Weight Bias and Stigma: Public Health Implications and Structural Solutions

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Weight bias is a widespread form of prejudice that leads to the stigmatization of individuals who are perceived to have excess weight. Several psychological theories have been used to explain weight bias and to understand its negative impact on the mental and physical health of individuals with overweight and obesity. Top-down approaches are needed to reduce weight stigma and its adverse health consequences at the population-level. Potential targets for stigma-reduction policies include weight-based discrimination in the workplace, bullying and discrimination in educational settings, stigma in health care, and stereotypical media portrayals. These proposed policies have strong support from the public and stakeholders and, with further implementation and evaluation, may serve as promising structural interventions for addressing societal weight stigma.

Over the past 30 years, obesity rates have more than doubled in the United States (Segal, Rayburn, & Martin, 2016), and the prevalence of severe obesity continues to rise (Flegal, Kruszon-Moran, Carroll, Fryar, & Ogden, 2016). Recent estimates suggest that 37.7% of U.S. adults and 17% of children and adolescents have obesity (Ogden, Carroll, & Lawman, 2016). Rates are higher among women versus men (40% and 35%, respectively) and highest among black women (57.2%; Flegal et al., 2016). Outside of the United States, rates of obesity and its related health comorbidities are increasing dramatically in both developed and developing countries (Malik, Willett, & Hu, 2013; Ng et al., 2014).

The etiology of obesity—defined as a body mass index (BMI) equal to or greater than 30kg/m²—is complex and goes beyond a simple calculation of “calories in, calories out” (Schwartz et al., 2017). For example, heritability estimates for obesity range from 25% to 50% (Schwartz et al., 2017), highlighting the prominent

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role of genetics as a contributor to weight. Environmental factors, such as socioeco-
omic status, access to grocery stores, and exposure to food marketing, also
have a powerful impact on eating behavior and contribute to weight and obesity-
related health (Story, Kaphingst, Robinson-O’Brien, & Glanz, 2008). Standard
behavioral treatments for obesity produce beneficial but modest weight losses of
5–10% of body weight (Jensen et al., 2014), which is typically less than desired or
expected by patients (Foster, Wadden, Vogt, & Brewer, 1997). Furthermore, due
in part to the body’s biological drive to defend its highest weight or “set point”
(Schwartz et al., 2017), most patients regain some or all of their lost weight in
the long-term (Jeffery et al., 2000). In sum, obesity is caused and maintained by
a multitude of biological and environmental factors that limit the extent to which
individuals can “control” their weight.

Obesity is robustly associated with a breadth of negative health outcomes,
including diabetes, cardiovascular disease, sleep apnea, bodily pain, and certain
cancers (Grover et al., 2015; Jensen et al., 2014; Pi-Sunyer et al., 1998). Persons
with more severe levels of obesity (BMI ≥ 35 or 40kg/m²) may have greater
mortality risk (Flegal, Kit, Orpana, & Graubard, 2012; Grover et al., 2015; Jensen
et al., 2014). In addition, obesity is associated with poorer quality of life and
increased risk for some mental health problems, such as depression (Kolotkin,
Meter, & Williams, 2001; Luppino et al., 2010). While it is recognized that obesity
itself is a disease that impairs health, the stigma of obesity is a prominent factor that
may contribute to and exacerbate some of these associated mental and physical
health problems. This review aims to (1) define weight stigma and describe its
prevalence and consequences; (2) provide theoretical explanations for this form
of stigma and its effects on health; and (3) outline potential policy initiatives for
reducing weight stigma at a structural (or institutional) level, and discuss directions
for further advancement of these initiatives.

Nature and Extent of Weight Stigma

Negative, prejudicial attitudes toward persons with obesity—known as weight
bias—are widely held and socially acceptable (Puhl & Brownell, 2003). Individ-
uals with obesity are commonly stereotyped as lazy, unmotivated, unintelligent,
sloppy, and lacking willpower (Puhl & Brownell, 2003). Additionally, these indi-
viduals are often devalued, derogated, and ostracized in society (i.e., stigmatized)
(Puhl & Brownell, 2003). For example, studies spanning back to the 1960s demon-
strate that children, when presented with figure drawings of children with various
health conditions and disabilities, rate the child with obesity as the least liked (Latt-
er & Stunkard, 2003). The social devaluation of persons with obesity extends into
adulthood, such as through rejection of women with obesity in choosing romantic
partners (Chen & Brown, 2005), as well as verbal abuse from strangers in public
settings (Lewis et al., 2011).
As rates of obesity have risen in recent decades, so have rates of unfair treatment due to weight, or *weight-based discrimination* (Andreyeva, Puhl, & Brownell, 2008). Weight discrimination may refer to a broad range of experiences from minor, everyday instances of differential treatment, or “microaggressions” (e.g., being treated with less respect than others in subtle ways), to being treated unjustly in specific contexts (e.g., being denied employment). These experiences may be considered examples of “enacted stigma,” or the behavioral manifestation of negative societal attitudes directed toward someone with a devalued identity (Earnshaw & Chaudoir, 2009). Discrimination can be assessed: observationally (e.g., by evaluating trends in economic or employment data); through experimental studies assessing participants’ behavior toward stigmatized persons; or from the stigmatized person’s perspective (i.e., perceived discrimination). A recent meta-analysis estimated that, depending on the severity of obesity, 20–45% of U.S. women and 6–28% of U.S. men with obesity report experiencing weight discrimination (Spahlholz, Baer, Konig, Riedel-Heller, & Luck-Sikorski, 2016). Weight discrimination and other forms of enacted stigma occur across multiple settings, including interpersonal relationships and public settings. This review will focus on four institutional settings in which weight stigma occurs: employment, education, health care, and the media.

