



# The relationship between body weight and perceived weight-related employment discrimination: The role of sex and race

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## Abstract

This study provides unique empirical evidence regarding a growing concern internationally: weight discrimination in the workplace. Using survey data from a national sample of 2838 American adults, it responds to Puhl and Brownell's [Puhl, R., & Brownell, K. D. (2001). Bias, discrimination, and obesity. *Obesity Research*, 9, 788–805] call for additional research investigating the prevalence of discriminatory experience among overweight employees, and to their more specific call for research that takes sex and race into account when examining weight discrimination. The results indicate that women are over 16 times more likely than men to perceive employment related discrimination and identify weight as the basis for their discriminatory experience. In addition, overweight respondents were 12 times more likely than normal weight respondents to report weight-related employment discrimination, obese 37 times more likely, and severely obese more than 100 times more likely. The implications of the study's findings for organizations, policy makers, overweight employees, and career counselors are discussed, and future research directions suggested.

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## 1. Introduction

The increased focus on employee weight and its contribution to employers' health care costs in recent years has raised concerns that overweight job applicants and employees may experience unfair, if not illegal, employment discrimination (Alvarez & Soltis, 2006; Grossman, 2004; Wysocki, 2004). There is reason to believe that such concerns may be well founded. Experimental studies in the US provide consistent evidence of discrimination against the overweight in a wide variety of simulated employment decisions (e.g., hiring, placement, compensation, promotion, discharge; Cossrow, Jeffrey, & McGuire, 2001; Hebl & Mannix, 2003; Roehling, 1999; Wade & DiMaria, 2003). There is also evidence that job seekers' weight has a biasing influence on assessments of their career potential (Cash, Gillen, & Burns, 1977), and the career advice they receive (Benson, Severs, Tatgenhorst, & Loddengaard, 1980). Increasing obesity levels in industrialized countries (Williams, 2006), and research regarding the relationship between weight and career-related outcomes (e.g., wages) from outside the US, suggest that weight discrimination in employment is likely to be a growing concern internationally (e.g., Ding & Stillman, 2005; Harper, 2000; Sarlio-Lahteenkorva & Lahelma, 1999; Thomas, 2005).

In addition to fairness and effective human resource management considerations, there is also reason for growing concern regarding the potential legal implications of weight discrimination. Currently only one state (Michigan) and several cities (e.g., San Francisco, Santa Cruz) explicitly prohibit weight discrimination in employment. However, the Americans With Disabilities Act of 1991 and similar state disability laws provide protection against employment discrimination based on *weight-related* "actual" or "perceived" disabilities (Roehling, Roehling, & Odland, forthcoming), and the differential application of weight standards to female and male employees (e.g., treating overweight women more harshly than overweight men) has been found to constitute illegal sex discrimination (e.g., *Gerdom v. Continental Airlines, Inc*, 1982). Calls for new legislation providing overweight job applicants greater protection against discrimination suggest that the legal implications of weight discrimination is a growing concern (e.g., Horner, 2005; Theran, 2001).

While a substantial body of research indicates that body weight influences simulated employment decisions, much less is known about overweight employees' actual discriminatory experiences. To what extent do overweight individuals perceive that they are discriminated against because of their weight in real-world employment settings? Does the answer to that question vary by sex and race (e.g., does sex moderate the relationship between body weight and perceived employment discrimination)? How prevalent is weight-related perceived employment discrimination compared to other forms of perceived employment discrimination (e.g., sex, race or ethnicity)? In investigating these questions, the present study responds to both the general call for additional research investigating the prevalence of discriminatory experience among overweight employees, and to the more specific need for research that takes sex and race into account when examining weight-related discrimination (Puhl & Brownell, 2001). Its results have important implications for several groups, including: organizations concerned about the fairness and effectiveness of their employment decisions, policymakers considering the need for legislation providing protection against weight discrimination (Horner, 2005), overweight individuals, and the career counselors who advise them.

The remainder of this article is organized in four sections. The first section discusses the perceived discrimination construct and its importance as a subject of study, and reviews

existing perceived weight discrimination research. The second section presents and discusses the research questions that guide the present investigation of the relationships among body weight, sex, race, and perceived employment discrimination. The third section describes the present study and reports its results. We conclude by discussing the study's findings and their practical implications, and identifying future research directions.

## 2. Perceived discrimination and the literature review

### 2.1. *The nature of perceived discrimination*

*Perceived* discrimination involves both: (1) a perception that one is treated differently based on membership in a group (e.g., race, weight); and, (2) the belief that the differential treatment was unfair or unjust (Major, Quinton, & McCoy, 2002). Thus, perceived discrimination involves an attribution to discrimination, and that attribution may or may not correspond with the objective reality, or “actual discrimination.” That is, individuals may accurately perceive discrimination when it occurs, they may perceive discrimination when it does not actually occur (a “false alarm”), or they may fail to perceive discrimination that actually occurs (Harris, Lievens, & Van Hove, 2004).

### 2.2. *Importance of studying perceived discrimination in employment*

The study of perceived discrimination in employment settings as a phenomenon that is distinct from actual weight discrimination is important for several reasons. Research has shown that the perception that one has been the victim of employment discrimination may have adverse psychological and physical health outcomes for employees. For example, Pavalko, Mossakowski, and Hamilton (2003) found that perceived work discrimination was related to psychological distress and physical limitations. Perceived employment discrimination has also been found to affect important work-related attitudes and behaviors (e.g., job satisfaction, organizational commitment, organizational citizenship behaviors, grievances, Ensher, Grant-Vallone, & Donaldson, 2001; turnover intentions, Blau, Tatum, & Ward-Cook, 2003). These attitudes and behaviors, in turn, can affect organizational performance. A better understanding of the relationship between employee weight and perceived employment discrimination will help organizations assess and address the need for interventions (e.g., modifying diversity training programs to incorporate content related to weight discrimination, adopting formal policies prohibiting weight discrimination).

