



## The ironic effects of weight stigma



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### HIGHLIGHTS

- We examine effects of exposure to weight stigmatizing (vs. control) new messages.
- Weight stigma led overweight but not nonoverweight women to consume more calories.
- Weight stigma reduced perceived dietary control among overweight women.
- Weight stigma increased perceived dietary control among nonoverweight women.
- Self-perceived overweight was more important predictor than actual body mass index.

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### ABSTRACT

America's war on obesity has intensified stigmatization of overweight and obese individuals. This experiment tested the prediction that exposure to weight-stigmatizing messages threatens the social identity of individuals who perceive themselves as overweight, depleting executive resources necessary for exercising self-control when presented with high calorie food. Women were randomly assigned to read a news article about stigma faced by overweight individuals in the job market or a control article. Exposure to weight-stigmatizing news articles caused self-perceived overweight women, but not women who did not perceive themselves as overweight, to consume *more* calories and feel *less* capable of controlling their eating than exposure to non-stigmatizing articles. Weight-stigmatizing articles also increased concerns about being a target of stigma among both self-perceived overweight and non-overweight women. Findings suggest that social messages targeted at combating obesity may have paradoxical and undesired effects.

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### Introduction

According to the Institute of Medicine, America is in the midst of an obesity “epidemic” (National Research Council, 2012). Media attention to obesity has increased dramatically (Saguy & Almeling, 2008), as has discrimination against overweight and obese individuals (Andreyeva, Puhl, & Brownell, 2008). Overweight individuals are often portrayed in the media as lazy, weak willed, and self-indulgent (Puhl & Heuer, 2009), and as a drain on the nation's resources (Begley, 2012). Because stigma can be a potent source of social control (Phelan, Link, & Dovidio, 2008), some authors have suggested that stigmatizing obesity may encourage people to lose weight (Bayer, 2008; Callahan, 2013; Heinberg, Thompson, & Matzon, 2001), and policies that utilize potentially stigmatizing elements (e.g., BMI report cards) are becoming more prevalent (Vogel, 2011). Little evidence exists, however, that stigmatizing obesity promotes weight loss. In fact, among overweight individuals, experiencing weight-based stigmatization is associated with greater reports

of maladaptive eating behaviors (e.g., Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006; Puhl & Brownell, 2006), increased motivation to avoid exercise (Vartanian & Novak, 2011; Vartanian & Shaprow, 2008), and poorer weight loss outcomes among adults in a weight-loss program (Wott & Carels, 2010; but see Latner, Wilson, Jackson, & Stunkard, 2009). Furthermore, experimentally activating weight stereotypes *decreased* overweight women's self-efficacy for exercise and dietary control (Seacat & Mickelson, 2009). Collectively, these findings suggest that stigmatizing obesity has negative behavioral consequences that may *increase*, rather than decrease the weight of overweight individuals.

Major, Eliezer, and Rieck (2012) proposed that experiencing, anticipating, or fearing being a target of weight-based discrimination leads individuals who believe they are overweight to experience weight-based *social identity threat* (Major & O'Brien, 2005; Shapiro, 2011; Steele, Spencer, & Aronson, 2002). Weight-based social identity threat stems from a person's awareness or belief that others see him or her as a member of the social category “overweight,” combined with knowledge of the negative stereotypes and devaluation associated with this category. Unlike stigma consciousness, which is an individual difference variable (Pinel, 1999), weight-based identity threat is a situational threat than can be triggered by cues in the environment such as

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meeting a potential date, interviewing for a job, overhearing “fat jokes,” or reading news articles that implicitly or explicitly devalue people who are overweight.

Experiencing social identity threat produces a variety of negative effects, including increased anxiety and physiological stress reactivity (see Schmader, Johns, & Forbes, 2008 for a review). Stress activates the hypothalamic–pituitary–adrenal (HPA) axis and the cardiovascular, metabolic, and immune systems. Because chronic stress is linked to numerous negative health outcomes (McEwen, 1998), frequently experiencing weight-based identity threat could adversely affect health. People experiencing identity threat also engage in self-regulatory strategies to manage that threat, such as *suppressing* activated stereotypes and negative emotions, *compensating* for negative stereotypes by working harder to make a good impression, or *avoiding* domains in which they might be devalued (Schmader et al., 2008; Seacat & Mickelson, 2009; Vartanian & Shaprow, 2008). According to limited resource models of self-control, engaging in actions that require effortful self-control, such as coping with weight-based identity threat, makes demands on limited executive resources that are necessary for self-control. This can cause people to perform more poorly on immediately subsequent tasks that draw on those same limited resources (e.g., Muraven & Baumeister, 2000). For example, when identity threat associated with gender or race is activated, women and minorities subsequently show decreases in working memory and perform more poorly on tasks that require executive control or are intellectually demanding (Richeson & Shelton, 2007; Steele et al., 2002). These effects often occur in the absence of self-reported threat or anxiety, suggesting that they are outside of conscious awareness (Schmader et al., 2008).

