0.04, p=0.489) and Physical Causes sub-scale score. The results of these univariate tests can be found in compiled format in Table 10.

Two questions intended to assess the extent to which participants believed that overweight/obese people are to blame for their weight status were added to the Causes of Obesity scale. The results of these questions can be found in Table 5. These results indicate that a greater proportion of respondents disagreed or strongly disagreed (71.2%) than agreed or strongly agreed (10.5%) with the statement that “there is no excuse for being fat,” and that a

greater percentage of participants (37.9%) disagreed or strongly disagreed that fat people are ultimately to blame for their weight than agreed or strongly agreed (25.6%).

Table 5: Percentage of Participants Who Agree or Strongly Agree With Researcher-Added Questions Related to Causes of Obesity

Researcher-Added Question	Mean (sd)	Percentage Agreement (Agree or Strongly Agree)
There's no excuse for being fat.	2.20 (0.93)	10.5
Ultimately, fat people are to blame for their weight.	2.80 (0.96)	25.6

Finally, Pearson correlation coefficients were used to assess the relationship between total score on the Causes of Obesity sub-scales, total 50-item Fat Phobia Scale score, and Fat Phobia sub-scale scores. Table 6 shows the correlation coefficients and p-values for these relationships. These analyses reveal that the Social and Physical Causes sub-scales of the Causes of Obesity scale show a statistically significant negative relationship with the total Fat Phobia scale score ($p<0.001$). However, no significant relationship was found between the Physical Causes sub-scale and total Fat Phobia Scale score ($r=0.03$, $p=0.678$) or between the Physical Causes sub-scale and any Fat Phobia sub-scale score. The Social Causes and Internal Causes sub-scales were statistically significantly related to at least two of the Fat Phobia sub-scales, but no significant relationships were found between any of the Causes of Obesity sub-scales and the passivity sub-scale or the stupid/uncreative sub-scale of the Fat Phobia Scale.

Table 6: Correlation Between Causes of Obesity Sub-Scales and Fat Phobia Scale and Sub-Scale Scores *(Correlation Coefficient, p-value)*

Causes of Obesity Sub-Scale	Total Fat Phobia (50-item) Scale	FP Undisciplined / Inactive/ Unappealing Sub-Scale	FP Grouchy/ Unfriendly Sub-Scale	FP Poor Hygiene Sub-Scale	FP Passivity Sub-Scale	FP Emotional/ Psychological Problems Sub-Scale	FP Stupid/ Uncreative Sub-Scale
Social Causes	-0.23 (<0.001)	-0.29 (<0.001)	-0.046 (0.453)	-0.19 (0.002)	-0.07 (0.260)	-0.24 (<0.001)	-0.08 (0.196)
Internal Causes	-0.27 (<0.001)	-0.40 (<0.001)	-0.13 (0.048)	-0.24 (<0.001)	-0.11 (0.091)	-0.16 (0.011)	-0.06 (0.383)
Physical Causes	0.03 (0.678)	0.11 (0.090)	-0.07 (0.257)	-0.01 (0.935)	0.01 (0.831)	0.11 (0.07)	-0.01 (0.968)

Support for Hypothetical Legislation Preventing Discrimination in Employment Settings

The mean total score on the Discrimination in Employment Settings scale was 26.26 (sd=6.06), with scores ranging from 8 to 40. Table 7 shows the percentage of participants who agree or strongly agree with each statement in the scale; overall, a greater proportion of participants agreed or strongly agreed that firing, refusing to hire, or denying an individual a job on the basis of weight status should be illegal, though participants did not appear to be overwhelmingly in favor of passing any of the suggested legislation (protection under the ADA, civil rights law, or the Weight Discrimination in Employment Act) in order to ensure that overweight and obese people were legally protected. The scale demonstrated good reliability (Cronbach's alpha = 0.89).

Table 7: Percentage of Participants Who Agree or Strongly Agree With Proposed Antidiscrimination Laws

Proposed Antidiscrimination Law	Percentage Agreement (Agree or Strongly Agree)
Obesity should be considered a disability under the ADA so that obese people will be protected from discrimination in the workplace.	n=58, 21.2%
The government should play a more active role in protecting fat people from discrimination.	n=108, 39.6%
Fat people should be subject to the same protections and benefits offered to people with physical disabilities.	n=41, 15.0%
My state should also include weight in their civil rights law in order to protect people from discrimination based on their body weight.	n=118, 43.2%
Congress should pass the WDEA to protect overweight Americans from discrimination in the workplace.	n=135, 50.0%
It should be illegal (unlawful) for an employer to refuse to hire a qualified person because of his/her body weight.	n=197, 72.7%
It should be illegal (unlawful) for an employer to fire a qualified employee because of his/her body weight.	n=222, 81.9%
It should be illegal (unlawful) for an employer to deny a promotion or appropriate compensation to a qualified employee because of his/her body weight.	n=228, 83.8%

Univariate analyses suggested that a statistically significant difference in mean Discrimination in Employment Settings score among groups based on sex ($F=(1,250)=8.91$, $p=0.003$), with a higher mean score (indicating more support for the proposed legislation) among female participants (mean=26.82, sd=5.90) than among male participants (mean=23.86, sd=5.99), and based on political affiliation ($F=(4,244)=6.19$, $p<0.001$), with a significantly higher mean score among liberal participants (mean=27.53, sd=5.29) than among moderate participants (mean=24.32, sd=6.17) ($p=0.011$) and among conservative participants (mean=22.07, sd=5.73) ($p=0.005$). No statistically significant differences were found among groups based on race ($F=(6,245)=1.79$, $p=0.101$), environment in which the participant spent most of his/her childhood ($F=(3,249)=0.33$, $p=0.803$), personal experience with being overweight/obese ($F=(1,251)=3.22$, $p=0.074$), family history of overweight/obesity ($F=(1,252)=0.10$, $p=0.754$), or weight classification based on BMI ($F=(3,245)=1.10$, $p=0.351$). Pearson correlation coefficients did not reveal statistically significant associations between total score on the Discrimination in Employment Settings scale and age ($r=-0.06$, $p=0.358$) or BMI ($r=0.05$, $p=0.424$). The results of these univariate tests can be found in compiled format in Table 10.

Discrimination in Hypothetical Scenarios

Total scores on the Discrimination in Other Scenarios scale ranged from a minimum of 17 to a maximum of 45, with a mean of 36.11 (sd=4.64). Cronbach's alpha analysis found that the scale had adequate internal consistency (Cronbach's alpha = 0.66). Mean scores for the individual items on the scale can be found in Table 8; in particular, participants strongly agreed that a student applying to college should not be denied admission on the basis of his or her

weight status (mean=4.20, sd=1.32), and strongly disagreed that banks should be able to deny someone a loan on the basis of his or her weight status (mean=1.36, sd=0.68).

Table 8: Mean Scores for Individual Items in the Discrimination in Other Scenarios Scale	
Survey Item	**Mean Score (sd)**
It should be illegal for a health insurance company to charge a fat person more for coverage than a normal-weight person.	2.83 (1.18)
I believe that private businesses, like department stores, should be allowed to refuse service to someone because s/he is fat.	1.58 (0.85)
TV stations should not be allowed to refuse to hire an anchor because s/he is fat.	3.38 (1.22)
I think it should be fine for a nail salon to charge a customer extra if s/he is fat.	1.63 (0.90)
Banks should have the right to deny fat people a loan on the basis of their weight alone.	1.36 (0.68)
A student applying to college should never be denied admission because s/he is fat.	4.20 (1.32)
It should be ok for an airline to refuse to hire a fat flight attendant.	2.74 (1.13)
A restaurant should be allowed to charge fat people more than normal-weight people to eat at a fixed-price "all-you-can-eat buffet."	1.63 (0.85)
A landlord or leasing company should have the right to refuse to rent an apartment to a fat person simply because s/he is fat.	1.40 (0.69)

Table 9 (below) shows the percent of respondents who agreed and disagreed with each item on the Discrimination in Other Scenarios Scale. A review of this table indicates that the majority of students surveyed disagreed with discriminatory practices in each of the scenarios, with the exception of the item related to health insurance companies charging an obese person more for coverage than a normal-weight person. These results further reveal a smaller dichotomy between percentage agreement and percentage disagreement on the items related to discrimination in the two employment scenarios (hiring a TV anchor and hiring a flight attendant) in which appearance or physicality may be an important component of the job, as compared to the larger difference between percentage agreement and percentage disagreement on other items in the scale.

Table 9: Agreement/Disagreement with Individual Items in the Discrimination in Other Scenarios Scale		
Survey Item	**Percentage Agreement (Agree or Strongly Agree)**	**Percentage Disagreement (Disagree or Strongly Disagree)**
It should be illegal for a health insurance company to charge a fat person more for coverage than a normal-weight person.	n=87, 32.0%	n=124, 45.6%
I believe that private businesses, like department stores, should be allowed to refuse service to someone because s/he is fat.	n=13, 4.8%	n=247, 91.1%
TV stations should not be allowed to refuse to hire an anchor because s/he is fat.	n=148, 54.8%	n=72, 26.7%
I think it should be fine for a nail salon to charge a customer extra if s/he is fat.	n=15, 5.6%	n=239, 88.8%
Banks should have the right to deny fat people a loan on the basis of their weight alone.	n=4, 1.5%	n=258, 95.6%
A student applying to college should never be denied admission because s/he is fat.	n=224, 82.4%	n=40, 14.7%
It should be ok for an airline to refuse to hire a fat flight attendant.	n=83, 30.5%	n=115, 42.3%
A restaurant should be allowed to charge fat people more than normal-weight people to eat at a fixed-price "all-you-can-eat buffet."	n=11, 4.1%	n=246, 90.8%
A landlord or leasing company should have the right to refuse to rent an apartment to a fat person simply because s/he is fat.	n=6, 2.2%	n=256, 94.1%

A one sample t-test was conducted to determine whether the mean Discrimination in Other Scenarios Scale score differed significantly from a 'null' score of 27 (the score that participants would have obtained if they had chosen a '3,' indicating ambivalent feelings about discrimination in these nine scenarios, for all of the items in the scale). The mean Discrimination in Other Scenarios Scale score of participants in this sample (mean=36.11, sd=4.64) was significantly higher than the 'null' score of 27 ($t=31.86$, $df=262$, $p<0.001$), indicating that

participants in this sample reported significantly more agreement that discrimination in the scenarios presented in this scale should not be permitted, as compared to a hypothetical group of individuals who selected the middle or 'neutral' value (3) for every item.