Perceived discrimination may also influence career-related decisions. For example, research has found that perceived race and sex discrimination influenced individual's decisions to participate in the labor market (e.g., Goldsmith, Sedo, Darity, & Hamilton, 2004; Westaby & Braithwaite, 2003). As a result, a better understanding of the nature and extent of weight-related perceived discrimination should help career counselors understand and assist overweight individuals.

The study of perceived weight-related discrimination will also contribute to the understanding of the stigma often associated with being overweight. For example, it is argued that the weight bias is relatively unique in that, unlike victims of other forms of discrimination, victims of weight bias are more likely to share the bias, and as a result, accept adverse treatment as their due. Thus, because they feel deserving of weight-related mistreatment, overweight employees may not view such treatment as unjust, and therefore,

as not involving discrimination (Crandall, 1994; Crocker, Cornwell, & Major, 1993; Falkner et al., 1999). A finding of relatively low levels of perceived weight discrimination compared to the levels of actual weight discrimination suggested by laboratory studies would tend to support this argument.

Finally, evidence regarding the nature and extent of the relationship between employee weight and perceived discrimination will help inform policymakers considering recent calls for legislation providing protection against weight discrimination in employment (e.g., Horner, 2005; Theran, 2001). Is there a critical level of obesity at which perceived weight discrimination becomes much more prevalent, suggesting the weight group that is in greatest need of legal protection? How prevalent is perceived weight discrimination in employment compared to other forms of discrimination that have received, or are receiving, much more attention from state legislatures (e.g., disability, sexual orientation)? Are people who belong to classifications that tend to experience other forms of discrimination, such as women and minorities, much more likely to report experiencing weight discrimination? In summary, the investigation of the relationship between body weight and perceived employment discrimination has important theoretical, practical, and policy implications.

### 2.3. *Review of perceived weight discrimination research*

Consistent with Puhl and Brownell's (2001) assessment, our review of diverse literatures (e.g., management, psychology, economics, medicine, ethics) identified surprisingly few published studies investigating perceived weight discrimination in employment settings. Most of the studies involve participants recruited through groups or programs focusing on weight-related concerns (e.g., groups advocating greater acceptance of overweight individuals, participants in weight loss programs, individuals undergoing obesity-related surgery).

Using a survey that included an open-ended question asking respondents whether they thought their weight had affected their employment relationships, Harris, Waschull, and Walters (1990) found that 9% of their sample of 55 weight loss program participants (85% female) felt that their employment experiences had been negatively affected by their weight. While all respondents were at least somewhat overweight, a wide range of weights was represented in the sample. However, no attempt was made to assess whether the reported negative affects of weight varied across the range of respondents' weights.

The first published attempt to assess variation in weight-related perceived employment discrimination across weight levels is a study by Rothblum, Brand, Miller, and Oetjen (1990) appearing in the *Journal of Vocational Behavior*. Their survey of 453 adults (82% female) recruited through the National Association to Advance Fat Acceptance (members, their families, and friends) found that very obese respondents (50% or more above their ideal weight) reported experiencing more types of employment discrimination than obese and average weight (i.e., non-obese) respondents. Most notably, 26% of the very obese respondents reported being denied benefits because of their weight, and 17% reported being terminated because of their weight. However, obese respondents (20–49% above ideal weight) did not report significantly more incidents of employment related weight discrimination than average weight respondents. Further, the very obese did not differ from average weight respondents in terms of their reported job prestige, actual salaries, or pay satisfaction.

Falkner et al. (1999) asked 1228 adults (81% female) enrolled in a longitudinal study to prevent weight gain whether "In the last year, have any of the following people treated you

badly because of your weight?" The categories of people included "Spouse," "Friend," "Co-worker," "Employer," and "Stranger." Only 2.4% of the respondents reported weight-related mistreatment by an employer, and 5.6% reported mistreatment by a co-worker. Interestingly, the most frequently identified source of weight-related mistreatment was "Spouse" (11.6%). Based on their findings, the authors suggest that perceived weight-related discrimination may be *lower* than actual weight-related discrimination in the workplace.

Several studies examining the effects of major obesity-related surgery (e.g., stomach stapling) have included questions related to employment outcomes. Their findings indicate that individuals undergoing the surgery consistently report being the victim of weight-related employment discrimination prior to surgery, and those who experience significant weight loss following surgery perceive less weight-related employment discrimination and greater employment related success following their surgery (e.g., Di Gregorio & Palkoner, 2001; Rabner, Dalton, & Greenstein, 1993; Rand & Macgregor, 1990).

Frieze, Olson, and Good (1990), the first of the identified studies not to recruit participants from a weight-focused group or program, asked 1327 graduates of an MBA program (33% female) "Have you ever experienced any form of discrimination in your work? If yes, explain." Responses to the latter, open-ended question were content coded. They found that while 16.9% of the men and 51.7% of the women reported experiencing some form of employment discrimination, when asked to explain the basis for the discrimination, only two men (.002%) and one woman (.002%) identified their weight as the reason. Further, respondents' weight level was not related to perceived weight discrimination.