**Discrimination in Employment Settings**

Meta-analyses consistently show that weight bias negatively impacts job-related outcomes, such as hiring decisions, salary, and promotability ratings (Roehling, Pichler, & Bruce, 2013; Rudolph, Wells, Weller, & Baltes, 2009; Vanhove & Gordon, 2014). Experimental evidence suggests that job applicants with overweight and obesity receive lower ratings in perceived leadership and predicted success (O’Brien, Latner, Ebner, & Hunter, 2013) and are less likely to be recommended for hiring or for promotion to a supervisory role (Giel et al., 2012; Kutcher & Bragger, 2004). For example, in one study, 127 German human resource professionals viewed photographs of six hypothetical job candidates (two of which had obesity) and were asked to, among other tasks, nominate three candidates for a supervisory position. Results showed that candidates with obesity were 4.5 times less likely than lower weight candidates to be chosen for a supervisory role (Giel et al., 2012). Additionally, even when controlling for sociodemographic factors, persons with obesity suffer a “wage penalty” of an estimated 3.4% less for men with obesity (compared to men with BMIs < 30 kg/m²), and 6.1% less for women with obesity (Baum & Ford, 2004). Persons with obesity also have higher unemployment rates overall (even when considering educational attainment) and spend fewer years employed (Morris, 2007; Paraponaris, Saliba, & Ventelou, 2005). While these findings can partially be attributed to disability or other health
problems, discrimination also likely accounts for some of these employment disparities (Baum & Ford, 2004).

These negative employment outcomes may be attributable to stereotypes that employees with obesity are lazier, less conscientious, less hard-working, less outgoing, more emotional, and less likely to get along with others than employees of lower body weights (Roehling, Roehling, & Odland, 2008). Weight may also interact with other personal characteristics to affect job-related outcomes. For example, some but not all meta-analyses find that weight may affect job-related outcomes more so for women than men (Roehling, Pichler, et al., 2013; Spahlholz et al., 2016; Vanhove & Gordon, 2014), in part because women experience weight discrimination at lower body weights than men (Morris, 2006). For example, in an analysis of the National Survey of Midlife Development in the United States, prevalence estimates for workplace discrimination ranged from 9.6% to 27.7% for women with obesity, versus 4.1% to 12.1% for men with obesity (Roehling, Roehling, & Pichler, 2007). Persons with higher levels of obesity (class II or class III; BMIs ≥ 35 or 40 kg/m²) face greater weight-based workplace discrimination than persons with class I obesity (30 ≤ BMI < 35 kg/m²; Spahlholz et al., 2016).

Bullying and Discrimination in Educational Settings

Across gender and race, youth with overweight and obesity are more likely than nonoverweight youth to be victims of bullying (van den Berg, Neumark-Sztainer, Eisenberg, & Haines, 2008; van Geel, Vedder, & Tanilon, 2014). In a survey of adults in the United States, Iceland, Australia, and Canada, weight was perceived to be the leading reason for youth bullying (Puhl, Latner, O’Brien, Luedicke, Forhan, et al., 2016). This finding is consistent with results from surveys of parents and peers who witness bullying (Puhl, Luedicke, & DePierre, 2013; Puhl, Luedicke, & Heuer, 2011). Weight-based victimization can occur in the form of verbal teasing, social exclusion, being the target of gossip and rumors, cyberbullying, or physical aggression (Puhl, Peterson, & Luedicke, 2013c; Puhl, Luedicke, et al., 2011). Sources of weight stigma in school settings include both peers and educators (Puhl, Peterson, & Luedicke, 2013c; Puhl & Brownell, 2006). In particular, studies have shown heightened levels of implicit (or unconscious) and explicit weight bias among physical education (PE) teachers (Lynagh, Cliff, & Morgan, 2015; O’Brien, Hunter, & Banks, 2007).

Experiences of weight-based teasing and bullying may partially account for observed educational disparities related to weight status. One survey of over 1,000 parents found that children who had experienced weight-based teasing had poorer academic performance, and teasing mediated the relationship between weight status and academic performance (Krukowski et al., 2009). Girls are more likely than boys to be teased or bullied for their weight (Goldfield et al., 2010;
Tang-Peronard & Heitmann, 2008) and thus are at greater risk for the negative academic consequences associated with weight-based peer victimization (Crosnoe, 2007). Discrimination from educators may also account for educational disparities. For example, a longitudinal study of a large, nationally representative sample found that children who gained weight from fifth to eighth grade received reductions in teachers’ ratings of their reading and math abilities over time, despite no changes in standardized test scores (Kenney, Gortmaker, Davison, & Austin, 2015).