Univariate analyses suggested that a statistically significant difference in mean Discrimination in Other Scenarios score among groups based on sex ($F=(1,258)=22.13$, $p<0.001$), with a higher mean score (indicating less support for discriminatory practices in various scenarios) among female participants (mean=36.67, sd=4.46) than among male participants (mean=33.16, sd=4.54). No statistically significant differences were found among groups based on race ($F=(6,253)=2.08$, $p=0.056$), environment in which the participant spent most of his/her childhood ($F=(3,257)=0.54$, $p=0.658$), political affiliation ($F=(4,252)=2.36$, $p=0.054$), personal experience with being overweight/obese ($F=(1,259)=3.72$, $p=0.055$), family history of overweight/obesity ($F=(1,260)=0.53$, $p=0.466$), or weight classification based on BMI ($F=(3,253)=1.73$, $p=0.162$). Pearson correlation coefficients did not reveal statistically significant associations between total score on the Discrimination in Other Scenarios scale and age ($r=-0.10$, $p=0.115$) or BMI ($r=0.02$, $p=0.798$). The results of these univariate tests can be found in compiled format in Table 10, below.

Table 10: Significant Univariate Relationships Between Demographic Variables and Each Scale/Sub-Scale Scores

Scale / Sub-Scale	Demographic Variable(s) Showing Significant Univariate Relationships with the Scale / Sub-Scale
Fat Phobia Scale	Political affiliation, personal experience with overweight/obesity
Causes of Obesity Sub-Scale	
Social Causes	Race
Internal Causes	Political affiliation, BMI, weight categorization based on BMI
Physical Causes	Race
Discrimination in Employment Scale	Sex, political affiliation
Discrimination in Other Scenarios Scale	Sex

Social Desirability

The mean score on the shortened form of the Marlowe-Crowne Social Desirability Scale was 7.97 (sd=2.84). The scale demonstrated adequate reliability (Cronbach's alpha = 0.66), which is similar to the reliability for this scale that was found in a previous study measuring attitudes toward overweight individuals (Morrison & O'Connor, 1999). Pearson correlation coefficients reveal no significant associations between total score on the Social Desirability Scale and total score on the Fat Phobia Scale or any of its sub-scales. A statistically significant positive association was found between total score on the Social Desirability Scale and score on the Social Causes sub-scale of the Causes of Obesity Scale (r=0.18, p=0.003), but no other statistically significant associations were found between Social Desirability Scale score and Causes of Obesity sub-scale scores, nor between the Social Desirability Scale and total score on the Discrimination in Employment Settings scale (r=-0.03, p=0.674) or total score on the Discrimination in Other Scenarios scale (r=0.02, p=0.804). Thus, with the exception of the Social Causes sub-scale of the Causes of Obesity Scale, participants' responses on these scales did not appear to be influenced by social desirability bias.

Regression Analysis

Bivariate analyses were conducted to determine which variables should be included in multivariable linear regression models, using either discrimination in employment settings or discrimination in other scenarios as the dependent variable. The results of these tests can be viewed in Table 11. Predictors with p-values of less than 0.2 in bivariate tests were considered for inclusion in the regression model.

Table 11: Bivariate Associations Between Hypothesized Independent Variables and Discrimination in Employment and Other Settings *(Correlation Coefficient, p-value) or (F-statistic, p-value)*		
Predictor	**Discrimination in Employment Settings Scale score**	**Discrimination in Other Settings Scale score**
Fat Phobia Scale score	0.19 (0.007)	0.22 (0.001)
Causes of Obesity Sub-Scale scores		
Social Causes	-0.15 (0.016)	-0.08 (0.222)
Internal Causes	-0.41 (<0.001)	-0.33 (<0.001)
Physical Causes	0.06 (0.326)	-0.11 (0.093)
Social Desirability Scale score	-0.03 (0.674)	-0.01 (0.843)
Demographic Characteristics		
Age	-0.06 (0.358)	-0.10 (0.115)
Sex	8.91 (0.003)	22.13 (<0.001)
Race	1.79 (0.101)	2.08 (0.056)
Environment in which participant spent most of childhood	0.33 (0.803)	0.54 (0.658)
Political Affiliation	6.19 (<0.001)	2.36 (0.054)
Personal experience with overweight/obesity	3.22 (0.074)	3.72 (0.055)
Family history of overweight/obesity	0.10 (0.754)	0.53 (0.466)
BMI	0.05 (0.424)	0.02 (0.798)
Weight Categorization According to WHO BMI Cutoffs	1.10 (0.351)	1.73 (0.162)

To model discrimination in employment settings, the following variables were considered for inclusion in the model: Fat Phobia Scale score, Social Causes sub-scale score, Internal Causes sub-scale score, sex, race, political affiliation, and personal experience with overweight/obesity. A stepwise linear regression was performed using sex, Fat Phobia Scale score, and Internal Causes sub-scale score to predict beliefs about discrimination in employment settings. The overall model was significant ($F=(3,161)=18.90$, $p<0.001$) and all three predictors were significant in predicting score on the Discrimination in Employment Settings scale. Sex was a significant predictor of beliefs about discrimination in employment ($p<0.001$) and accounted for 6.0% of the variance in beliefs about discrimination in employment; men scored

3.87 points lower on the Discrimination in Employment Settings scale than women. Score on the Fat Phobia scale also significantly predicted beliefs about discrimination in employment ($p=0.004$) and accounted for 4.0% of variance; for each point increase in the Fat Phobia score, score on the Discrimination in Employment Settings increased by 0.10 points. Internal Causes sub-scale score was found to significantly predicted discrimination in employment settings as well ($p<0.001$), accounting for 16.0% of the variance. For every one point increase in Internal Causes sub-scale score, score on the Discrimination in Employment settings decreased by 0.31 points. The entire regression model including these three variables accounted for 26.0% of the variance in beliefs about discrimination in employment settings.

For the model of discrimination in other scenarios, the following variables were considered for inclusion: Fat Phobia Scale score, Internal Causes sub-scale score, Physical Causes sub-scale score, age, sex, race, political affiliation, personal experience with overweight/obesity, and weight categorization according to BMI cutoffs. A stepwise linear regression was performed using sex, race, political affiliation, Fat Phobia Scale score, and Internal Causes sub-scale score to predict beliefs about discrimination in other settings. The overall model was significant ($F=(6,167)=15.24$, $p<0.001$) and all predictors were significant in predicting score on the Discrimination in Other Scenarios scale. Sex was a significant predictor of beliefs about discrimination in other scenarios ($p<0.001$) and accounted for 14.3% of the variance; men scored 4.40 points lower on the Discrimination in Other Scenarios scale than women. Race also significantly predicted beliefs about discrimination; multiracial identity was associated with a 4.04 point increase in the Discrimination in Other Scenarios scale score compared with White participants ($p=0.017$), accounting for 2.0% of the variance, and Asian/Pacific Islanders also scored 1.81 points higher as compared to White participants

(p=0.024), which also accounted for 2.0% of the variance in beliefs about discrimination in other scenarios. Political affiliation was found to be significant in predicting beliefs about discrimination in the scenarios presented in this scale (p=0.003), with liberal participants scoring 1.76 points higher than conservative participants. Political affiliation accounted for 4.2% of the variance in the model. Score on the Fat Phobia scale also significantly predicted beliefs about discrimination in other scenarios (p=0.002) and accounted for 4.4% of variance; for each point increase in the Fat Phobia score, score on the Discrimination in Other Scenarios scale increased by 0.07 points. Finally, score on the Internal Causes sub-scale significantly predicted beliefs about discrimination in other scenarios (p=0.001) and accounted for 8.5% of the variance. For every one point increase in Internal Causes sub-scale score, beliefs about discrimination in other scenarios decreased by 0.17 points. The full regression model including all five variables accounted for 35.4% of the variance in beliefs about discrimination in other settings.

Open-Ended Response

Several themes emerged from participants' responses to the final, open-ended question. Many participants wished to clarify that they recognize the "many causes for a person becoming overweight and/or obese," including "depression, stress, living environment, medications, genetic issues," "food prices, built environment, sedentary jobs," "genetics," "emotional overeating caused by stresses in life that could be due to hardships from childhood, financial stress, discrimination because they are ethnic/racial minority," "poor food choices perpetuated by poor parenting," "safety, availability, costs, knowledge, and self-advocacy." Others acknowledged that there may be multiple causes of the condition, but that some people are "just fat because they overeat or are lazy" or "lack the will, time or motivation to get fit."

Regarding the proposed legislation to provide protection to people on the basis of their weight status, several participants expressed concerns that passing such "would disincentive [sic] them to lose weight" or "make it 'ok' to be fat." Many expressed conflicted feelings about wanting to ensure that "fat people should be treated with respect and dignity and equality," particularly those with a medical condition that instigated weight gain, while also avoiding "increasing the social acceptability of obesity," arguing that the issue is a "social" or "moral" one, rather than one to be regulated by law.

A number of participants elaborated on their responses related to discrimination in employment or other scenarios. In particular, many individuals drew a distinction between jobs that "require a certain level of physical fitness" (firefighters and flight attendants were cited as examples by several individuals) and those that do not, expressing that "if their weight directly affected their ability to do the job, then they should be hired/fired accordingly."

Several individuals invoked their own experiences to exemplify either their successes with diet and exercise in losing weight, their frustration with "eat[ing] the same amount of food but gain[ing] more than others," or a belief that the current categorizations based on BMI are insufficient "to decide what 'normal' is."

Finally, many participants expressed discomfort with the terminology used in the survey. One participant wrote: "Every time I read the word 'fat' in a question, I debated leaving the study. Fat is a very negative and very subjective word." Another reported that "the use of the word 'fat' is unpleasant. It sends out negative images." Others wished that the survey had distinguished between "fat (carrying a few extra pounds) and obese (medical term)."

CHAPTER 5: DISCUSSION

Discussion

This study explored beliefs among current public health students about overweight and obese people, and investigated their likelihood of supporting hypothetical legislation that would protect overweight and obese people against weight-based discrimination. Beliefs about specific characteristics as well as possible causes of overweight/obesity were assessed, and the effect of these beliefs on the likelihood of supporting legislation providing protections in employment-based settings and in acceptance of weight-based discrimination in other scenarios were explored through regression analyses. The effect of social and demographic characteristics, including age, sex, race, environment in which the individual spent most of his/her childhood, political affiliation, personal and family histories of overweight/obesity, and body mass index (BMI), were also explored.