Our review identified only one study investigating the relationship between an individual's weight and perceived employment discrimination in a national sample. As part of a larger study investigating the relationships between body weight and various forms of discrimination (e.g., "major life-time," "daily interpersonal," "health care"), Carr and Friedman (2005) examined the relationship between body weight and perceived employment discrimination, and the potential moderating role of sex and race. They found that, compared to normal weight survey respondents, overweight, obese, and very obese respondents were more likely to report experiencing work-related discrimination, and further, that the relationship between body weight and perceived employment discrimination was not moderated by either race or sex.

Although a significant advancement in terms of the sample used, the Carr and Friedman (2005) study has several significant limitations. First, while the study acknowledges the potentially significant role of race, and the fact that the experience of overweight Whites may be different from the experience of overweight "minority" groups, for reasons that are not apparent, the study investigates the role of race by comparing African Americans with all others (Whites, Hispanic, Asians, Native Americans, and "Others"). As a result, the study's failure to find race effects may be due to the aggregation of races that obscured true differences among the racial groups (e.g., African Americans versus Whites only). A second limitation is that Carr and Friedman (2005) only examine the relationship between weight and perceived employment discrimination *in general*; they do not attempt to examine the relationship between weight and perceived *weight-related* employment discrimination in particular. Third, although the authors suggested a three-way interaction such that the relationship between body weight and perceived discrimination would be strongest among White women (Carr & Friedman, p. 246), they did not test for it.

## 2.4. Summary of review

With the exception of the Carr and Friedman (2005) study, existing studies all involve limited samples that raise serious questions regarding the generalizability of their findings. For example, the respondents solicited from weight-focused groups or programs may have had increased sensitivity to weight-related discrimination, or they may have experienced higher levels of discrimination than most obese persons, leading them to participate in the weight-focused group or program. Also, although the participants in the Frieze et al. (1990) study were not solicited through a weight-related group or program, their above average education (MBA graduates) and socioeconomic class status may have provided them insulation from discrimination. Carr and Friedman (2005) is the only study that attempted to investigate the potential role of race in moderating the relationship between body weight and perceived employment discrimination. However, that study's investigation is limited in the significant ways identified above. The present study addresses all of the foregoing limitations.

## 3. Research questions

### 3.1. *The role of sex and race*

Research conducted in a wide range of settings indicates that overweight women are evaluated more negatively than overweight men, and as a result, women are much more likely to be discriminated against based on weight (Fikkan & Rothblum, 2005; Puhl & Brownell, 2001). For example, research investigating weight bias in employment settings has found that overweight women receive less desirable job assignments than overweight men (Bellizzi, Klassen, & Belonax, 1989), and that while even mildly obese women earn significantly less than their non-obese counterparts, there is not a similar wage penalty among mildly obese men (Maranto & Stenoien, 2000; Pagan & Davila, 1997; Register & Williams, 1990). To date, only one study has investigated potential sex differences in the relationship of body weight to weight-related perceived employment discrimination using subjects who were not recruited through some form of program for overweight individuals. Frieze et al. (1990), discussed above, found virtually no evidence of weight-related perceived discrimination among male and female MBAs (.002% reporting weight discrimination).

There is also evidence that the weight bias effect may be further moderated by the race of the individual. Specifically, findings from both experimental studies (e.g., Hebl & Heatherton, 1998) and field settings (e.g., Maranto & Stenoien, 2000), suggest that the negative relationship between weight and desirable employment outcomes (hiring decisions, higher wages) is stronger among White women than among African-American women. It has been suggested that people are more accepting of overweight African-Americans, perhaps due to the number of positive role models among overweight African-American women (Hebl & Heatherton, 1998; Schooler, Ward, Merriwether, & Caruthers, 2004). Another possible explanation for the differential effect of weight across races is that among African-Americans, being overweight is less likely to function as a characteristic that evokes social categorization (and resulting stereotypes) because being overweight is more common among African-Americans, and/or because their race may be a more salient characteristic than weight on which categorization is based (Hebl & Heatherton, 1998).

Finally, research finding that one's salient group identity influences the attributions he/she makes about the basis for perceived unfair treatment (Sellers & Shelton, 2003) suggests that, compared to obese Whites, obese African-Americans who perceive they have been discriminated against in employment settings may be more likely to attribute the perceived unfair treatment to their race, and, as a result, may be less likely to perceive weight-based discrimination. These theoretical reasons to expect race differences have led to a call for research investigating race differences in the effect of weight on the experience of discrimination (Puhl & Brownell, 2001).

In response to the identified limitations in the literature, and the calls for specific research (identified above), the present study investigates the following research question using a national sample:

Research question 1:

[A] What is the relationship between body weight and individuals' perceptions that they have experienced weight-related employment discrimination?

[B] To what extent does the relationship between body weight and individuals' perceptions of weight-related employment discrimination vary by sex and/or race (White non-Hispanic versus African-American non-Hispanic)?

### 3.2. *The relative prevalence of weight-related perceived employment discrimination*

To provide a better basis for assessing the relative magnitude of the "weight discrimination problem," we place findings regarding the prevalence of weight-related perceived employment discrimination in a broader context by investigating the following question:

Research question 2:

[A] What is the relative prevalence of weight-related perceived employment discrimination compared to other forms of employment discrimination (e.g., sex, race or ethnicity)?

[B] To what extent does the relative prevalence of weight-related perceived employment discrimination vary across sex and racial groups (non-Hispanic White versus non-Hispanic African-American)?