**Stigma in Health Care**

Weight-biased attitudes have been documented across a wide range of health care professionals, including physicians, nurses, psychologists, dietitians, health care trainees (e.g., medical students), and even clinicians specializing in eating disorders and obesity (Budd, Mariotti, Graff, & Falkenstein, 2011; Davis-Coelho, Waltz, & Davis-Coelho, 2000; Phelan et al., 2014; Puhl, Latner, King, & Luedicke, 2014; Swift, Hanlon, El-Redy, Puhl, & Glazebrook, 2013; Tomiyama et al., 2015). Health care professionals report having less respect for patients with obesity and believing that they are unmotivated, lazy, and unlikely to follow treatment recommendations (Phelan, Burgess, et al., 2015; Puhl, Phelan, Nadglowski, & Kyle, 2016). Due to these negative beliefs, providers may spend less time with patients with obesity, engage in less “patient-centered communication” (e.g., less rapport-building), and are more reluctant to perform certain screenings or discuss health with patients (Phelan, Burgess, et al., 2015; Puhl, Phelan, et al., 2016). In survey research, patients report feeling disrespected by unsolicited advice to lose weight (e.g., when a patient seeks medical advice for an unrelated problem), inappropriate or derogatory comments about their weight, and blaming or dismissive statements regarding the challenges of weight loss (Amy et al., 2006; Puhl, Moss-Racusin, Schwartz, & Brownell, 2008). Patients may also feel stigmatized if the health care office does not have adequately sized equipment, such as high-capacity scales, wide-based chairs, and properly-sized gowns and blood pressure cuffs (Amy et al., 2006; Kaminsky & Gadaleta, 2002).

Another form of weight discrimination that occurs at the structural level of health care involves insurance coverage. Obesity screenings and counseling are covered under the Patient Protection and Affordable Care Act (ACA; Wilson, Kyle, Nadglowski, & Stanford, 2017). However, empirically-supported obesity treatments—including medical weight management programs, medication, and bariatric surgery—are not considered “essential benefits” under the ACA, and many states provide minimal coverage for these treatments (Wilson et al., 2017; Yang & Pomeranz, 2015). Although the ACA has provisions for workplace wellness programs (Wilson et al., 2017), wellness incentives (such as rewards or penalties based on BMI) are based on the assumption that weight is entirely within an individual’s control. These programs unfairly punish those who cannot lower
their BMI to a “normal” range (Cawley, 2014). Thus, insurance incentives and coverage are rooted in beliefs about the controllability of weight and discriminate more against treating obesity than against other chronic diseases.

**Stigma in the Media**

The media perpetuate weight bias by idealizing thinness and underrepresenting and stereotyping individuals with higher body weights (Ata & Thompson, 2010). The majority of books, movies, and television shows geared toward children, adolescents, and adults portray characters with obesity as unattractive, unhealthy, unhappy, or unpopular (Ata & Thompson, 2010). News coverage of obesity frequently includes incorrect or catastrophizing information about obesity, including the narrative that weight is within an individual’s control (Hilbert & Ried, 2009). The majority of images and video content used in online news portrays individuals with obesity in an unflattering, dehumanizing manner (e.g., headless close-ups of body parts with ill-fitting clothing) and engaging in stereotypical unhealthy behaviors (e.g., eating fast food; Heuer, McClure, & Puhl, 2011; Puhl, Peterson, DePierre, & Luedicke, 2013). Social media forums such as Twitter and Facebook contain an overwhelming number of “fat jokes” and weight-derogatory comments, including instances of verbal aggression and cyber-bullying (Brun, McCarthy, McKenzie, & McGloin, 2014; Chou, Prestin, & Kunath, 2014). Additionally, television shows, advertisements, and public health campaigns that focus on weight loss and obesity prevention also contain weight-stigmatizing content that perpetuates the myth that weight is entirely within an individual’s control (Domoff et al., 2012; Geier, Schwartz, & Brownell, 2003; Puhl, Luedicke, & Peterson, 2013; Puhl, Peterson, & Luedicke, 2013d).

Studies show that exposure to weight-stigmatizing media content increases weight-biased attitudes, including desire for social avoidance and endorsement of negative stereotypes (Pearl, Puhl, & Brownell, 2012). Stereotypical media images also increase implicit bias in the general public (Carels, Hinman, et al., 2013; Hinman, Burmeister, Kiefner, Borushok, & Carels, 2015). Children who are exposed to high levels of mass media (including television, magazines, and video games) report greater dislike of peers with overweight and obesity (Latner, Rosewall, & Simmonds, 2007). Weight-stigmatizing media may also affect public support for weight-discriminatory medical policies. One study that assessed responses to a discriminatory proposal to deny women with obesity fertility treatments found that, when presented with equivalent information about the policy, participants who viewed a weight-stigmatizing image were more likely to support and recommend the discriminatory policy than were participants who viewed a more positive image (Brochu, Pearl, Puhl, & Brownell, 2014). Thus, stigmatizing media portrayals may contribute to and further fuel weight-based prejudice and discrimination.
Psychological Explanations for Weight Bias and Stigma

Several psychological theories have been proposed to explain the causes of prejudice and stigma. Below is a summary of theories that have been applied and tested specifically in the context of weight. Identifying the psychological underpinnings of weight bias and stigma is critical to developing and testing interventions to prevent and reduce this form of prejudice.