Consistent with findings from students and professionals in other health-related fields (Cade & O'Connell, 1991; Chambliss, et al., 2004; Foster, et al., 2003; Hebl & Xu, 2001; Kristeller & Hoerr, 1997; O'Brien, et al., 2007; Poon & Tarrant, 2009; Price, et al., 1987; R. Puhl, et al., 2009; Schwartz, et al., 2003; Wiese, et al., 1992; Wigton & McGaghie, 2001), public health students reported negative beliefs about obese people. In particular, students tended to rate the obese anchor more negatively on characteristics related to self-discipline, activity, and appeal, and more positively on characteristics related to friendliness and interpersonal skills. Without a comparison group, it is difficult to assess to what degree these ratings reflect truly negative attitudes and stereotypes about fat people in general (rather than simply reflecting their beliefs about the obese anchor that was provided), and is also not possible to ascertain whether participants' reported beliefs about an obese anchor would differ from their beliefs about an

underweight- or normal-weight anchor. However the fact that, without any additional information about the obese anchor's health or lifestyle and despite acknowledging that social causes are at least partially to blame, a vast majority of students believed the pictured individual to be unhealthy, to overeat, and to be inactive is telling, and suggests that this sample harbors at least some fat biases. That a relatively high percentage reported at least some positive beliefs about the obese anchor, most often on "relaxed," "warm," and "friendly" items, could be interpreted as truly positive attitudes toward fat people on some dimensions, or instead as a reflection of some of the stereotypes about fat people (i.e. the "jolly fat" character) that have become ubiquitous in the media and popular culture (Ata & Thompson, 2010). These results point to the need to educate public health students about their own stigmas, and to equip them with tools to ensure that common stereotypes do not negatively influence their future research, health education, or policy endeavors. Doing so may involve instruction in how to screen public health messages for misinformation and blaming (MacLean, et al., 2009) or further education in the consequences associated with using weight stigma as a public health tool for reducing overweight and obesity (R. M. Puhl & Heuer, 2010a).

The univariate relationship between Fat Phobia Scale score and personal experience with overweight/obesity, with participants who reported having a personal experience with overweight/obesity also reporting fewer negative attitudes and stereotypes about the obese anchor, suggests that currently or previously overweight/obese public health students may in fact exhibit an in-group bias. This would contradict findings from previous research that indicate that overweight and obese people tend to endorse the same negative attitudes and stereotypes about obese people as do normal-weight individuals (Crandall, 1994; Hebl, et al., 2008; R. M. Puhl, Moss-Racusin, et al., 2008; Wang, et al., 2004). This finding must be interpreted with caution,

however, as the present study did not reveal significant associations between negative beliefs or stereotypes about the obese anchor and participant BMI or weight categorization based on BMI. Future research that explores the presence or absence of in-group weight bias among public health students is necessary, and could inform the design of interventions related to weight stigmatization in this population.

When asked about their beliefs about the causes of obesity, survey respondents more strongly agreed that social causes (family influences, availability of unhealthy foods) were to blame for overweight and obesity while more strongly disagreeing that physical causes (genes, medical conditions) were to blame for the condition. Interestingly, this sample of public health students generally reported neutral beliefs about the relative contribution of internal causes (diet, lifestyle, personal choices) to overweight and obesity. When interpreted in the framework of the attributional theory of motivation, these findings suggest that, according to the participants in this study, causal attributions for obesity seem to include both volitional control and external influences. Disagreement that physical causes are to blame for obesity suggests that the causal attribution lies within personal control, while agreement that social causes may contribute to the condition implies a belief that the cause lies outside an individual's control. Results of the two questions designed to assess assignment of responsibility suggest that respondents do not believe that overweight/obese individuals are solely responsible for or to blame for their condition.

While participants in this study generally agreed that it should be illegal to refuse to hire, fire, or deny a promotion to a qualified candidate based on weight status alone, participants did not appear to overwhelmingly support or favor any of the proposed pieces of hypothetical domestic legislation that would provide obese people with the legal protection they would need to challenge potentially discriminatory actions by employers. As was found in a representative

national sample of 1,001 adults (R. M. Puhl & Heuer, 2010b), participants in this study reported stronger agreement for the enactment of legislation that would prohibit discrimination in the workplace than for a law that would classify obesity as a disability under the Americans with Disabilities Act. Recently, plaintiffs claiming weight-based discrimination under the ADA or under state laws prohibiting discrimination on the basis of disability have faced a narrower interpretation of the meaning of the "regarded as" language of the ADA, requiring that plaintiffs prove that their employers believe they have a substantially limiting impairment (Theran, 2005). Additionally, obese individuals seeking protection under disability legislation often fall into the "disability gap" (Theran, 2005) – having to show that he/she has a disability that limits major life activity while simultaneously establishing that he/she is not so disabled as to be able to fulfill the duties of the job (Johnson & Wilson, 1995) – and in some cases may prefer not to label themselves as disabled (Solovay, 2005). Taken together with the results of this study, these challenges with applying disability law to cases of obesity discrimination suggest that alternative legal protections may be more suitable remedies for weight-related discrimination. While participants in this study were not specifically asked about whether they would support the extension of non-discrimination provisions of human rights law to include weight status, doing so might provide the general legal protections that participants in this study seemed to favor (i.e. prohibiting the ability to refuse to hire, fire, or deny a promotion on the basis of weight status alone), without classifying obesity as a disability.

To our knowledge, no previous research has assessed beliefs about, support of, or agreement with discrimination in real-life scenarios. The results of the Discrimination in Other Scenarios Scale used in this study suggest that participants may feel somewhat ambivalent about discrimination in employment scenarios in which one's personal appearance is salient (i.e. a

television news anchor), or in professions in which one's responsibilities may include an element of physicality (i.e. a flight attendant). More widespread opposition was found to discrimination in scenarios that did not involve employment, such as in college admissions and bank lending. Although this study did not provide examples of or assess likelihood of support for legislation that could protect overweight/obese persons from discrimination outside of employment scenarios, this finding suggests that the students surveyed could be amenable to invoking alternate measures, such as those grounded in human rights law, that would provide broader non-discrimination protection against weight-related discrimination. While these data provide an important baseline for the types of settings in which weight-based discrimination may be perceived to be acceptable or not, more research is necessary to investigate the reasons or justifications for these beliefs in public health students, other health-related students and professionals, and among the general population. It is also important to note that non-discrimination legislation currently only applies to scenarios of employment, education, and housing, as well as to programs receiving public funding, but does not extend to discrimination in business settings or between private actors. It is likely that future legislation addressing weight-based discrimination would apply in the same contexts, which highlights the need for public health education programs that address the less-visible forms of discrimination that cannot be challenged by domestic or international law.

Investigation of the relationship between beliefs about overweight/obese people, causes of obesity, socio-demographic factors, and the outcome measures (support for hypothetical legislation preventing discrimination in employment settings and acceptance of discrimination in other scenarios) revealed that fewer negative attitudes about overweight/obese people, a belief that obesity is caused by factors internal to an individual, and female sex were significant

positive predictors of both outcome measures in this study. These results support the theoretical framework of the attributional model of motivation, in that beliefs about individual controllability and responsibility, in combination with participants' negative beliefs about the obese anchor, were found to predict their (hypothetical) behavioral response (i.e. likelihood of supporting legislation and acceptance of weight-based discrimination). Without a comparison condition with which to contrast the results, it is difficult to know if the theoretical framework would hold true when considering a condition other than overweight/obesity. More research is needed to confirm whether this model would be appropriate to utilize in research focused on other stigmatized conditions (King, Hebl, & Heatherton, 2005), as well as whether determinations of causality and responsibility can truly be disentangled or consecutively ordered, as the theory suggests, in the case of obesity.

The fact that a belief in internal causes, rather than social or physical causes, was found to be the only significant cause-related predictor of the outcomes suggests that education and outreach efforts designed to garner support for policies that combat weight discrimination could consider highlighting the challenges and limitations of individual factors, such as the fact that diets are not always effective (MacLean, et al., 2009) and seemingly controllable factors like physical activity may in fact depend on other, external factors such as neighborhood safety (Feng, Glass, Curriero, Stewart, & Schwartz, 2010), to improve the likelihood of support for these measures. Emphasizing the ongoing uncertainties in our understanding of the degree to which individual, social, and environmental factors contribute to overweight/obesity (Downey, 2005) may also be an effective way to educate public health students and others who hope to decrease beliefs that weight status is strictly under one's individual control (R. M. Puhl, et al., 2005), and gather support for anti-discrimination measures. Similarly, this study suggests that

interventions that explicitly address common biases and stereotypes about obese people, such as the belief that all obese people are lazy and inactive, may be necessary to reduce negative perceptions of overweight/obese people and thereby increase the likelihood that participants would reject all forms of weight-based discrimination and support legislation that would protect people against unfair discrimination on the basis of weight status. Particularly among public health students, who are likely familiar with the need to reduce health disparities among stigmatized groups, reinforcing the underlying social and economic disparities associated with overweight and obesity (Pomeranz, 2008) may also be a useful measure in eliminating weight stigma and increasing support for the type of legislation considered in this study. While the passage of federal legislation and civil rights law prohibiting discrimination on the basis of race, sex, and age cannot guarantee that discrimination on these bases will not occur, passage of such federal civil rights legislation has at least provided individuals with the legal means to challenge instances of discrimination, and may also have contributed to the decreased social acceptability of discrimination on the basis of race, sex, and age (R. M. Puhl, Andreyeva, et al., 2008). Delineating the important protections provided by and advancements made as a result of such civil rights laws may help garner support for weight-based legal protections in the future.

Race and political affiliation were also found to be significant predictors of acceptance of discrimination in other scenarios. While previous studies have suggested that race (Hebl & Heatherton, 1998) and political ideology (Crandall, 1994) may predict attitudes about overweight and obese people, to our knowledge this is the first study to demonstrate that this association extends to beliefs about the acceptability of weight-based discrimination. This finding supports the attributional theory of motivation's implication that personal and cultural values may contribute to discriminatory beliefs (Crandall, et al., 2001), and underscores the need to craft

educational messages and interventions that are tailored to the unique needs and belief systems of individual populations.

Interestingly, no evidence of social desirability bias was found in this study, with the exception of a modest positive correlation between social desirability score and the Social Causes sub-scale of the Causes of Obesity Scale. This is somewhat surprising, given that numerous studies have found that a desire to provide socially-acceptable responses to surveys assessing weight stigma may artificially reduce expressions of prejudice on weight-related measures (J. D. Latner, et al., 2008; Morrison & O'Connor, 1999). This apparent lack of social desirability bias may be a result of multiple comparisons and increased type I error, however, it may also reflect the familiarity of study participants with social desirability scales. A tendency to respond honestly to the social desirability items could have resulted in lower-than-predicted scores and a lack of correlation between social desirability score and other scales in this study. Future studies among populations likely to be able to recognize a social desirability scale could consider employing implicit measures of fat bias such as the Implicit Association Test, which uses reaction time to assess memory-based associations (Teachman, et al., 2003), to explore biases against overweight and obese persons.

Limitations

This study is not without limitations, and the findings must therefore be interpreted with caution. The 309 participants in this study were students at a single school of public health who elected to complete the electronic survey. These individuals may not have been representative of all public health students, and the results may therefore not be generalizable to other public health students, or to students or professionals in other health-related fields. The absence of a

comparison group makes it difficult to determine whether public health students' beliefs about obese people are more or less negative than their attitudes toward underweight or even normal-weight individuals.