## 4. Method

### 4.1. *Sample*

The research questions are investigated using data from the MacArthur Foundation National Survey of Midlife Development in the United States (MIDUS), a survey of Americans conducted in 1995 (Brim et al., 1996). MIDUS respondents are a nationally representative sample of noninstitutionalized English-speaking adults, aged 25–74 years, residing in the coterminous United States. The MIDUS survey was constructed by a multidisciplinary team of researchers with the goal of investigating "the patterns, predictors, and consequences of midlife development in the areas of physical health, psychological well-being, and social responsibility" (Inter-university consortium for Political and Social Research). Within that general domain, the MIDUS data has been used to investigate a wide range of issues, including (by way of example): the effect of psychological character-

istics and socioeconomic stratification on health (Barger, 2006), the mental health correlates of perceived discrimination (Mays & Cochran, 2001), and gender differences in multiple role involvement and its relationship to well-being (Ahrens & Ryff, 2007). A review of the literature identified 16 new studies using the MIDUS data in the last two and a half years (2005–2007).

The sample used in the present analyses consists of the 2838 individuals age 65 or less, who have worked at least some time in their life (but not necessarily currently employed). The mean age of the respondents is 44.8 years, and 50% of the respondents are male. Ninety-three percent of the respondents are White non-Hispanic, 7% are African American non-Hispanic. Because the focus of our investigation is discrimination against overweight job applicants and employees, underweight individuals (BMI < 19) were excluded from the sample. However, normal weight individuals were included as the comparison group (discussed below). Forty percent of the respondents fall within the normal weight category, 37.8% overweight, 15% obese, and 7.2% very obese.

#### 4.2. Procedure

Respondents for MIDUS were randomly selected from working telephone banks in the US. There were two parts to participation in the study. Respondents first completed a telephone interview, and then completed a mail-in questionnaire. The response rate for completing both questionnaires was 61% (Brim et al., 1996).

#### 4.3. Measures

##### 4.3.1. Control variables

Several demographic and socioeconomic variables are controlled because of their potential association with both obesity and one's likelihood of reporting discrimination (Kessler, Mickelson, & Williams, 1999). Control variables included age (continuous variable), marital status (dichotomous variable, married = 1), educational status (highest grade completed, 1 = nothing beyond grade school, 12 = professional degree beyond masters), and an occupational variable that codes the respondent's current (or most recent) job in two categories, professional/managerial versus other (e.g., blue collar, sales).

##### 4.3.2. Predictors

*Race* is based on a dichotomous variable in which participants were coded as either White non-Hispanic (0) or African American non-Hispanic (1).

*Sex* is based on a dichotomous variable in which participants were coded as either male (1) or female (2).

*Body mass index* (BMI) scores were calculated for each respondent using their self-reported height and weight. BMI is a widely used measure of body fat that is calculated by dividing the respondent's weight in kilograms by their height in meters squared (Pool, 2000). Because we are interested in identifying specific weight points at which weight discrimination becomes significantly more prevalent, the relationship between BMI and weight-related perceived employment discrimination was investigated using a set of dummy coded variables based on the cut-points defined by the Heart, Lung, and Blood Institute of the National Institutes of Health (1998). The initial categories included:



normal weight (BMI 19–24.9), overweight (BMI 25–29.9), obese I (BMI 30–34.9), obese II (BMI 35–39.9), and obese III (BMI of 40 or higher). Due to the extremely small number of cases in the obese III category, and consistent with prior research (e.g., Carr & Friedman, 2005), we combined the latter two categories to create a “very obese” obese category (BMI > 35). The normal weight category was the omitted, comparison weight category in the logistic regression analyses.

#### 4.3.3. Criterion variable

*Weight-related perceived employment discrimination* is a dichotomous variable assessing whether the respondent reported experiencing at least one of three forms of employment discrimination (not hired for a job, not given a job promotion, fired from a job), and identified weight as a primary basis for his or her discriminatory experience. The perceived basis for respondents’ reported discriminatory experience was assessed using the following open-ended question: “What was the main reason for the discrimination that you experienced?” The most frequently mentioned coding categories were age, sex, race or ethnicity, and weight or height. Respondents who answered “yes” to any of the three employment discrimination items (identified above), and were coded as identifying weight or height as a primary basis for their discriminatory experience in the MIDUS data, were coded as having experienced weight-related perceived employment discrimination (1) in the present study.

We note that the coding of weight and height in the same “main reason for discrimination” category in the MIDUS data reflects the linkage between weight and height in assessments of the extent to which individuals have excess body weight (e.g., calculation of BMI), and the fact that relatively few respondents identified height as the main basis for their perceived discrimination (Kessler et al., 1999).<sup>1</sup> It is possible that some individuals in the sample who were coded as experiencing weight *or* height discrimination, experienced only height discrimination. Although this was deemed a limitation of the data that was unlikely to significantly bias results, we conduct several additional analyses to investigate the possible effect of this limitation on the results (discussed in the Results section, below).

## 5. Results

Table 1 presents the means, standard deviations, and correlations for the study’s focal variables. Significant relationships exist between each of the weight category variables and weight-related perceived employment discrimination. Significant correlations were also found between age, sex, race, and height and weight-related perceived discrimination, suggesting that the young, women, African Americans, and shorter respondents reported higher levels of weight-related perceived discrimination. However, these significant bivariate relationships fail to take into account recognized confounding influences (e.g., the strong relationship between height and sex; the fact that the incidence of obesity is

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<sup>1</sup> In a phone conversation with the first author of the present study, one of the researchers responsible for collecting the MIDUS data, Elaine Wethington (Cornell University, Department of Sociology), indicated that the coding of weight and height in a single category was based on fact that very few respondents mentioned height in their response to the question “What was the main reason for the discrimination that you experienced?”