Attribution Theory

Attributions are causal inferences used to explain human behavior (see Crandall & Reser, 2005; Heider, 1958; Kelley & Micehla, 1980). People are motivated to understand why others act the way they do, and why people succeed or fail. Attributions provide reasons for these behaviors and outcomes. Attributions may be internal (e.g., personality traits) or external (e.g., favorable or unfavorable circumstances; Heider, 1958). For example, getting an A on a test in school may be attributed to being hardworking and intelligent (internal), or to the test being too easy (external). According to Weiner (1995), people evaluate how much an individual is personally responsible for causing a success or failure based, in part, on the perceived controllability of the outcome. If a failure is perceived to have been within an individual’s control, a negative moral evaluation is made, often in the form of blame.

Controllability. Several stigmatized groups, such as persons with addiction or HIV/AIDS, have been examined within the framework of attribution theory (Weiner, Perry, & Magnusson, 1988). Crandall (1994) applied this theory to weight stigma, asserting that when weight is viewed as controllable, individuals with obesity are perceived as “personally responsible” and blamed for their weight. Crandall and others suggest that several ideological and cultural factors—such as individualistic cultures, conservative political ideology, and the general notions that “hard work pays off” and “people get what they deserve”—may lead people to view weight as controllable and people with obesity as “at fault” for their weight status (Crandall & Reser, 2005).

Despite scientific evidence that weight is influenced by complex biological and environmental factors (Schwartz et al., 2017), research has consistently demonstrated that the public views weight as within an individual’s control (Puhl & Brownell, 2003). Obesity is commonly attributed to a failure of individual willpower and personal responsibility (Puhl & Brownell, 2003). These attributions are strongly linked to unfavorable character traits—such as laziness, sloppiness, lack of discipline, and incompetence—leading to negative stereotypes and harsh societal attitudes toward individuals with obesity (Hilbert, Rief, & Braehler,
The link between controllability attributions and weight-biased attitudes has been documented cross-nationally (Puhl, Latner, O’Brien, Luedicke, Danielsdottir, & Forhan, 2015) and in children as young as preschool age (Musher-Eizenman, Holub, Miller, Goldstein, & Edwards-Leeper, 2004). Of note, people with higher body weights also attribute weight to personal responsibility and hold weight-biased attitudes (Pearl & Lebowitz, 2014; Schwartz, Vartanian, Nosek, & Brownell, 2006), illustrating the strength and pervasiveness of societal blame for obesity.

Controllability attributions, and associated characteristics ascribed to individuals due to these attributions (e.g., laziness), contribute to weight-based discrimination (Weiner et al., 1988). For example, in a series of experimental studies, Sartore and Cunningham (2007) assessed perceptions of job applicants for a position as a fitness professional among health and kinesiology students. Findings showed that, compared to unqualified, thin job applicants, qualified job applicants with overweight were ascribed more negative attributions (e.g., undisciplined and lazy), were more likely to be perceived as being a “poor fit” for the job, and were less likely to be recommended for hiring (Sartore & Cunningham, 2007). Controllability attributions also reduce support for obesity-related health campaigns and initiatives. In other words, when obesity is framed as an issue of “personal responsibility,” lawmakers and the public are less likely to support structural-level policies (such as taxing sugar-sweetened beverages) intended to prevent and reduce obesity (Barry, Brescoll, Brownell, & Schlesinger, 2009; Brownell et al., 2010; Pearl & Lebowitz, 2014).

Additionally, studies suggest that providing information about “successful” weight loss strengthens weight-controllability beliefs and increases weight-biased attitudes (Blaine, DiBlasi, & Connor, 2002; Geier et al., 2003). For example, participants who watched the weight-loss reality show The Biggest Loser (in which contestants lose massive amounts of weight through extreme dieting and grueling fitness challenges) reported stronger weight-controllability beliefs, more “personal responsibility” attributions (e.g., laziness), and greater dislike of individuals with obesity in comparison to participants who did not watch the show (Domoff et al., 2012; Yoo, 2013). Current treatments for obesity—such as bariatric surgery—are also stigmatized when success is not attributed to internal control (Vartanian & Fardouly, 2013). Several studies have documented negative attitudes toward persons who lose weight via surgery in comparison to those who lose weight through diet and exercise (Fardouly & Vartanian, 2012; Mattingly, Stambush, & Hill, 2009; Vartanian & Fardouly, 2013). This is likely due to the perception that surgery requires less effort than behavioral weight loss strategies (Vartanian & Fardouly, 2014). Altogether, the body of research on weight attributions highlights that individuals with obesity are blamed for their weight due to its perceived controllability, and weight loss alone does not necessarily reduce stigma.
Physical attractiveness. Perceived physical attractiveness may further contribute to the negative personality attributes assigned to individuals with obesity (Puhl & Brownell, 2003). According to the “what is beautiful is good” stereotype, positive personal attributes are assigned to people who are perceived as attractive (Eagly, Ashmore, Makhijani, & Longo, 1991). In other words, people assume that someone who is “good-looking” must also have “good” behaviors and outcomes, particularly with regards to social competence and, to some extent, intellectual competence (Eagly et al., 1991). Due to societal idealization of thinness, individuals with excess weight are commonly perceived as unattractive, unpopular, and incompetent (Puhl & Brownell, 2003). Thus, in addition to controllability attributions, the physical attractiveness stereotype may account for some of the negative social attributes assigned to persons with obesity.