The survey used in this study, like other surveys in which weight bias has been investigated in other populations (see, i.e. Crandall, 1994; Davis-Coelho, 2000; O'Brien et al., 2008) utilized the term "fat," which has become an accepted term for heavy individuals in research about weight-related biases and stigma (Wann, 2009), so as to avoid invoking beliefs based on one's knowledge of the medical diagnoses of "overweight or "obese." Responses to the open-ended question at the end of the survey suggested that participants were uncomfortable with this choice of terminology, but whether participants would have reported the same beliefs and opinions if other terms had been used remains unclear. Future researchers will need to carefully consider the terminology to be used in the study, as well as the possible implications of this choice on study findings.

As this study was cross-sectional in nature, it is not possible to ascertain whether a causal link exists between attitudes about overweight/obese people or beliefs about the cause of overweight/obesity and likelihood of supporting legislation to combat discrimination on the basis of weight. The results of this study were based on self-report; while our data suggest that social desirability did not substantially bias the results, there is still a possibility that, due to the sensitive and in some cases personal nature of the study topic, participants reported fewer negative beliefs about or stereotypes about overweight/obese individuals. It is also difficult to ascertain whether students' self-reported beliefs about the obese anchor extend to beliefs about obese people themselves. Future studies that examine implicit beliefs about overweight/obesity among this population may further elucidate unconscious biases that may influence emotional

and behavioral responses, as well as whether explicit beliefs about obese people mirror those they report about a pictorial anchor.

Further research is also necessary to determine whether and to what extent self-reported beliefs and stigmas translate to observable behaviors, as the framework of the attributional theory of motivation suggests. For instance, it is unclear whether an individual who reported a belief that health insurance companies should be allowed to charge overweight/obese person more for coverage than a normal-weight individual would, if placed in the position to make such a decision, actually assess an additional fee for overweight/obese policy holders. Similarly, it is unclear if participants who expressed support for the hypothetical pieces of legislation would actually lobby or vote for the implementation of such laws. Studies that seek to determine the relationship between attitudes (both conscious and sub-conscious) and behavior, particularly among public health students and other practitioners in the healthcare field whose professional decisions may ultimately impact the health of populations as a whole, may help to identify educational measures or interventions that could reduce stigmatizing attitudes and improve support for the enactment of non-discriminatory legislation among these groups.

Conclusion

This study reinforces the importance of attitudes about overweight/obese people and beliefs about the causes of obesity in predicting support for theoretical legislation that would provide legal protection against weight-based discrimination in employment scenarios, and in forecasting acceptance of weight-related discrimination in other scenarios. Future endeavors to reduce anti-fat stigma among public health students will need to address common stereotypes as well as uncertainties about the complex mechanisms beyond one's personal control that may

underlie the condition. Efforts that seek to garner support among public health students for legislation to protect overweight and obese people against weight-based discrimination will need to consider underlying causal and responsibility attributions, as well as socio-demographic variables such as sex, race, and political affiliation that may contribute to one's willingness to support such measures.

REFERENCES

Allison, D. B., Fontaine, K. R., Manson, J. E., Stevens, J., & VanItallie, T. B. (1999). Annual deaths attributable to obesity in the United States. *JAMA, 282*(16), 1530-1538.

Amy, N. K., Aalborg, A., Lyons, P., & Keranen, L. (2006). Barriers to routine gynecological cancer screening for White and African-American obese women. *Int J Obes (Lond), 30*(1), 147-155.

Andreyeva, T., Puhl, R. M., & Brownell, K. D. (2008). Changes in perceived weight discrimination among Americans, 1995-1996 through 2004-2006. *Obesity (Silver Spring), 16*(5), 1129-1134.

Annis, N. M., Cash, T. F., & Hrabosky, J. I. (2004). Body image and psychosocial differences among stable average weight, currently overweight, and formerly overweight women: The role of stigmatizing experiences. *Body Image, 1*(2), 155-167.

Ashmore, J. A., Friedman, K. E., Reichmann, S. K., & Musante, G. J. (2008). Weight-based stigmatization, psychological distress, & binge eating behavior among obese treatment-seeking adults. *Eat Behav, 9*(2), 203-209.

Ata, R. N., & Thompson, J. K. (2010). Weight bias in the media: a review of recent research. *Obes Facts, 3*(1), 41-46.

Baum, C. L., 2nd, & Ford, W. F. (2004). The wage effects of obesity: a longitudinal study. *Health Econ, 13*(9), 885-899.

Bayer, R. (2008). Stigma and the ethics of public health: not can we but should we. *Soc Sci Med, 67*(3), 463-472.

Beach, M. C., Roter, D. L., Wang, N. Y., Duggan, P. S., & Cooper, L. A. (2006). Are physicians' attitudes of respect accurately perceived by patients and associated with more positive communication behaviors? *Patient Educ Couns, 62*(3), 347-354.

Berryman, D. E., Dubale, G. M., Manchester, D. S., & Mittelstaedt, R. (2006). Dietetics students possess negative attitudes toward obesity similar to nondietetics students. *J Am Diet Assoc, 106*(10), 1678-1682.

Bessenoff, G. R., & Sherman, J. W. (2000). Automatic and controlled components of prejudice toward fat people: Evaluation versus stereotype activation. *Social Cognition, 18*(4), 329-353.

Blaine, B., & McElroy, J. (2002). Selling stereotypes: Weight loss infomercials, sexism, and weightism. *Sex Roles, 46*(9-10), 351-357.

Blumberg, P., & Mellis, L. P. (1985). Medical Students' Attitudes toward the Obese and the Morbidly Obese. [Article]. *International Journal of Eating Disorders, 4*(2), 169-175.

Bose, M. (2000). Sati: the event and the ideology. In M. Bose (Ed.), *Faces of the feminine in ancient, medieval, and modern India*. Oxford: Oxford University Press, U.S.A.

Brewis, A. A., Wutich, A., Falletta-Cowden, A., & Rodriguez-Soto, I. (2011). Body norms and fat stigma in global perspective. *Current Anthropology, 52*(2), 269-275.

Brochu, P. M., & Esses, V. M. (2009). Weight prejudice and medical policy: Support for an ambiguously discriminatory policy is influenced by prejudice-colored glasses. *Analyses of Social Issues and Public Policy (ASAP), 9*(1), 117-133.

Brown, H. (2010, March 15, 2010). For Obese People, Prejudice in Plain Sight. *The New York Times*, p. D6.

Burris, S. (2008). Stigma, ethics and policy: a commentary on Bayer's "Stigma and the ethics of public health: Not can we but should we". *Soc Sci Med, 67*(3), 473-475; discussion 476-477.
Cade, J., & O'Connell, S. (1991). Management of weight problems and obesity: knowledge, attitudes and current practice of general practitioners. *Br J Gen Pract, 41*(345), 147-150.
Carr, D., & Friedman, M. A. (2005). Is obesity stigmatizing? Body weight, perceived discrimination, and psychological well-being in the United States. *J Health Soc Behav, 46*(3), 244-259.
Centers for Disease Control and Prevention. (2010). Behavioral Risk Factor Surveillance System. from http://www.cdc.gov/brfss/
Chambliss, H. O., Finley, C. E., & Blair, S. N. (2004). Attitudes toward obese individuals among exercise science students. *Med Sci Sports Exerc, 36*(3), 468-474.
Cossrow, N. H., Jeffery, R. W., & McGuire, M. T. (2001). Understanding weight stigmatization: a focus group study. *J Nutr Educ, 33*(4), 208-214.
Crandall, C. S. (1994). Prejudice against fat people: ideology and self-interest. *J Pers Soc Psychol, 66*(5), 882-894.
Crandall, C. S., D'Anello, S., Sakalli, N., Lazarus, E., Nejtardt, G. W., & Feather, N. T. (2001). An Attribution-Value Model of Prejudice: Anti-Fat Attitudes in Six Nations. *Pers Soc Psychol Bull, 27*(1), 30-37.
Crandall, C. S., & Schiffhauer, K. L. (1998). Anti-fat prejudice: beliefs, values, and American culture. *Obes Res, 6*(6), 458-460.
Crosnoe, R. (2007). Gender, obesity, and education. *Sociology of Education, 80*(3), 241-260.
Curtis, J. P., Selter, J. G., Wang, Y., Rathore, S. S., Jovin, I. S., Jadbabaie, F., et al. (2005). The obesity paradox: body mass index and outcomes in patients with heart failure. *Arch Intern Med, 165*(1), 55-61.
Danielsdottir, S., O'Brien, K. S., & Ciao, A. (2010). Anti-fat prejudice reduction: a review of published studies. *Obes Facts, 3*(1), 47-58.
Davis-Coelho, K., Waltz, J., & Davis-Coelho, B. (2000). Awareness and prevention of bias against fat clients in psychotherapy. *Professional Psychology: Research and Practice, 31*(6), 682-684.
Dejong, W. (1980). The Stigma of Obesity: The Consequences of Naive Assumptions Concerning the Causes of Physical Deviance. [Article]. *Journal of Health & Social Behavior, 21*(1), 75-87.
Downey, M. (2005). Expression of Bias against Obesity in Public Policy and Its Remedies. In K. D. Brownell, R. M. Puhl, M. B. Schwartz & L. Rudd (Eds.), *Weight Bias: Nature, Consequences, and Remedies* (pp. 294-303). New York: The Guilford Press.
Drury, C. A., & Louis, M. (2002). Exploring the association between body weight, stigma of obesity, and health care avoidance. *J Am Acad Nurse Pract, 14*(12), 554-561.
Elliott-Larsen Civil Rights Act of 1976. (1976).
The Fair Employment and Treatment (Northern Ireland) Order 1998(1998).
Falkner, N. H., French, S. A., Jeffery, R. W., Neumark-Sztainer, D., Sherwood, N. E., & Morton, N. (1999). Mistreatment due to weight: prevalence and sources of perceived mistreatment in women and men. *Obes Res, 7*(6), 572-576.
Feng, J., Glass, T. A., Curriero, F. C., Stewart, W. F., & Schwartz, B. S. (2010). The built environment and obesity: a systematic review of the epidemiologic evidence. *Health Place, 16*(2), 175-190.