Table 1  
Means and standard deviations for primary study variables

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8
1. Age	44.8	11.2								
2. Education	7.0	2.5	-.06							
3. Marital	.65	.48	.08	-.02						
4. White collar/profess.	.33	.47	-.06	.51	.01					
5. Race <sup>a</sup>	1.07	.25	-.04	-.08	-.09	-.06				
6. Sex <sup>b</sup>	1.5	.50	.03	-.08	-.13	-.10	.06			
7. Perceived wt. discrim.	.04	.20	-.04	.01	-.03	.00	.04	.08		
8. Height (in inches)	67.6	4.0	-.08	.13	.09	.12	-.07	-.75	-.07	
9. Very obese	.07	.25	.04	-.04	.01	-.06	.08	.09	.26	-.09
10. Obese	.14	.35	.09	-.08	.02	-.01	.05	-.03	.06	.02
11. Overweight	.36	.48	.05	-.01	.07	-.02	-.01	-.21	-.05	.15

Note:  $r >$  or equal to .04 significant at  $p < .05$  (2-tailed);  $r > .05$  significant at  $p < .01$  (2-tailed).

$N = 2827$ .

<sup>a</sup> Race (1 = White, 2 = Black).

<sup>b</sup> Sex (1 = male, 2 = female).

significantly higher among women, and among African-Americans as compared to Whites; Douchis, Hayden, & Wilfley, 2001).

### 5.1. The prevalence of weight-related perceived employment discrimination

The first data column of Table 2 presents the percent of individuals who perceived employment discrimination and identified weight or height as a primary basis for their discriminatory experiences. The percents are reported by weight level, sex, and race. Four percent of the total sample experienced discrimination in at least one of the three employment areas (i.e., discrimination in hiring, promotion, or discharge) and identified weight or height as a primary basis for their discriminatory experience. There is, however, significant variation in reported discrimination across weight categories for both women (very obese = 27.1%, normal weight = 0.7) and men (very obese = 12.1%, normal weight = 0.7). There is a dramatic difference between sexes among very obese respondents, with 27.7% of very obese women reporting weight-related employment discrimination, and only 12.1% of the men. However, sex differences decrease at lower weight levels (obese, overweight), and then disappear altogether among normal weight respondents (0.7% for both sexes). Among the very obese, the incidence of weight-related employment discrimination is virtually the same across races, and overall, there are few race differences and no strong pattern.

The remaining columns of Table 2 report the prevalence of perceived employment discrimination based on other characteristics (e.g., sex, race or ethnicity, age). The bottom row of Table 2 reports the prevalence of each type of employment discrimination in the total sample. Overall, weight-related perceived discrimination was found among 4% of the total sample, a frequency that was greater than employment discrimination attributed to religion, disability, or sexual orientation. Among the very obese respondents, weight or height is the most frequently identified basis for perceived employment discrimination. The frequency of weight-related employment discrimination drops off significantly among respondents in lower weight categories. However, among the total sample, weight-related

Table 2

Prevalence of perceived employment discrimination by discrimination type, total sample and sub-samples (weight, sex, race)

Sub-samples		Basis for discrimination						
		Weight or height %	Sex %	Race or ethnicity %	Age %	Religion %	Disability %	Sexual orientation %
<i>Very obese</i>	(n = 196)	22.4	12.2	8.7	6.1	2.6	0.5	0.0
Women		27.7	16.2	7.7	8.8	3.1	0.8	0.0
White	(n = 111)	27.9	18.0	3.6	9.0	2.7	0.9	0.0
Black	(n = 19)	26.3	5.3	31.6	5.3	5.3	0.0	0.0
Men		12.1	4.5	10.6	1.5	1.5	0.0	0.0
White	(n = 58)	12.1	5.2	8.6	1.7	1.7	0.0	0.0
Black	(n = 8)	12.7	0.0	75.0	0.0	0.0	0.0	0.0
<i>Obese</i>	(n = 407)	6.6	7.9	8.1	6.1	1.2	1.2	0.7
Women		9.6	12.3	7.5	5.3	1.6	2.1	1.1
White	(n = 159)	10.7	12.6	4.4	5.7	1.9	2.5	1.3
Black	(n = 28)	3.6	10.7	25.0	3.6	0.0	0.0	0.0
Men		4.1	4.1	8.6	6.8	0.9	0.5	0.5
White	(n = 209)	4.3	4.3	6.2	6.7	1.0	0.5	0.5
Black	(n = 11)	0.0	0.0	45.5	9.1	0.0	0.0	0.0
<i>Overweight</i>	(n = 1022)	2.7	7.0	7.9	6.1	1.3	0.8	1.3
Women		4.1	13.3	6.8	7.6	0.8	0.8	1.6
White	(n = 333)	3.9	14.1	4.5	8.4	0.6	0.9	1.5
Black	(n = 11)	5.7	5.7	28.6	0.0	2.9	0.0	2.9
Men		2.0	3.5	8.6	5.2	1.5	0.8	1.1
White	(n = 625)	1.8	3.4	7.4	5.1	1.6	0.8	1.1
Black	(n = 29)	6.9	6.9	34.5	6.9	0.0	0.0	3.4
<i>Normal weight</i>	(n = 1081)	0.7	10.0	5.3	5.0	1.4	0.3	1.0
Women		0.8	14.0	2.8	5.4	1.5	0.3	1.1
White	(n = 620)	0.8	14.4	1.6	5.3	1.6	0.3	1.1
Black	(n = 21)	0.0	7.1	28.7	7.1	0.0	0.0	0.0
Men		0.7	3.9	9.0	4.0	1.2	0/2	0.9
White	(n = 412)	0.5	3.9	7.3	4.1	1.0	0.2	1.0
Black	(n = 20)	4.8	4.8	44.9	9.5	4.8	0.0	0.0
Total sample	(n = 2827)	4.0	8.7	6.9	5.7	1.4	0.6	1.0

employment discrimination is still more prevalent than discrimination based on religion, disability, or sexual orientation.