Evolutionary Theory of Pathogen Avoidance

Goffman (1963) described an “abomination of the body” (i.e., physical deformity) as one type of distinguishing mark that denotes a socially-deviant (or stigmatized) identity. Obesity can be conceptualized as part of this category of stigma, since it is an observable physical attribute perceived as undesirable and/or to be a sign of physical illness. The evolutionary survival mechanism to avoid contagious pathogens has been proposed as an explanation for negative reactions to and avoidance of persons with obesity (see Klaczynski, 2012). According to this theory, obesity may be unconsciously perceived as a marker of disease, consequently activating a “pathogen detection” system that leads people to physically avoid persons with obesity in order to prevent “infection.” Automatic negative emotional responses to perceived infectious disease, such as disgust, may trigger the motivation to avoid these individuals (Oaten, Stevenson, & Case, 2009). The narrative of obesity as a marker of disease may be internalized due to widespread knowledge of the health problems associated with obesity, as well as studies warning of the “social contagion” of obesity (Christakis & Fowler, 2007). Klaczynski (2012) noted that “false positives” of detecting pathogens are considered evolutionarily adaptive but result in unwarranted avoidance and stigmatization of people who are disease-free.

Park, Schaller, and Crandall (2007) tested this theoretical model in two studies with undergraduate students. Findings suggested that participants who were more concerned about pathogen contagion (assessed by the Perceived Vulnerability to Disease scale) in general had more negative weight-biased attitudes (assessed by the Anti-Fat Attitudes scale), especially when they saw a visual depiction of a person with obesity. Furthermore, when pathogen contagion was made salient through a slide show on germs and infections (compared to slide shows on accidents and hard work), stronger obesity-disease associations were found by the Implicit Association Test (Park et al., 2007).
As noted above, the emotion of disgust is considered evolutionarily adaptive in response to the threat of disease and contagion, as it motivates avoidance of the pathogen (Oaten et al., 2009). Numerous studies have found associations between disgust and weight-biased attitudes (Fisher, Fincher, Hahn, DeBruine, & Jones, 2013; O’Brien et al., 2013; Vartanian, 2010), including desire for social distance (Lieberman, Tybur, & Latner, 2012; Vartanian, Trewartha, & Vanman, 2016). Some researchers have made a distinction between disease-related disgust versus moral or sexual disgust. Moral or sexual disgust may be related more to controllability attributions or physical attractiveness evaluations than pathogen avoidance (Fisher et al., 2013; Lieberman et al., 2012; Vartanian, 2010). Of note, the associations between obesity, disease, and disgust may be specific to modern society, in comparison to other historical and cultural contexts in which higher body weight has been viewed as a sign of good health or status (Jutel, 2006).

**Social Consensus Theory**

Any given individual’s beliefs are influenced by the beliefs of those around him or her (see Sechrist & Stangor, 2005). In the context of stigma, research has consistently demonstrated that people tend to change their attitudes in response to information about others’ attitudes and the social acceptability of the stigma. The tendency to compare and conform one’s beliefs to others’ may be driven by the desire to validate one’s belief, the need for acceptance, or motivation to view oneself as similar to others, among other reasons. This motivation may be particularly high if one is comparing his or her beliefs to someone of a high-status group (Puhl & Brownell, 2003).

Social consensus theory has been proposed as an explanation for weight bias and stigma’s high level of social acceptability (Puhl & Brownell, 2003). Studies show that people tend to express stronger negative attitudes toward and tease or bully individuals with obesity more than people of other stigmatized groups, including racial, sexual, and religious minorities (Brochu & Esses, 2011; Phelan et al., 2011; Puhl, Luedicke, et al., 2011). Among other reasons (such as differences in controllability attributions), the relatively heightened level of weight bias could occur because prejudice toward other groups is less socially acceptable.

The pervasiveness of weight-stigmatizing media portrayals may perpetuate perceptions of social acceptability, regardless of the actual social consensus about whether this form of stigma is acceptable (Ata & Thompson, 2010; Puhl & Brownell, 2003). Social consensus theory could also partially explain why individuals with obesity who experience weight-based discrimination may internalize blame and shame, if they believe that people around them generally have negative attitudes toward them (Farrow & Tarrant, 2009). One series of studies showed reductions in weight bias by providing information about others’ favorable attitudes toward persons with obesity (Puhl, Schwartz, & Brownell, 2005), although
another study found no effects of manipulating social consensus feedback (Ciao & Latner, 2011), highlighting the need for more research in this area.

**Health Consequences of Weight Stigma**

Weight stigma (particularly enacted stigma in employment and educational settings) has a negative impact on socioeconomic opportunities for individuals with obesity, which can ultimately affect health (Hatzenbuehler, Phelan, & Link, 2013). Additionally, weight-biased attitudes reduce support for public policies aimed at preventing and reducing obesity and its comorbidities (Brownell et al., 2010), thus negatively affecting public health. Furthermore, a growing body of research suggests that weight stigma has direct, adverse consequences for mental and physical health. Table 1 summarizes the evidence of adverse health effects associated with different forms of weight stigma discussed in this review (for recent reviews of health consequences, see Papadopoulos & Brennan, 2015; Phelan, Burgess, et al., 2015; Puhl & Suh, 2015).