Flegal, K. M., Carroll, M. D., Ogden, C. L., & Curtin, L. R. (2010). Prevalence and trends in obesity among US adults, 1999-2008. *JAMA, 303*(3), 235-241.
Fontaine, K. R., Faith, M. S., Allison, D. B., & Cheskin, L. J. (1998). Body weight and health care among women in the general population. *Arch Fam Med, 7*(4), 381-384.
Foster, G. D., Wadden, T. A., Makris, A. P., Davidson, D., Sanderson, R. S., Allison, D. B., et al. (2003). Primary care physicians' attitudes about obesity and its treatment. *Obes Res, 11*(10), 1168-1177.
Fouts, G., & Burggraf, K. (1999). Television situation comedies: Female body images and verbal reinforcements. *Sex Roles, 40*(5-6), 473-481.
Fouts, G., & Burggraf, K. (2000). Television situation comedies: Female weight, male negative comments, and audience reactions. *Sex Roles, 42*(9-10), 925-932.
Friedman, K. E., Reichmann, S. K., Costanzo, P. R., Zelli, A., Ashmore, J. A., & Musante, G. J. (2005). Weight stigmatization and ideological beliefs: relation to psychological functioning in obese adults. *Obes Res, 13*(5), 907-916.
Ghose, T. (2010, July 17, 2010). Hospitals beef up equipment for obese. *Milwaukee Journal-Sentinel*.
Giel, K. E., Thiel, A., Teufel, M., Mayer, J., & Zipfel, S. (2010). Weight bias in work settings - a qualitative review. *Obes Facts, 3*(1), 33-40.
Gortmaker, S. L., Must, A., Perrin, J. M., Sobol, A. M., & Dietz, W. H. (1993). Social and economic consequences of overweight in adolescence and young adulthood. *N Engl J Med, 329*(14), 1008-1012.
Green, G. (1995). Attitudes towards people with HIV: are they as stigmatizing as people with HIV perceive them to be? *Soc Sci Med, 41*(4), 557-568.
Greenberg, B. S., Eastin, M., Hofschire, L., Lachlan, K., & Brownell, K. D. (2003). Portrayals of overweight and obese individuals on commercial television. *Am J Public Health, 93*(8), 1342-1348.
Greenleaf, C., & Weiller, K. (2005). Perceptions of youth obesity among physical educators. *Social Psychology of Education, 8*(4), 407-423.
Hansson, L. M., Karnehed, N., Tynelius, P., & Rasmussen, F. (2009). Prejudice against obesity among 10-year-olds: a nationwide population-based study. *Acta Paediatr, 98*(7), 1176-1182.
Hare, S. W., Price, J. H., Flynn, M. G., & King, K. A. (2000). Attitudes and perceptions of fitness professionals regarding obesity. *J Community Health, 25*(1), 5-21.
Harvey, J. (1999). *Civilized Oppression*. Lanham, MD: Bowman & Littlefield.
Hatzenbuehler, M. L., Keyes, K. M., & Hasin, D. S. (2009). Associations between perceived weight discrimination and the prevalence of psychiatric disorders in the general population. *Obesity (Silver Spring), 17*(11), 2033-2039.
Hayden, M. J., Dixon, M. E., Dixon, J. B., Playfair, J., & O'Brien, P. E. (2010). Perceived discrimination and stigmatisation against severely obese women: age and weight loss make a difference. *Obes Facts, 3*(1), 7-14.
Hebl, M. R., & Heatherton, T. F. (1998). The stigma of obesity in women: The difference is black and white. *Personality and Social Psychology Bulletin, 24*(4), 417-426.
Hebl, M. R., King, E. B., & Perkins, A. (2009). Ethnic differences in the stigma of obesity: Identification and engagement with a thin ideal. *Journal of Experimental Social Psychology, 45*(6), 1165-1172.

Hebl, M. R., & Mannix, L. M. (2003). The weight of obesity in evaluating others: a mere proximity effect. *Pers Soc Psychol Bull, 29*(1), 28-38.
Hebl, M. R., Ruggs, E. N., Singletary, S. L., & Beal, D. J. (2008). Perceptions of obesity across the lifespan. *Obesity (Silver Spring), 16 Suppl 2*, S46-52.
Hebl, M. R., & Xu, J. (2001). Weighing the care: physicians' reactions to the size of a patient. *Int J Obes Relat Metab Disord, 25*(8), 1246-1252.
Hilbert, A., Rief, W., & Braehler, E. (2008). Stigmatizing attitudes toward obesity in a representative population-based sample. *Obesity (Silver Spring), 16*(7), 1529-1534.
Hill, A. J., & Williams, J. (1998). Psychological health in a non-clinical sample of obese women. *Int J Obes Relat Metab Disord, 22*(6), 578-583.
Huizinga, M. M., Bleich, S. N., Beach, M. C., Clark, J. M., & Cooper, L. A. (2010). Disparity in Physician Perception of Patients' Adherence to Medications by Obesity Status. *Obesity (Silver Spring)*.
Huizinga, M. M., Cooper, L. A., Bleich, S. N., Clark, J. M., & Beach, M. C. (2009). Physician respect for patients with obesity. *J Gen Intern Med, 24*(11), 1236-1239.
Human Rights Watch. (2007). *Prohibited Identities: State Interference with Religious Freedom*. New York: Human Rights Watch.
Human Rights Watch. (2008). *Targeting blacks: drug law enforcement and race in the United States*. New York: Human Rights Watch.
Human Rights Watch. (2010). *Afraid and forgotten: lawlessness, rape, and impunity in western Côte d'Ivoire*. New York: Human Rights Watch.
International Labor Organization. (1958). Convention Concerning Discrimination in Respect of Employment and Occupation. Retrieved 2011, July 1, from http://www.ilo.org/ilolex/cgi-lex/convde.pl?C111
Johnson, T., & Wilson, M. C. (1995). An Analysis of Weight-Based Discrimination: Obesity as a Disability. *Labor Law Journal, 46*(4), 238-2244.
Kahn, M. W. (2010, August 24, 2010). When Battlefield Humor Backfires. *The New York Times*, p. D5. Retrieved from http://www.nytimes.com/2010/08/24/health/views/24case.html
Kaminsky, J., & Gadaleta, D. (2002). A study of discrimination within the medical community as viewed by obese patients. *Obes Surg, 12*(1), 14-18.
King, E. B., Hebl, M., & Heatherton, T. F. (2005). Theories of Stigma. In K. D. Brownell, R. M. Puhl, M. B. Schwartz & L. Rudd (Eds.), *Weight Bias: Nature, Consequences, and Remedies* (pp. 109-120). New York: The Guilford Press.
Klaczynski, P. A., Goold, K. W., & Mudry, J. J. (2004). Culture, Obesity Stereotypes, Self-Esteem, and the "Thin Ideal": A Social Identity Perspective. *Journal of Youth and Adolescence, 33*(4), 307-317.
Klein, D., Najman, J., Kohrman, A. F., & Munro, C. (1982). Patient characteristics that elicit negative responses from family physicians. *J Fam Pract, 14*(5), 881-888.
Klein, H., & Shiffman, K. S. (2006). Messages about physical attractiveness in animated cartoons. *Body Image, 3*(4), 353-363.
Kopelman, P. G. (2000). Obesity as a medical problem. *Nature, 404*(6778), 635-643.
Kristeller, J. L., & Hoerr, R. A. (1997). Physician attitudes toward managing obesity: Differences among six specialty groups. *Preventive Medicine: An International Journal Devoted to Practice and Theory, 26*(4), 542-549.
Kruk, J. (2007). Physical activity in the prevention of the most frequent chronic diseases: an analysis of the recent evidence. *Asian Pac J Cancer Prev, 8*(3), 325-338.

Latner, J. D., O'Brien, K. S., Durso, L. E., Brinkman, L. A., & MacDonald, T. (2008). Weighing obesity stigma: the relative strength of different forms of bias. *Int J Obes (Lond), 32*(7), 1145-1152.

Latner, J. D., Rosewall, J. K., & Simmonds, M. B. (2007). Childhood obesity stigma: Association with television, videogame, and magazine exposure. *Body Image, 4*(2), 147-155.

Latner, J. D., & Stunkard, A. J. (2003). Getting worse: the stigmatization of obese children. *Obes Res, 11*(3), 452-456.

MacLean, L., Edwards, N., Garrard, M., Sims-Jones, N., Clinton, K., & Ashley, L. (2009). Obesity, stigma and public health planning. *Health Promot Int, 24*(1), 88-93.

Maiese, M. (2003). Human Rights Violations. In G. Burgess & H. Burgess (Eds.), *Beyond Intractability*. Boulder, Colorado: Conflict Research Consortium, University of Colorado.

Major, B., & O'Brien, L. T. (2005). The social psychology of stigma. *Annu Rev Psychol, 56*, 393-421.

Manganello, J., & Blake, N. (2010). A study of quantitative content analysis of health messages in U.S. media from 1985 to 2005. *Health Commun, 25*(5), 387-396.

Maroney, D., & Golub, S. (1992). Nurses' attitudes toward obese persons and certain ethnic groups. *Percept Mot Skills, 75*(2), 387-391.

Maruthur, N. M., Bolen, S. D., Brancati, F. L., & Clark, J. M. (2009). The association of obesity and cervical cancer screening: a systematic review and meta-analysis. *Obesity (Silver Spring), 17*(2), 375-381.

McArthur, L. H., & Ross, J. K. (1997). Attitudes of registered dietitians toward personal overweight and overweight clients. *J Am Diet Assoc, 97*(1), 63-66.

McAuley, P. A., Kokkinos, P. F., Oliveira, R. B., Emerson, B. T., & Myers, J. N. (2010). Obesity paradox and cardiorespiratory fitness in 12,417 male veterans aged 40 to 70 years. *Mayo Clin Proc, 85*(2), 115-121.

McKean, W. (1985). *Equality and Discrimination Under International Law*: Oxford University Press.

Miller, C. T., Rothblum, E. D., Barbour, L., Brand, P. A., & Felicio, D. (1990). Social interactions of obese and nonobese women. *J Pers, 58*(2), 365-380.

Miller, C. T., Rothblum, E. D., Felicio, D., & Brand, P. (2000). Compensating for stigma: Obese and non obese women's reactions to being visible. In C. Stangor (Ed.), *Stereotypes and prejudice: Essential readings.* (pp. 234-249). New York, NY US: Psychology Press.

Mokdad, A. H., Marks, J. S., Stroup, D. F., & Gerberding, J. L. (2004). Actual causes of death in the United States, 2000. *JAMA, 291*(10), 1238-1245.

Morrison, T. G., & O'Connor, W. E. (1999). Psychometric properties of a scale measuring negative attitudes toward overweight individuals. *J Soc Psychol, 139*(4), 436-445.

Muennig, P. (2008). The body politic: the relationship between stigma and obesity-associated disease. *BMC Public Health, 8*, 128.

Myers, A., & Rosen, J. C. (1999). Obesity stigmatization and coping: relation to mental health symptoms, body image, and self-esteem. *Int J Obes Relat Metab Disord, 23*(3), 221-230.

Nelson, A. (2002). Unequal treatment: confronting racial and ethnic disparities in health care. *J Natl Med Assoc, 94*(8), 666-668.

Neumark-Sztainer, D., Story, M., & Harris, T. (1999). Beliefs and attitudes about obesity among teachers and school health care providers working with adolescents. *Journal of Nutrition Education, 31*(1), 3-9.