## 5.2. Multivariate analyses

### 5.2.1. Primary analysis

Logistic regression analysis was conducted to further investigate the predictors of weight-related perceived employment discrimination. The control variables, race, sex,

and categorical weight variables were regressed on the dichotomous weight-related perceived employment variables in Step 1, resulting in the significant findings summarized in Table 3. Consistent with previous research, age was related to perceptions of weight-based discrimination, with younger respondents being more likely to report weight-related discrimination. Women were 16 times more likely than men to report weight-related employment discrimination. Significant relationships were also found for each of the weight variables, indicating that overweight respondents were 12 times more likely than normal weight respondents to report weight-related employment discrimination, and at higher weight levels (obese, very obese), the likelihood increased dramatically. The two-way interactions among the weight categories, race, and sex added in Step 2 were not significant ( $\chi^2 = 7.7$ ,  $df = 4$ ;  $p > .05$ ), and weight category  $\times$  race  $\times$  sex three-way interactions added in Step 3 were also not significant ( $\chi^2 = 0.8$ ,  $df = 3$ ;  $p > .05$ ).

### 5.2.2. Assessment of potential limitation

As noted earlier, in coding responses to the open-ended question “What was the main reason for the discrimination that you experienced?” the MIDUS data includes weight and height in the same category because of the relatively few “height” responses (Kessler et al., 1999). In order to investigate the possible effect of this limitation on the results, we conducted three additional analyses. First, we replicated the primary logistic regression analyses using a restricted sample that excluded those respondents that were most likely to experience height discrimination. Based on Judge and Cable’s (2004) meta-analysis finding that there is a positive relationship between height and a wide range of work-related outcomes among both men and women, with the relationship being somewhat stronger

Table 3  
Predictors of weight-related perceived employment discrimination

	Full sample (log odds)	Restricted sample: excluding short respondents (log odds) <sup>a</sup>	Full sample, controlling height (log odds) <sup>b</sup>
Control variables			
Age	11.9**	13.3***	11.9**
Education	1.3	2.7	1.9
Marital status variables	1.1	0.3	0.7
White collar/profess.	0.5	0.4	0.4
Height	N/A	N/A	0.2
Race	0.0	0.2	0.1
Sex	16.0***	17.6***	5.6*
Weight variables			
Very obese (BMI > 35)	107.6***	99.5***	99.9***
Obese (BMI 30–34.9)	37.5***	39.7***	38.4***
Overweight (BMI 25–29.9)	12.1**	13.3***	14.2***
$\chi^2$ (df)	165.7, 9*** ( $n = 2824$ )	171.4, 9*** ( $n = 2669$ )	168.3, 10*** ( $n = 2720$ )

<sup>a</sup> Respondents more than 2.0 standard deviations below the mean height for their sex are excluded from this analysis.

<sup>b</sup> Log odds for height = 0.2,  $p > .05$ .

\*  $p < .05$ .

\*\*  $p = .01$ .

\*\*\*  $p < .001$ .

among men, it was determined that short individuals of both sexes were the most likely to experience height discrimination in work settings. Therefore, we excluded those respondents who were more than two standard deviations below the mean height for their sex. The results using the restricted sample replicate the pattern of findings based on the full sample. The significant findings using the restricted sample are reported in Table 3, column 2. Again, the two-way interactions among the weight categories, race, and sex added in Step 2 were not significant ( $\chi^2 = 5.4$ ,  $df = 4$ ;  $p > .05$ ), and weight category  $\times$  race  $\times$  sex three-way interactions added in Step 3 were also not significant ( $\chi^2 = 2.4$ ,  $df = 3$ ;  $p > .05$ ).

Second, we examined the overall frequency of weight-related perceived employment discrimination in the restricted height sample and compared it to the frequency in the full sample. This analysis was conducted based on the reasoning that if the weight-related perceived employment discrimination variable was capturing a significant number of respondents who experienced only height discrimination, then if those respondents who are most likely to experience height discrimination in employment (short respondents) are removed from the sample, the overall frequency of the weight-related discrimination should be significantly lower. Eliminating short respondents from the sample did not result in a change in the overall frequency of weight-related perceived discrimination: 4% of the respondents in both the full and height restricted samples were coded as experiencing weight-related perceived employment discrimination.