**Mental and Physical Health**

Overall, weight stigma is associated with poorer health-related quality of life (Latner, Barile, Durso, & O’Brien, 2014; Pearl, White, & Grilo, 2014; Schafer & Ferraro, 2011). Adults with overweight/obesity who experience weight discrimination are more than twice as likely to have a psychiatric diagnosis—including depression, anxiety, or a substance use disorder—than individuals with overweight/obesity who do not report experiencing weight discrimination (Hatzenbuehler, Keyes, & Hasin, 2009). Weight discrimination may in fact be a stronger predictor of psychological distress than other forms of enacted stigma, such as

**Table 1. Contributions of Weight Stigma to Impaired Obesity-Related Health: Summary of Current Evidence**

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<th>Physiological stress</th>
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discrimination due to race or sex (Schmitt, Branscombe, Postmes, & Garcia, 2014). Experiences of weight-based teasing or bullying in youth predict suicidal ideation and attempts, along with body dissatisfaction, low self-esteem, and increased risk of eating disorders (Eisenberg, Neumark-Sztainer, & Story, 2003; Haines, Neumark-Sztainer, Eisenberg, & Hannan, 2006).

Weight-based discrimination, teasing and bullying, perceived stigma from health care practitioners, and exposure to weight-stigmatizing media all have negative effects on physical health as well (Puhl & Suh, 2015). Most studies on the adverse effects of weight stigma on health statistically control for BMI and other psychological and physical health variables, emphasizing that weight stigma has detrimental effects on health above and beyond the effects of obesity. For example, studies find that, even after controlling for BMI and relevant demographics, youth who report experiencing weight-based teasing have higher blood pressure, poorer self-rated health, poorer physical fitness, and reduced self-efficacy to engage in physical activity than those who do not report such teasing (Greenleaf, Petrie, & Martin, 2014; Rosenthal et al., 2015). Similarly, adults with overweight/obesity who report experiences of weight discrimination have poorer management of chronic disease (such as dysregulation of blood sugar among people with type 2 diabetes) and increased functional disability (e.g., reduced mobility) in comparison to those with overweight/obesity who do not report such experiences (Potter et al., 2015; Schafer & Ferraro, 2011). Furthermore, in two representative national U.S. samples, there was a nearly 60% increase in mortality risk among individuals who reported perceiving weight discrimination in their everyday life, even after controlling for factors such as weight status, subjective health, disease burden, depression, and smoking history (Sutin, Stephan, & Terracciano, 2015).

Perceived weight discrimination is also associated with more weight gain over time (Jackson, Beeken, & Wardle, 2014). Gudzune, Bennett, Cooper, and Bleich (2014) found that, among patients with obesity whose primary care providers discussed weight loss, patients who felt “judged” by their provider because of their weight were just as likely to attempt weight loss as patients who did not feel judged, but they were less likely to achieve significant weight loss. Effects of weight stigma on weight and weight loss may be attributable to its impact on eating and exercise behaviors (Puhl & Suh, 2015; Vartanian & Porter, 2016). For example, in a sample of almost 2,500 women recruited from a national weight-loss support group, and in a second, smaller sample of men and women from the same group, 80% of participants reported eating as a coping strategy in response to perceived weight stigma (Puhl & Brownell, 2006).

Biosocial Models of Health Consequences

Stigma is broadly understood to be detrimental to the health of those who are targeted (Hatzenbuehler et al., 2013; Pascoe & Richman, 2009). A
prominent model for explaining the observed health disparities of stigmatized groups is that of "minority stress" (Meyer, 2003; Williams, Yu, Jackson, & Anderson, 1997). Minority stress refers to the heightened psychological and/or physiological stress that accompanies living with a socially stigmatized identity (Lick, Durso, & Johnson, 2013).

Social identity threat. When people are aware of negative stereotypes about a group to which they belong (social identity), and this awareness becomes heightened in a specific situation, they may feel at risk for being devalued, disparaged, or treated unfairly by others (Major & O’Brien, 2005). Weight-based social identity threat occurs when an individual is concerned about being perceived or treated negatively due to his or her weight in a specific situation (Hunger, Major, Blodorn, & Miller, 2015). Situations that may trigger social identity threat include exposure to or personal experiences of weight-based stigma, or situations in which weight-based rejection is anticipated (Hunger et al., 2015). This threat is physiologically stressful and requires effort to regulate its associated negative thoughts and emotions. As a result of this strenuous experience, cognitive resources such as executive functioning (e.g., inhibition) may be depleted (Major & O’Brien, 2005). Additionally, individuals may respond by changing their behaviors to avoid or escape social identity threat, such as by trying to lose weight through extreme dieting practices (Hunger et al., 2015; Major & O’Brien, 2005).