O'Brien, K. S., Hunter, J. A., & Banks, M. (2007). Implicit anti-fat bias in physical educators: physical attributes, ideology and socialization. *Int J Obes (Lond), 31*(2), 308-314.
O'Brien, K. S., Puhl, R. M., Latner, J. D., Mir, A. S., & Hunter, J. A. (2010). Reducing Anti-Fat Prejudice in Preservice Health Students: A Randomized Trial. *Obesity (Silver Spring)*.
Oberrieder, H., Walker, R., Monroe, D., & Adeyanju, M. (1995). Attitude of dietetics students and registered dietitians toward obesity. *J Am Diet Assoc, 95*(8), 914-916.
Odeku, K., Rembe, S., & Anwo, J. (2009). Female genital mutilation: A human rights perspective. *Journal of Psychology in Africa, 19*(1), 55-62.
Oliver, J. E. (2006). *Fat Politics: The Real Story Behind America's Obesity Epidemic*. New York: Oxford University Press.
Olson, C. L., Schumaker, H. D., & Yawn, B. P. (1994). Overweight women delay medical care. *Arch Fam Med, 3*(10), 888-892.
Orpana, H. M., Berthelot, J. M., Kaplan, M. S., Feeny, D. H., McFarland, B., & Ross, N. A. (2010). BMI and mortality: results from a national longitudinal study of Canadian adults. *Obesity (Silver Spring), 18*(1), 214-218.
Pagán, J. A., & Dávila, A. (1997). Obesity, occupational attainment, and earnings. *Social Science Quarterly, 78*(3), 756-770.
Park, J. H., Schaller, M., & Crandall, C. S. (2007). Pathogen-avoidance mechanisms and the stigmatization of obese people. *Evolution and Human Behavior, 28*(6), 410-414.
Parker-Pope, T. (2011, March 31, 2011). Bias against fatness rises in many nations. *International Herald Tribune*, p. 5.
Persky, S., & Eccleston, C. P. (2011). Impact of genetic causal information on medical students' clinical encounters with an obese virtual patient: health promotion and social stigma. *Ann Behav Med, 41*(3), 363-372.
Pi-Sunyer, F. X. (1991). Health implications of obesity. *Am J Clin Nutr, 53*(6 Suppl), 1595S-1603S.
Pomeranz, J. L. (2008). A historical analysis of public health, the law, and stigmatized social groups: the need for both obesity and weight bias legislation. *Obesity (Silver Spring), 16 Suppl 2*, S93-103.
Poon, M. Y., & Tarrant, M. (2009). Obesity: attitudes of undergraduate student nurses and registered nurses. *J Clin Nurs, 18*(16), 2355-2365.
Post, T. H. (2010). Michelle Fonville Charged Extra By Georgia Nail Salon for Being Overweight. Retrieved December 15, 2010, from http://www.huffingtonpost.com/2010/08/22/georgia-nail-salon-michelle-fonville_n_690542.html
Price, J. H., Desmond, S. M., Krol, R. A., Snyder, F. F., & O'Connell, J. K. (1987). Family practice physicians' beliefs, attitudes, and practices regarding obesity. *Am J Prev Med, 3*(6), 339-345.
Puhl, R., & Brownell, K. D. (2001). Bias, discrimination, and obesity. *Obes Res, 9*(12), 788-805.
Puhl, R., Wharton, C., & Heuer, C. (2009). Weight bias among dietetics students: implications for treatment practices. *J Am Diet Assoc, 109*(3), 438-444.
Puhl, R. M., Andreyeva, T., & Brownell, K. D. (2008). Perceptions of weight discrimination: prevalence and comparison to race and gender discrimination in America. *Int J Obes (Lond), 32*(6), 992-1000.
Puhl, R. M., & Brownell, K. D. (2003). Psychosocial origins of obesity stigma: toward changing a powerful and pervasive bias. *Obes Rev, 4*(4), 213-227.

Puhl, R. M., & Brownell, K. D. (2006). Confronting and coping with weight stigma: an investigation of overweight and obese adults. *Obesity (Silver Spring), 14*(10), 1802-1815.
Puhl, R. M., & Heuer, C. A. (2010a). Obesity stigma: important considerations for public health. *Am J Public Health, 100*(6), 1019-1028.
Puhl, R. M., & Heuer, C. A. (2010b). Public Opinion About Laws to Prohibit Weight Discrimination in the United States. *Obesity (Silver Spring)*.
Puhl, R. M., Heuer, C. A., & Brownell, K. D. (2010). Stigma and social consequences of obesity. In P. G. Kopelman, I. D. Caterson & W. H. Dietz (Eds.), *Clinical obesity in adults and children (3rd ed.).* (pp. 25-40): Wiley-Blackwell.
Puhl, R. M., Moss-Racusin, C. A., & Schwartz, M. B. (2007). Internalization of weight bias: Implications for binge eating and emotional well-being. *Obesity (Silver Spring), 15*(1), 19-23.
Puhl, R. M., Moss-Racusin, C. A., Schwartz, M. B., & Brownell, K. D. (2008). Weight stigmatization and bias reduction: perspectives of overweight and obese adults. *Health Educ Res, 23*(2), 347-358.
Puhl, R. M., Schwartz, M. B., & Brownell, K. D. (2005). Impact of perceived consensus on stereotypes about obese people: a new approach for reducing bias. *Health Psychol, 24*(5), 517-525.
Reynolds, W. M. (1982). Development of reliable and valid short forms of the Marlowe-Crowne Social Desirability Scale. *Journal of Clinical Psychology, 38*(1), 119-125.
Robinson, B. E., Bacon, J. G., & O'Reilly, J. (1993). Fat phobia: measuring, understanding, and changing anti-fat attitudes. *Int J Eat Disord, 14*(4), 467-480.
Rogge, M. M., Greenwald, M., & Golden, A. (2004). Obesity, stigma, and civilized oppression. *ANS Adv Nurs Sci, 27*(4), 301-315.
Rokholm, B., Baker, J. L., & Sorensen, T. I. (2010). The levelling off of the obesity epidemic since the year 1999 - a review of evidence and perspectives. *Obes Rev*.
Rosen, A. B., & Schneider, E. C. (2004). Colorectal cancer screening disparities related to obesity and gender. *J Gen Intern Med, 19*(4), 332-338.
Rush, L. L. (1998). Affective reactions to multiple social stigmas. *The Journal of Social Psychology, 138*(4), 421-430.
Schmalz, D. L. (2010). 'I feel fat': weight-related stigma, body esteem, and BMI as predictors of perceived competence in physical activity. *Obes Facts, 3*(1), 15-21.
Schwartz, M. B., Chambliss, H. O., Brownell, K. D., Blair, S. N., & Billington, C. (2003). Weight bias among health professionals specializing in obesity. *Obes Res, 11*(9), 1033-1039.
Schwartz, M. B., Vartanian, L. R., Nosek, B. A., & Brownell, K. D. (2006). The influence of one's own body weight on implicit and explicit anti-fat bias. *Obesity (Silver Spring), 14*(3), 440-447.
Simon, G. E., Von Korff, M., Saunders, K., Miglioretti, D. L., Crane, P. K., van Belle, G., et al. (2006). Association Between Obesity and Psychiatric Disorders in the US Adult Population. *Archives of General Psychiatry, 63*(7), 824-830.
Solovay, S. (2005). Remedies for Weight-Based Discrimination. In K. D. Brownell, R. M. Puhl, M. B. Schwartz & L. Rudd (Eds.), *Weight bias: Nature, Consequences, and Remedies* (pp. 212-222). New York: The Guilford Press.
Stuber, J., Meyer, I., & Link, B. (2008). Stigma, prejudice, discrimination and health. *Soc Sci Med, 67*(3), 351-357.

Stunkard, A. J., Sorensen, T., & Schulsinger, F. (1983). Use of the Danish Adoption Register for the study of obesity and thinness. *Res Publ Assoc Res Nerv Ment Dis, 60*, 115-120.

Teachman, B. A., & Brownell, K. D. (2001). Implicit anti-fat bias among health professionals: is anyone immune? *Int J Obes Relat Metab Disord, 25*(10), 1525-1531.

Teachman, B. A., Gapinski, K. D., Brownell, K. D., Rawlins, M., & Jeyaram, S. (2003). Demonstrations of implicit anti-fat bias: the impact of providing causal information and evoking empathy. *Health Psychol, 22*(1), 68-78.

Theran, E. E. (2005). Legal Theory on Weight Discrimination. In K. D. Brownell, R. M. Puhl, M. B. Schwartz & L. Rudd (Eds.), *Weight Bias: Nature, Consequences, and Remedies* (pp. 195-211). New York: The Guilford Press.

Thompson, A. A. (2010). Obesity as a disability under the Americans with Disabilities Act. *Duquesne Business Law Journal*.

Tracey, B. (2008). All-you-can-eat buffet bans ample appetites. Retrieved December 15, 2010, from http://www.msnbc.msn.com/id/22487819/

Tunceli, K., Li, K., & Williams, L. K. (2006). Long-term effects of obesity on employment and work limitations among U.S. Adults, 1986 to 1999. *Obesity (Silver Spring), 14*(9), 1637-1646.

UN Educational Scientific and Cultural Organization. (1960). Convention Against Discrimination in Education 1960. Retrieved July 1, 2011, from http://portal.unesco.org/en/ev.php-URL_ID=12949&URL_DO=DO_TOPIC&URL_SECTION=201.html

UN General Assembly. (1948). Universal Declaration of Human Rights. *217 A (III)* Retrieved July 2, 2011, from http://www.un.org/en/documents/udhr/

UN General Assembly. (1965). International Convention on the Elimination of All Forms of Racial Discrimination. *United Nations, Treaty Series, vol. 660, p. 195* Retrieved July 2, 2011, from http://www2.ohchr.org/english/law/cerd.htm

UN General Assembly. (1979). Convention on the Elimination of All Forms of Discrimination Against Women. Retrieved July 2, 2011, from http://www.un.org/womenwatch/daw/cedaw/text/econvention.htm

UN General Assembly. (1990). International Convention on the Protection of the Rights of All Migrant Workers and Members of their Families. Retrieved July 2, 2011, from http://www2.ohchr.org/english/law/cmw.htm

UN General Assembly. (2007). Convention on the Rights of Persons with Disabilities : resolution / adopted by the General Assembly. Retrieved July 2, 2011, from http://www.un.org/disabilities/default.asp?id=61

UNICEF. (2006). *The State of the World's Children*. New York: UNICEF.

United Nations. (1945). Charter of the United Nations. *1 UNTS XVI* Retrieved July 2, 2011, from http://www.un.org/en/documents/charter/index.shtml

United Nations Department of Public Information. (2011). Short History of CEDAW Convention. Retrieved July 2, 2011, from http://www.un.org/womenwatch/daw/cedaw/history.htm

United Nations High Commissioner for Human Rights. (1996). *The protection of human rights in the context of human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS)*. Retrieved from http://www.unhchr.ch/Huridocda/Huridoca.nsf/0/85fed551b910d8df8025668f004ba623?Opendocument.

Wadden, T. A., Anderson, D. A., Foster, G. D., Bennett, A., Steinberg, C., & Sarwer, D. B. (2000). Obese women's perceptions of their physicians' weight management attitudes and practices. *Arch Fam Med, 9*(9), 854-860.

Wang, S. S., Brownell, K. D., & Wadden, T. A. (2004). The influence of the stigma of obesity on overweight individuals. *Int J Obes Relat Metab Disord, 28*(10), 1333-1337.