Finally, we conducted the logistic regression analysis a third time, using the full sample, but controlling for respondent height. If the weight-related perceived discrimination variable was significantly contaminated by the responses of individuals who experienced only height discrimination (and not weight discrimination), then one would expect that: (1) respondent height would be significantly related to weight discrimination in the overall model; and, (2) controlling for height, a different pattern of significant relationships would exist between respondent weight and weight-related perceived discrimination variable (i.e., the pattern of significant results found without height in the model would not be replicated). It should be noted that the BMI measure is an indicator of excess body weight that takes into account both height and weight. Further, it was obvious that due to the strong relationship between height and sex ( $r = -.75$ ), including height in the model would significantly reduce, if not eliminate, the sex effect found in the primary analyses. The results of this analysis replicated the same pattern of significant results found in the other logistic regression analyses (Table 3, column 3). As expected, the relationship between sex and the likelihood of perceiving weight-related perceived employment discrimination was reduced due to multicollinearity. However, controlling for height, the pattern of results found in both the full sample and height-restricted samples were replicated. Further, height was not significantly associated with the likelihood of reporting weight-related perceived discrimination (0.2,  $p > .05$ ), providing further evidence that weight-related perceived discrimination variable was not significantly contaminated by the inclusion of some individuals who experienced height discrimination.

## 6. Discussion

This study provides unique empirical evidence regarding what appears to be a growing concern internationally: weight discrimination in the workplace. Using a national sample

of American workers, it responds to Puhl and Brownell's (2001) call for additional research investigating the prevalence of discriminatory experience among overweight employees, and to their more specific call for research that takes sex and race into account when examining weight-related discrimination. In this section we discuss the study's primary findings in light of the broader weight discrimination in employment literature. Also discussed are the study's implications for different constituencies, limitations, and future research directions.

### 6.1. Primary findings

Research from the broader literature addressing weight bias (e.g., Puhl & Brownell, 2001; Quinn & Crocker, 1999), and experimental studies investigating weight bias in simulated employment decisions (e.g., Bellizzi & Hasty, 2001), provide evidence that overweight women are judged more harshly than similarly overweight men. However, past research investigating weight-related perceived discrimination in significantly restricted samples has either failed to report any investigation of relevant sex differences (e.g., Harris et al., 1990), or failed to find significant sex differences (e.g., Frieze et al., 1990; Rothblum et al., 1990). The present study is the first study to examine the relationship between body weight and *weight-related* perceived employment discrimination (versus perceived employment discrimination *in general*) in a national sample. Its finding that women are 16 times more likely than men to report weight-related employment discrimination is in sharp contrast to previous studies using significantly restricted samples to investigate perceived weight-related employment discrimination (identified above), but consistent with the pattern reflected in the broader weight-bias literature. This finding provides what is arguably the most dramatic evidence to date supporting the "gendered nature" of weight discrimination.

The potential role of race was investigated to a greater extent than previous weight-related perceived employment discrimination research. Previous research investigating the relationship between weight and wages has found a three-way interaction among weight, sex, and race, such that the relationship between weight and perceived weight discrimination is strongest among White women (compared to African American women, or White or African American men; e.g., Maranto & Stenoien, 2000). However, the present study is the first to specifically examine potential three-way interactions among weight, sex, and race in their relationship to weight-related perceived employment discrimination. None of the three-way interactions involving a weight category variable, sex, and race were significant. Moreover, there were no significant two-way interactions between race and weight, or race and sex, in their relationship to weight-related perceived employment discrimination. This suggests the need for additional research examining the extent to which the stronger relationship between weight and wages found among White women may be attributable to non-discriminatory factors. For example, compared to African-Americans, Whites are less accepting of a larger body size, their own body size as well as the body size of others (Abood & Chandler, 1997; Altabe, 1998; Hebl & Heatherton, 1998). It is possible that greater weight concerns cause overweight White women to show less confidence in the jobs they seek, and/or their performance on the job, which in turn, negatively impacts their wages.

This study also addresses the identified need for research that includes greater differentiation in weight levels so that the level at which weight evokes a discriminatory response

can be investigated more thoroughly (Puhl & Brownell, 2003). Using a predominantly female sample recruited through the National Association for the Acceptance of Fat, and comparing three weight categories (very obese, obese, normal weight), Rothblum et al. (1990) found that only the “very obese” reported significant more weight discriminations than normal weight respondents. Based on this finding the authors suggested that the “critical level” of obesity required for discrimination to occur may be some where between 33% and 100% above ideal weight (Rothblum et al., 1990, p. 261). However, research examining the relationship between weight and wages (e.g., Maranto & Stenoien, 2000; Pagan & Davila, 1997), and experimental studies investigating the impact of weight on simulated employment decisions, have found that for women, weight bias may be experienced at relatively low levels of excess weight (i.e., levels that do not reach the obese range; Roehling, 1999).

Using four weight categories, we found that in addition to the very obese, weight-related perceived employment discrimination is also more prevalent among obese and merely overweight respondents (compared to normal weight respondents). Again, while this finding is in sharp contrast with the findings of earlier perceived weight discrimination research using significantly restricted samples (e.g., Rothblum et al., 1990), it is consistent with the broader weight bias literature (Roehling, 1999).

In order to provide a broader context in which to evaluate the prevalence of weight-related discrimination, this study explored the relative prevalence of weight-related perceived employment discrimination and the extent to which it varies by sex and race. We emphasize the exploratory nature of this aspect of the study’s investigation because although it is the first study to examine the relative prevalence of weight-related perceived employment discrimination by sex, race, and weight category, two limitations associated with the weight-related perceived discrimination variable may exert countervailing influences on the results that preclude precise frequency estimates. On one hand, although eliminating short respondents from the sample did not result in a change in the overall frequency of weight-related perceived discrimination (4% in both the full and restricted samples), the possibility that the inclusion of weight and height in the same MIDUS category may have slightly inflated the prevalence of weight-related discrimination cannot be entirely ruled out. On the other hand, the perceived weight-related discrimination variable may underestimate the prevalence of weight discrimination because it only assesses discrimination relating to three, albeit major, employment decisions: hiring, promotion, and discharge. A measure that also assesses, for example, discrimination in benefits, or discrimination by co-workers, may result in a higher weight-related perceived employment discrimination frequency. For more precise estimates of the prevalence of perceived weight discrimination in the workplace, additional research using measures that avoid the limitations of the present weight-related perceived employment discrimination variable is needed.