Social identity theory may account for some of the observed associations between weight stigma and poor health outcomes. For example, studies showing associations between weight stigma and physiological markers of stress—including cortisol, F2-isoprostanes, C-reactive proteins, and allostatic load—are consistent with this model’s assertion that experiencing weight stigma is stressful (Jackson, Kirschbaum, & Steptoe, 2016; Sutin et al., 2014; Tomiyama et al., 2014). Experimental studies in which women with overweight were randomly assigned to be exposed to weight stigma (by watching stigmatizing media clips, reading about weight discrimination, or being stigmatized by a research confederate) showed increased cortisol levels, greater caloric consumption, and reduced perceived dietary control in response to the threat-inducing encounter (Himmelstein, Belsky, & Tomiyama, 2015; Major, Hunger, Bunyan, & Miller, 2014; Schvey, Puhl, & Brownell, 2011). These effects are all significant over and above the effects of weight and related health factors, and the stress-related outcomes of these studies are risk factors for obesity and its comorbidities. Thus, whether through biochemical or behavioral pathways, the stress of experiencing stigma leads to the perpetuation of obesity and its comorbidities (Tomiyama, 2014).

Evidence also supports the hypothesis that the anticipation of weight stigma is stressful. Experimental studies in which women with overweight were put in situations in which they anticipated weight-based rejection (versus situations with no reason to anticipate weight-based rejection) showed responses of higher blood
Weight Stigma

pressure, reduced executive control functioning, increased self-reported stress, reduced self-esteem, and increased shame and guilt (Blodorn, Major, Hunger, & Miller, 2016; Major, Eliezer, & Rieck, 2012). Weight-based rejection sensitivity (i.e., proneness to perceiving rejection due to one’s weight) longitudinally predicts psychological distress, disordered eating, and worse overall health (Brenchley & Quinn, 2016).

Additionally, social identity threat may account for findings that individuals with obesity avoid settings in which they may anticipate stigma (such as fitness or health care settings; Phelan, Burgess, et al., 2015; Schvey et al., 2017). Avoidance of health care settings in particular may contribute to poor health by delaying preventive screenings or interventions at early stages of disease, thus increasing the likelihood of disease progression (Phelan, Burgess, et al., 2015). Furthermore, the desire to “escape” social identity threat may account for the adoption of unhealthy dieting practices (Vartanian & Porter, 2016), including self-induced vomiting and laxative abuse in adolescents who are bullied or teased for their weight (Haines et al., 2006).

Stereotype threat. Stereotype threat refers to the process by which knowledge of stereotypes about one’s own group, particularly in a domain that is highly self-relevant, affects performance of stereotype-relevant behaviors (Steele, 1997). In other words, when a group’s stereotype is made salient (e.g., “Women are bad at math”), performance suffers for group members whose identities may be threatened by that stereotype (e.g., an academically-oriented female student performs poorly on a math test), thus confirming the stereotype. As with the broader construct of social identity threat, performance is believed to suffer due to stress—specifically related to pressure to disprove the stereotype—which consequently depletes cognitive-emotional resources (Steele, 1997).

Motivation to disprove weight stereotypes may be high, and stereotype threat effects may be particularly strong for persons with overweight/obesity. Members of this stigmatized group are strongly aware of negative weight stereotypes, yet they generally do not identify with other individuals with overweight/obesity (Carels, Domoff, et al., 2013). Given that common weight stereotypes pertain to health behaviors (e.g., overeating and being sedentary), stereotype threat may account for some of the observed impairments to health behaviors associated with weight stigma. One study found that adults with overweight who were primed with weight-related stereotypes ordered more calories in a hypothetical restaurant scenario than those who were not primed with weight stereotypes (Brochu & Dovidio, 2014). The authors suggested that the stress of confirming stereotypes about eating may have undermined participants’ self-control, thus impairing their ability to select healthy foods. Stereotype threat may also reduce exercise motivation in children with overweight (Li, Lwin, & Jung, 2014). When activated in health care settings, stereotype threat could lead to patient disengagement, impaired physician-patient...
communication, and reduced adherence to treatment, although these effects have not been directly tested in patients with obesity (Burgess, Warren, Phelan, Dovidio, & vanRyn, 2010).

Internalization of weight bias. Due to the pervasiveness of weight-based stereotypes and societal devaluation of persons with obesity (e.g., in media portrayals), some individuals with higher body weight internalize these negative stereotypes and attitudes. Internalized stigma generally refers to: the awareness of negative stereotypes about one’s group; agreement with those stereotypes; and application of the stereotypes to oneself, leading to self-devaluation or self-directed stigma (Corrigan, Larson, & Rusch, 2009). Weight bias internalization (WBI) specifically refers to persons with obesity applying negative weight stereotypes (e.g., laziness) to themselves and negatively evaluating themselves due to their weight. For example, Crocker, Cornwell, and Major (1993) randomly assigned women of varying weight statuses to receive positive or negative feedback from a potential male romantic partner. Women with obesity who received negative feedback tended to attribute this rejection to their weight. However, rather than externalizing their rejection to the partner’s prejudice (a process associated with self-protective benefits in other stigmatized groups), these women seemed to internalize the rejection, as illustrated by lower ratings of mood and appearance self-esteem. The authors hypothesized that these women may have blamed themselves for their rejection due to the belief that weight is controllable, thus exemplifying the internalization of weight-biased attitudes.

Evidence of the relationship between WBI and poor mental health is robust, with associations between WBI and depression, anxiety, poor self-esteem, body dissatisfaction, and eating disorder pathology found in community and treatment-seeking samples of persons with obesity (Papadopoulos & Brennan, 2015). WBI is also associated with poor health behaviors, including binge eating and reduced physical activity (Durso & Latner, 2008; Mensinger & Meadows, 2017). Some studies suggest poorer weight loss treatment outcomes for individuals with higher levels of WBI (Lent et al., 2014; Puhl, Quinn, Weisz, & Suh, 2017), as well as reduced overall health-related quality of life (Latner et al., 2014; Pearl et al., 2014).