Wann, M. (2009). Foreword: Fat Studies: An Invitation to Revolution. In E. D. Rothblum & S. Solovay (Eds.), *The Fat Studies Reader* (pp. ix-xxv). New York: New York University Press.

Wee, C. C., McCarthy, E. P., Davis, R. B., & Phillips, R. S. (2000). Screening for cervical and breast cancer: is obesity an unrecognized barrier to preventive care? *Ann Intern Med, 132*(9), 697-704.

Wee, C. C., McCarthy, E. P., Davis, R. B., & Phillips, R. S. (2004). Obesity and breast cancer screening. *J Gen Intern Med, 19*(4), 324-331.

Wee, C. C., & Yanovski, S. Z. (2005). Improving the Health Care System. In K. D. Brownell, R. M. Puhl, M. B. Schwartz & L. Rudd (Eds.), *Weight Bias: Nature, Consequences, and Remedies* (pp. 234-247). New York: The Guilford Press.

Weiler, K., & Helms, L. B. (1993). Responsibilities of nursing education: the lessons of Russell v Salve Regina. *J Prof Nurs, 9*(3), 131-138.

Weiner, B. (1995). *Judgements of Responsibility: A Foundation for a Theory of Social Conduct*. New York: The Guilford Press.

Weiwei, L. (2004). *Equality and Non-Discrimination Under International Human Rights Law*. Oslo: Norwegian Centre for Human Rights, University of Oslo.

Wiese, H. J., Wilson, J. F., Jones, R. A., & Neises, M. (1992). Obesity stigma reduction in medical students. *Int J Obes Relat Metab Disord, 16*(11), 859-868.

Wigton, R. S., & McGaghie, W. C. (2001). The effect of obesity on medical students' approach to patients with abdominal pain. *J Gen Intern Med, 16*(4), 262-265.

APPENDIX A: STUDY APPROVAL LETTER FROM EMORY UNIVERSITY INSTITUTIONAL REVIEW BOARD

EMORY UNIVERSITY
Institutional Review Board

TO: Whitney Brown
Principal Investigator

DATE: December 1, 2010

RE: **Notification of Exempt Approval**
IRB00046651
Medical Students' Beliefs about Overweight and Obesity

This is your notification that your above referenced study has received Exempt approval on: **11/24/2010**.

The research study cited above has been reviewed and it has been determined that it meets the criteria for exemption under 45 CFR 46.101(b)(2) and thus is exempt from further IRB rerview. The IRB will be apprised of this decision at its next meeting.

Documents:
Consent Form Version Date: 11/30/2010
Protocol Version Date: 11/30/2010
Recruitment E-mail Version Date: 11/30/2010

Any reportable events (serious adverse events, breaches of confidentiality, protocol deviation or protocol violations) or issues resulting from this study should be reported immediately to the IRB and to the sponsoring agency (if any). Any amendments (changes to any portion of this research study including but not limited to protocol or informed consent changes) must have IRB approval before being implemented.

All correspondence and inquires concerning this research study must include the IRB ID, the name of the Principal Investigator and the Study Title.

Sincerely,

LaShawn Martin
Research Protocol Analyst
Emory University Institutional Review Board
This letter has been digitally signed

Emory University
1599 Clifton Road, 5th Floor - Atlanta, Georgia 30322
Tel: 404.712.0720 - Fax: 404.727.1358 - Email: irb@emory.edu - Web: http://www.irb.emory.edu/
An equal opportunity, affirmative action university

APPENDIX B: RECRUITMENT EMAIL SENT TO PUBLIC HEALTH STUDENT LISTSERV

Dear Student,

We are requesting your participation in an important online survey about students' beliefs about an important public health issue. Participation is voluntary, and your responses will remain completely anonymous. No personally identifiable information will be collected in the survey; we will only use your responses in conjunction with those of other survey respondents. Your decision to participate will not affect your course credit. The survey should take less than 25 minutes to complete, and you will have the opportunity to enter your e-mail address for a chance to win a $50 gift certificate to Amazon.com.

To participate in this online survey, please click on the link below. Or, you may copy and paste the entire URL link into the address line of your Internet browser (e.g. Internet Explorer, Firefox, etc.).

<URL>

If you have any comments or questions about the survey, please contact the Principal Investigator at wabrown@emory.edu.

Thank you in advance for your participation.

Whitney Brown
MPH Candidate, May 2010
Rollins School of Public Health, Emory University

APPENDIX C: ONLINE, WRITTEN CONSENT FORM

Emory University Rollins School of Public Health
Consent to be a Research Subject

Title: Students' Beliefs about Overweight and Obesity

Research Team: Whitney Brown, MPH Candidate, May 2011
Delia Lang, MPH, PhD, Thesis Chair
Howard Kushner, MA, PhD, Thesis Committee Member

Introduction/Purpose:
You are being asked to volunteer to participate in a research study to gather information about students' beliefs and opinions about overweight and obesity.

Procedures:
You will be asked to answer questions in an online survey. This survey should take you less than 25 minutes to complete. You must be over the age of 18 to participate.

Risks:
There are no foreseeable risks or discomforts associated with this study. However, some of the questions are of a sensitive nature. You can skip any questions you don't want to answer or exit the survey altogether at any time. To ensure your privacy, please choose a private location and a time when you will not be disturbed while completing the survey.

Benefits:
This study may not benefit you directly. The study results may be used to help other students in the future, and your participation ensures that the views of students like you are represented.

Confidentiality:
We have taken a number of steps to protect the confidentiality of your data. We ***will not*** collect any identifying information in the survey, and you are free to discontinue the questionnaire at any time by closing your internet browser. The survey ***will not*** track which internet browser you use or which machine you submit your information from. The survey is administered through a secured and encrypted program, and all collected data will be password protected. If you have any questions about the confidentiality of your data, you may contact any member of the research team. Any thesis or other publication resulting from this study will be written in such a way that no individual participant can be identified.

Certain offices and people other than the researchers may look at your study records. Emory employees overseeing proper study conduct may look at your study records. These offices include the Emory Institutional Review Board and the Emory Office of Research Compliance. Emory will keep any research records we produce private to the extent required by law.

Compensation:

If you wish, you may choose to participate in a lottery for a $50 gift certificate to Amazon.com. If you would like to participate in the lottery, you will be asked to enter an e-mail address. However, this e-mail address will be kept separate from your survey answers and will not be used to identify your study records in any way. Further information about Amazon's e-mail gift cards can be found here.

Voluntary Participation and Withdrawal:
Your participation in this study is completely voluntary, and you have the right to withdraw from the study at any point without penalty. You may withdraw from the study by simply closing your internet browser. This decision will not impact your class standing, course grade, or graduation status. Your data will not be saved. You also have the right to contact the research team for more information before choosing to participate.

If you have questions about the study, please contact:
Whitney Brown
MPH Candidate, Department of Behavioral Sciences and Health Education
Rollins School of Public Health, Emory University
Email: wabrown@emory.edu

Delia Lang
Assistant Research Professor, Department of Behavioral Sciences and Health Education
Rollins School of Public Health, Emory University
Email: dlang2@emory.edu

For questions regarding your rights as a research study participant, please contact the Emory University Institutional Review Board at (404) 712-0720, (877) 503-9797, or at irb@emory.edu.

If you would like to enter the raffle to win a $50 gift card to Amazon.com, please enter your e-mail address below. Your e-mail address will be stored separately from your survey data and will not be used to identify your answers in any way. Furthermore, your email address will be kept in a secure, password protected file and will only be used for the purposes of this raffle.

__No, I would prefer not to enter the lottery.
__Yes, I would like to enter the lottery. My email address is: _____

Agreement:
By clicking on the "Yes, I agree to participate" link below, you agree that you are 18 years of age or older and you agree to participate in the research study described above. If you do not click on this link, you will not be able to participate. If you do not wish to participate at this time, please click "No, I do not wish to participate at this time" below or close your browser window.

If you would like a copy of this agreement for your records, please click the "Print" button at the top of your browser. If this page fails to print, please e-mail wabrown@emory.edu and a PDF copy of this form will be provided to you.

__YES, I AGREE TO PARTICIPATE

Take me to final eligibility screening

__No, I do not wish to participate at this time.

Thank you for your interest in this study. If you would like to participate at a later date, please save the e-mail containing the link to this survey. Please close your browser window at this time.

APPENDIX D: SURVEY

If you would like to enter the raffle to win a $50 gift card to Amazon.com, please enter your e-mail address below. Your e-mail address will be stored separately from your survey data and will not be used to identify your answers in any way. Furthermore, your e-mail address will be kept in a secure, password protected file and will only be used for the purposes of this raffle.

__No, I would prefer not to enter the lottery.
__Yes, I would like to enter the lottery. My email address is: _____

Agreement:

By clicking on the "Yes, I agree to participate" link below, you agree that you are 18 years of age or older and you agree to participate in the research study described above. If you do not click on this link, you will not be able to participate. If you do not wish to participate at this time, please click "No, I do not wish to participate at this time" below or close your browser window.

If you would like a copy of this agreement for your records, please click the "Print" button at the top of your browser. If this page fails to print, please e-mail wabrown@emory.edu and a PDF copy of this form will be provided to you.

__YES, I AGREE TO PARTICIPATE. Take me to final eligibility screening.
__No, I do not wish to participate at this time.

In this survey, we will ask you a number of questions related to your beliefs and opinions about an important public health issue. Please answer the questions as honestly as possible; there are no right or wrong answers. Your participation in this study is entirely voluntary, and your responses will be kept completely confidential. You may discontinue participation in this survey at any time without penalty.

Questions about the research should be directed to the principal study investigator, Whitney Brown (wabrown@emory.edu). Thank you for your participation!

Please answer the following questions related to your course of study in school.

Which of the following medical schools do you attend?

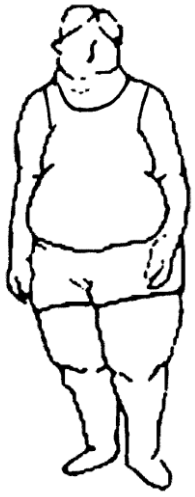
__Emory University Rollins School of Public Health
__Emory University School of Medicine
__Medical College of Georgia
__Mercer University School of Medicine
__Morehouse School of Medicine

What degree are you currently pursuing?

__M.D.
__M.P.H.
__Ph.D.
__Other, please specify: _____

What is your current year of study?

__1st
__2nd
__3rd
__4th
__Other, please specify: _____



Consider the individual in the drawing above. The following questions ask that you think about how you would rate someone who looked like this individual on a range of characteristics. For each characteristic, please select the box that best represents your perception of this individual.