Finally, we believe the present findings call into question the suggestion that compared to discrimination based on other characteristics (e.g., race, sex, age), employees are more likely to accept negative treatment they receive as a result of their weight “as their due,” and are, as a result, less likely to characterize it as “unfair discrimination” (Crandall, 1994; Falkner et al., 1999). There is evidence that in both an absolute sense (e.g., 28% of the very obese females reporting weight-based employment discrimination), and a relative sense (e.g., weight-based discrimination being reported more frequently than many other forms of employment discrimination, Table 2), a substantial number of individuals perceive that they are being discriminated against in employment settings because of their weight.

However, in order to obtain an accurate, more precise assessment of the extent to which overweight employees accept (or do not accept) weight-based discrimination as something they deserve, future research that includes both an objective assessment of the extent to which weight-based discrimination is actually occurring and an assessment of perceived weight discrimination is needed.

### *6.2. Implications, additional limitations, and future research directions*

Although only one state (Michigan) and several cities (e.g., San Francisco, Santa Cruz) have legal protections against weight discrimination in employment, there are increasing calls for legislation addressing that concern (Horner, 2005; Theran, 2001). The present findings should help inform policy makers considering the need for such legislation in several ways. First, they provide evidence of the scope of the weight discrimination in employment problem. Weight discrimination is not only the most prevalent form of employment discrimination among very obese women, overall, it appears to be more prevalent than other forms of employment discrimination that have or are receiving much more attention and legislative action (disability, sexual orientation). Second, its findings suggest that to most effectively address the problem, the Michigan model of prohibiting weight discrimination should be followed. That is, weight discrimination in employment should be prohibited in general, without imposing a high threshold weight requirement for coverage (e.g., requiring that the employee must be morbidly obese to be protected). Third, the findings provide further evidence of a strong link between weight and sex, suggesting that a policy of prohibiting weight discrimination in employment would, in addition to protecting overweight individuals, also promote the long standing policy of promoting gender equality in the workplace. It should be noted, however, that the effectiveness of current legal protections against weight discrimination in employment has not been investigated, and therefore, remains an open question. Research addressing this limitation is strongly encouraged, both because of its value to policy makers, and because of its potential for providing insights regarding the nature of weight bias (e.g., its robustness in the face of social or legal pressures).

To the extent that employers rely on highly subjective and/or unvalidated hiring practices (e.g., traditional unstructured interviews), the findings provide employers additional reason to be concerned that the full potential of overweight employees is not being utilized, and further, that female applicants and employees are being treated differently on the basis of their weight. Legal concerns aside, the inclusion of weight-related bias in company diversity programs would seem to be warranted. In addressing the issue, diversity programs might include, for example, empirical evidence tending to refute widely held negative stereotypes about obese employees (e.g., Roehling, *forthcoming*). However, the question of whether training can effectively reduce weight bias in employment decisions by reducing reliance on weight-related stereotypes, and/or changing affective responses to obese individuals, remains an issue in need of additional research.

Our findings add to a growing body of weight discrimination research that warrants thoughtful consideration by overweight individuals and the career counselors who advise them. It might be argued that we should not seek to change people's behavior because of the prejudices of others. However, overweight individuals should at least be aware of the bias they may encounter, and how it may impact their career success. Further, it would seem that identifying voluntary steps that could be taken, or strategies that could be



followed, to avoid becoming a “victim” of weight discrimination is a worthy pursuit. Therefore, we call for research to investigate strategies that successful obese individuals have used to avoid, or at least minimize, weight bias in the work place. For example, research has found that although physically disabled individuals were viewed significantly more favorably when they mentioned (rather than when they did not mention) their disability during a job interview, overweight individuals were viewed significantly more favorably when they did *not* mention their obesity (Hebl & Kleck, 2002). Are there other behaviors that overweight job seekers should avoid, or be encouraged to engage in?

Research should also identify the type of advice career counselors are currently providing obese job seekers, and assess its effectiveness. There is evidence that some career counseling professionals simply guide obese individuals toward jobs where their weight is thought less likely to be a biasing factor (e.g., jobs not involving face-to-face interactions with customers; Maryland Commission on Human Relations, 1980), and anecdotal reports that other career counselors emphasize weight loss as a key to success in the workplace. What other advice is being given and how does it relate to different outcomes such as initial placement, job or career satisfaction, and employee health?

Finally, in addition to those limitations that have already identified, we note the limitation associated with the finding that when weight and other relevant factors are controlled, women are 16 times more likely than men to report weight-related perceived employment discrimination. While that finding is consistent with the sex effect found in the broader weight bias literature, the study’s design did not allow us to assess the extent to which that sex difference is due to greater actual discrimination against overweight and obese women versus greater sensitivity to weight-related discrimination among women. Future research might attempt to address this limitation by assessing perceived discrimination and objective evidence actual weight discrimination in the same field settings, or in experimental studies that manipulate the level of weight discrimination and assess the attributions to weight-based discrimination (versus other forms of discrimination) made by women versus men.

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