Major et al. (2012) activated weight-related identity threat by having overweight and average weight college-aged women give a speech about a topic that is both highly self-relevant and appearance-relevant for young women – why they would make a good date. Half of the women believed their speech was videotaped, and the other half believed it was audiotaped. When women believed that their weight was visible, heavier weight was associated with increased stress, as indicated by greater increases in blood pressure during the speech, and with greater cognitive depletion, indexed by poorer performance on the Stroop color naming test (Engle, 2002). Weight was unrelated to these measures when women believed they were not visible. Thus, this study provided initial evidence that contexts that activate weight-related identity threat can increase stress and decrease executive control resources among overweight individuals.

Ironically, these two consequences of social identity threat – increased stress and decreased executive control – contribute to obesity. Laboratory and naturalistic studies demonstrate that acute and chronic stress increase the drive for sweet and high fat foods, increase food consumption among humans and rats, and lead to weight gain through cortisol-mediated visceral fat deposits (Bjorntor, 2001; Epel, Lapidus, McEwen, & Brownell, 2001; Newman, O'Connor, & Conner, 2007). Furthermore, independent of stress, impairments in self-control can lead to overeating and contribute to weight gain. Avoiding eating tempting but unhealthy food requires executive resources (Baumeister, Vohs, & Tice, 2007), and consumption of calorie-dense food is a widely used measure of self-regulatory depletion. People eat more when they are cognitively depleted (e.g., Vohs & Heatherton, 2000), under cognitive load (Ward & Mann, 2000) or concerned about confirming negative stereotypes (Inzlicht & Kang, 2010). This suggests that experiencing weight stigma may ironically cause overweight individuals to eat *more*, rather than less (Schvey, Puhl, & Brownell, 2011).

#### Current research

We hypothesized that exposure to weight-stigmatizing news messages (vs. non-stigmatizing messages) causes overweight, but not non-overweight, individuals to: (1) consume more calorie-rich snack foods, (2) feel less able to control their diet and (3) be more concerned

about being a target of weight stigma. We also explored whether overweight individuals would display more anxiety than non-overweight individuals when describing a weight-stigmatizing (vs. non-stigmatizing) article, as reflected in their nonverbal behavior.

A secondary goal of this research was to examine objective vs. self-perceived overweight as predictors of weight-based identity threat. This issue is important both theoretically and pragmatically (Seacat & Mickelson, 2009). Unlike social categories such as race and gender where self-classification typically corresponds with others' classification, the social category of “being overweight” has more fluid boundaries. People who are not overweight by objective standards may nonetheless perceive themselves as such; likewise, people who are objectively overweight may not perceive themselves to be overweight (Chang & Christakis, 2003).

Several lines of research suggest that self-perceived overweight, more so than actual overweight, increases vulnerability to experiencing weight-based identity threat. For example, although experiencing weight-based discrimination increases as body mass index (BMI) increases, controlling for BMI does not attenuate the negative relationship of perceived weight stigma with psychological functioning (Hatzenbuehler, Keyes, & Hasin, 2009; Vartanian & Novak, 2011). Furthermore, the difference between actual and desired body weight more strongly predicts reported ill health than does BMI (Muennig, Jia, Lee, & Lubetkin, 2008). Previous experiments examining the effects of exposure to weight stigma on self-regulation have not compared effects of objective vs. self-perceived weight (Major et al., 2012; Schvey et al., 2011). We theorize that even if people are objectively overweight, if they do not believe they are overweight they will not experience weight-stigmatizing messages as identity-threatening, and will thus be unlikely to show self-regulatory depletion in response.

## Method

### Participants

Ninety-three female students at a Western public university participated in return for course credit or \$10.00 ( $M_{\text{age}} = 19.15$  years; Range = 18–32 years). We focused on females because they are stigmatized at lower weights than males (Azarbad & Gonder-Frederick, 2010) and experience more weight-based discrimination in the workplace than men (Roehling, Roehling, & Pichler, 2007). Participants self-identified as White (45.2%), Latina (23.7%), Asian/Pacific Islander (18.3%), African-American (3.2%) and other (9.7%). All had previously rated their weight in an online survey completed at least two days prior to the study on a scale from 1 to 7 (1 = *very thin*, 4 = *average weight*, 7 = *very heavy*;  $M = 4.43$ .  $SD = .95$ ). Overall, 49 women rated themselves as overweight (rated themselves a 5, 6, or 7) and 44 rated themselves as average weight or less (rated themselves a 1, 2, 3 or 4). Participants also completed online measures of self-esteem (Rosenberg, 1965), and dietary restraint (Herman & Polivy, 1980) and indicated whether they were currently dieting for examination as potential covariates. These questions were embedded in a larger questionnaire to disguise the purpose of the study. Participants were not informed that food was involved or that weight was a variable of interest.

At the end of the experiment, participants who consented were weighed and measured and BMI was calculated ( $M = 24.28$ ,  $SD = 4.71$ , Range = 17.36 to 40.18). Two participants in the control condition refused to be weighed and were omitted from analyses involving BMI. According to weight categories established by the National Institutes of Health, 4.3% ( $n = 4$ ) were underweight (BMI < 18.5); 59.1% ( $n = 55$ ) were average weight (BMI  $\geq 18.5$  and < 25), 23.7% ( $n = 22$ ) were overweight (BMI  $\geq 25$  and < 30) and 10.8% ( $n = 10$ ) were obese (BMI  $\geq 30$ ). Perceived weight and BMI were significantly correlated,  $r(91) = .59$ ,  $p < .001$ .

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