1. poor self control_____ _____ _____ _____ _____good self-control
2. no will power_____ _____ _____ _____ _____has will power
3. over-eats_____ _____ _____ _____ _____under-eats
4. likes food_____ _____ _____ _____ _____dislikes food
5. self-indulgent_____ _____ _____ _____ _____self-sacrificing
6. unattractive_____ _____ _____ _____ _____attractive
7. shapeless_____ _____ _____ _____ _____shapely
8. inactive_____ _____ _____ _____ _____active
9. lazy_____ _____ _____ _____ _____industrious
10. unambitious_____ _____ _____ _____ _____ambitious
11. slow_____ _____ _____ _____ _____fast
12. disgusting_____ _____ _____ _____ _____pleasant
13. careless_____ _____ _____ _____ _____careful

14. has no endurance_____ _____ _____ _____ _____has endurance
15. irritable_____ _____ _____ _____ _____cheerful
16. hard to talk to_____ _____ _____ _____ _____easy to talk to
17. humorless/not funny_____ _____ _____ _____ _____funny
18. cold_____ _____ _____ _____ _____warm
19. doesn't try to please people_____ _____ _____ _____ _____tries to please people
20. inconsiderate of others_____ _____ _____ _____ _____considerate of others
21. unfriendly_____ _____ _____ _____ _____friendly
22. uptight_____ _____ _____ _____ _____relaxed
23. selfish_____ _____ _____ _____ _____generous
24. bad_____ _____ _____ _____ _____good
25. smells bad_____ _____ _____ _____ _____smells good
26. sweaty_____ _____ _____ _____ _____not sweaty
27. dirty_____ _____ _____ _____ _____clean
28. does not attend to own appearance_____ _____ _____ _____ _____attends to own appearance
29. sloppy_____ _____ _____ _____ _____tidy
30. bad complexion_____ _____ _____ _____ _____good complexion
31. pitiful_____ _____ _____ _____ _____admirable
32. not individualistic_____ _____ _____ _____ _____individualistic
33. dependent_____ _____ _____ _____ _____independent
34. passive_____ _____ _____ _____ _____aggressive
35. nonassertive_____ _____ _____ _____ _____assertive
36. insignificant_____ _____ _____ _____ _____significant
37. indirect_____ _____ _____ _____ _____direct
38. ineffective_____ _____ _____ _____ _____effective
39. inefficient_____ _____ _____ _____ _____efficient
40. weak_____ _____ _____ _____ _____strong
41. unpopular_____ _____ _____ _____ _____popular
42. insecure_____ _____ _____ _____ _____secure
43. depressed_____ _____ _____ _____ _____not depressed
44. low self-esteem_____ _____ _____ _____ _____high self-esteem
45. miserable_____ _____ _____ _____ _____happy
46. moody_____ _____ _____ _____ _____not moody
47. not artistic_____ _____ _____ _____ _____artistic
48. uncreative_____ _____ _____ _____ _____creative
49. stupid_____ _____ _____ _____ _____smart
50. doesn't read a lot_____ _____ _____ _____ _____reads a lot
51. incompetent_____ _____ _____ _____ _____competent
52. stuck in their ways_____ _____ _____ _____ _____amenable to change
53. unhealthy_____ _____ _____ _____ _____healthy
54. disabled_____ _____ _____ _____ _____able-bodied
55. irresponsible_____ _____ _____ _____ _____responsible
56. poor_____ _____ _____ _____ _____rich
57. greedy_____ _____ _____ _____ _____generous
58. boring_____ _____ _____ _____ _____interesting

We are interested in knowing your opinions about how people become fat. Please answer the following questions by selecting the box that represents the extent to which you agree/disagree with each statement.

59. People get fat because they don't exercise very much.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

60. People who are fat get that way because they like eating more than thin people.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

61. Some fat people don't try to lose weight because they seem proud of being fat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

62. The idea that genetics causes people to be fat is just an excuse.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

63. The reason some people are fat is because the foods their parents gave them during childhood contained lots of fat and sugar.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

64. People get fat because in school, at work, and at home, they can get their hands on lots of fatty food.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

65. Lots of fat people learned bad eating habits from their parents.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

66. Fat people usually have medical conditions that cause them to get overweight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

67. The "baby fat" that fat people were born with is almost impossible to lose.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

68. Being fat is a direct result of having too little willpower.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

69. Most people who are fat inherited genes that cause obesity from their parents.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

70. Fat people really can't control how much they eat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

71. By joining weight loss groups, fat people can lose weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

72. Fat people are “stuck” being fat, usually because of hormones they can’t control.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

73. It seems like most fat people don’t like to exercise.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

74. There’s no excuse for being fat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

75. Fat people stop eating when they are full.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

76. The parents of most fat people let them watch too much TV when they were children.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

77. People would still get fat even if they stopped snacking between meals.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

78. Almost all fat people try really hard to lose weight, but just can’t.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

79. One big reason for getting fat is being lazy.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

80. If fat people had more willpower, they’d be able to stop eating too much.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

81. Fat people often try to escape from their problems by eating.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

82. If fat people just knew how unhealthy it is to be obese, they’d exercise and diet more.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

83. By making their diets healthier, fat people can control their weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

84. Fat people can blame their parents for giving them too much unhealthy food.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

85. Almost all fat people could lose weight if they truly wanted to.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

86. Some people who are fat grew up in places where there are lots of adults who eat too much.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

87. Fat people usually don't have the energy to lose weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

88. Ultimately, fat people are to blame for their weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

Next, we would like to know how you generally approach specific situations. Please answer the following questions based on your experience by selecting "True" or "False."

89. It is sometimes hard for me to go on with my work if I am not encouraged. (True/False)

90. I sometimes feel resentful when I don't get my way. (True/False)

91. On a few occasions, I have given up doing something because I thought too little of my ability. (True/False)

92. There have been times when I felt like rebelling against people in authority even though I knew they were right. (True/False)

93. No matter who I'm talking to, I'm always a good listener. (True/False)

94. There have been occasions when I took advantage of someone. (True/False)

95. I'm always willing to admit it when I make a mistake. (True/False)

96. I sometimes try to get even rather than forgive and forget. (True/False)

97. I am always courteous, even to people who are disagreeable. (True/False)

98. I have never been irked when people expressed ideas very different from my own. (True/False)

99. There have been times when I was quite jealous of the good fortune of others. (True/False)

100. I am sometimes irritated by people who ask favors of me. (True/False)

101. I have never deliberately said something that hurt someone's feelings. (True/False)

Research shows that fat people are discriminated against in the workplace. Qualified people are less likely to be hired, less likely to be promoted, more likely to be fired, and paid less if they are overweight. Currently, there are no laws to protect fat people from discrimination based on their

body weight. Thus, different types of laws are being considered to protect people from discrimination based on weight. We are interested in your opinions about these proposed laws.

The Americans with Disabilities Act (ADA) protects people with disabilities from being discriminated against in the workplace. One way to protect obese people from discrimination in the workplace is to consider obesity as a disability under the ADA.

Please indicate how much you agree with the following:

102. Obesity should be considered a disability under the ADA so that obese people will be protected from discrimination in the workplace.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

103. The government should play a more active role in protecting overweight people from discrimination.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

104. Overweight people should be subject to the same protections and benefits offered to people with physical disabilities.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

105. Overweight people should be subject to the same protections and benefits offered to people with physical disabilities.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

States have civil right laws that protect people from being discriminated against because of their race, color, religion, sex, and national origin. Michigan is the only state in which the civil rights law also protects people from being discriminated against because of their body weight. The Michigan law states that citizens have the opportunity to obtain employment, housing, and equal use of public accommodations without discrimination based on religion, race, color, national origin, age, sex, height, weight, and familial status.

Please indicate how much you agree with the following:

106. My state should also include weight in their civil rights law in order to protect people from discrimination based on their body weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

The Age Discrimination in Employment Act (ADEA) protects people over 40 years old from age-based discrimination in the workplace. The ADEA makes it illegal (unlawful) for an employer to refuse to hire, pay less wages, or fire an employee because of their age. Congress can enact a similar law so that employers cannot refuse to hire, pay less wages, or fire an overweight person because of their body weight. The proposed law would be called the Weight Discrimination in Employment Act (WDEA), and would make it illegal (unlawful) for employers to discriminate against employees because of their weight.

Please indicate how much you agree with the following:

107. Congress should pass the WDEA to protect overweight Americans from discrimination in the workplace.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

108. It should be illegal (unlawful) for an employer to refuse to hire a qualified person because of his/her body weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

109. It should be illegal (unlawful) for an employer to fire a qualified employee because of his/her body weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

110. It should be illegal (unlawful) for an employer to deny a promotion or appropriate compensation to a qualified employee because of his/her body weight.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

Fat people may also be treated differently from normal-weight people in the contexts of housing, social services, healthcare, and education. We are interested in your opinions about where and when discrimination based upon weight should be allowable. There are no right or wrong answers to these questions; we are only interested in your opinion.

111. It should be illegal for a health insurance company to charge a fat person more for coverage than a normal-weight person.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

112. I believe that private businesses, like department stores, should be allowed to refuse service to someone because s/he is fat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

113. TV stations should not be allowed to refuse to hire an anchor because s/he is fat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

114. I think it would be fine for a nail salon to charge a customer extra if s/he is fat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

115. Banks should have the right to deny fat people a loan on the basis of their weight alone.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

116. A student applying to college should never be denied admission because s/he is fat.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

117. It would be ok for an airline to refuse to hire a fat flight attendant.
Strongly disagree_____ _____ _____ _____ _____Strongly agree

118. A restaurant should be allowed to charge fat people more than normal-weight people to eat at a fixed-price "all you can eat buffet."

Strongly disagree_____ _____ _____ _____ _____Strongly agree

119. A landlord or leasing company should have the right to refuse to rent an apartment to a fat person simply because s/he is fat.

Strongly disagree_____ _____ _____ _____ _____Strongly agree

Finally, please answer the following questions about your background.

120. What is your sex?
__Male
__Female
__Other, please specify: _____

121. What is your age?
[Select from pull-down menu.]

122. What is your race?
__Black/African-American
__Hispanic/Latino
__White, non-Hispanic
__Asian/Pacific Islander
__Native American or Alaska Native
__Multiracial
__Other, please specify: _____

123. How would you describe the place where you spent most of your childhood?
__Rural area
__Small city
__Mid-sized city
__Large metropolitan area

124. How would you describe your political affiliation?
__Conservative
__Moderate
__Liberal
__Independent
__Other, please specify: _____

125. Have you, a parent, or a sibling ever been diagnosed with any form of cancer?
__Yes
__No

126. What is your height?
[Select from pull-down menu.]
__ feet, __ inches

127. What is your current weight (in pounds)?
[Select from pull-down menu.]
__ pounds

128. Do you have a personal experience with being overweight/obese?
__Yes
__No

129. Does your family have a history of overweight/obesity?
__Yes
__No

---

130. Please use the space provided below to share any additional thoughts or comments about the subject matter covered in this survey.

THANK YOU!

Thank you for your time and your interest in this study.

If you have any questions, please contact Whitney Brown at wabrown@emory.edu.

Thank you again for your participation. Please close your browser window at this time.