These effects may be explained by prior research on other forms of stigma (e.g., mental illness) showing that internalized stigma is associated with reduced self-efficacy (i.e., confidence in one’s ability to pursue goals) due to the proposed “why try” effect (Corrigan et al., 2009; Corrigan, Watson, & Barr, 2006). This theory purports that, when people feel badly about themselves and believe that they are inadequate compared to others, they lose hope and motivation that they can succeed and consequently stop trying. Thus, when people with obesity apply negative weight stereotypes to themselves (e.g., that they are lazy and lack willpower), they feel less confident that they can eat healthfully and exercise, leading them to give up trying (Hubner et al., 2015; Pearl, Puhl, & Dovidio, 2015).
Additionally, it is possible that WBI may be a form of chronic stress that triggers the affective and physiological responses described above, which contribute to poor health. A recent study found that individuals with obesity and high WBI, compared to those with obesity and low WBI, were more likely to meet criteria for metabolic syndrome (defined by a cluster of cardiometabolic risk factors). Participants with high WBI also had particularly high triglyceride levels. These findings could be accounted for by poor health behaviors and/or biochemical stress (Pearl et al., 2017). Some studies have suggested that WBI may mediate or moderate the effects of enacted weight stigma on mental and physical health outcomes (Latner et al., 2014; O’Brien et al., 2016; Pearl & Puhl, 2016), supporting the hypothesis that internalized stigma could be a mechanism for impaired health. For example, in an online study of 177 women with overweight/obesity, WBI, but not reported experiences of weight stigma, was associated with reduced motivation, self-efficacy, and engagement in physical activity (Pearl, Puhl, & Dovidio, 2015). WBI also partially mediated the relationship between weight-stigmatizing experiences and engagement in physical activity. Cognitive interpretation of weight-stigmatizing experiences may determine whether or not weight bias becomes internalized (Pearl & Dovidio, 2015; Pearl & Puhl, 2016), but more research is needed to identify risk and protective factors for WBI.

Proposed Policies to Prevent and Reduce Weight Bias and Stigma

As reviewed above, weight bias and stigma are insidious due to strongly-held attributions, implicit associations between appearance and disease, and messages that this form of prejudice is socially acceptable. The threat of being socially stigmatized, along with acute instances of stigmatization (e.g., discrimination), is stressful and impairs the health of individuals with obesity. Efforts to change individual attitudes to reduce bias and prevent stigmatization are worthwhile, and interventions to help those targeted by weight stigma cope effectively are warranted. However, given the pervasive nature of weight bias, policy interventions encompassing legislation, school and workplace policies, health care initiatives, and media practices are needed to reduce bias and enact changes in the treatment of individuals with obesity at the societal level. Table 2 summarizes the proposed policies discussed below and highlights directions for future research.

Legislation

Currently, individuals with obesity in the United States have little legal protection against weight-based discrimination. Michigan is the only state with a law prohibiting discrimination due to weight, along with the cities of: San Francisco, CA; Santa Cruz, CA; Binghamton, NY; Urbana, IL; Madison, WI; and the District of Columbia (Suh, Puhl, Liu, & Millici, 2014). Legal protection against
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<tr>
<td>Legislation prohibiting discrimination/bullying</td>
<td>• Strong public support.</td>
<td>• Do weight-specific laws reduce instances of discrimination/bullying?</td>
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<td>• State-level law may diminish overt weight discrimination for women.</td>
<td>• Will targets of discrimination/bullying seek legal recourse?</td>
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<td>• Anti-bullying laws that do not enumerate “weight” may not prevent weight-based bullying.</td>
<td>• Do laws reduce mental and physical health disparities for individuals with obesity?</td>
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<td>Anti-bullying policies; Weight bias training for educators and employers</td>
<td>• Strong support from parents, educators, and persons with obesity.</td>
<td>• Does incorporating weight into anti-bullying curricula reduce weight-based bullying?</td>
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<td>• Do school trainings increase teacher intervention with weight-based bullying?</td>
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<td>• Do workplace weight bias trainings reduce discrimination and create an atmosphere of respect?</td>
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<td>Training for health care professionals; regulations for physical environment of health care settings</td>
<td>• Role-play with standardized patients reduces medical students’ weight bias and increases treatment confidence.</td>
<td>• Does incorporating more obesity education into medical school curricula reduce weight bias in the long-term?</td>
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<td>• Emphasizing biological and environmental causes of obesity reduces blame.</td>
<td>• Does improving patient-provider communication about weight lead to better patient health outcomes?</td>
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<td>• Patients report avoiding health care due to inappropriately-sized equipment.</td>
<td>• Are patients more likely to utilize preventive health services if the office environment is more inclusive/comfortable?</td>
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<td>Media pledge to discontinue use of weight-stigmatizing images, news content, and public health messages</td>
<td>• Counter-stereotypical images and news stories improve public attitudes, and the public supports use of positive images.</td>
<td>• What are the long-term effects on weight bias and policy support of frequent exposure to counter-stereotypical images/news?</td>
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<td>• Positive public health campaigns elicit greater motivation for healthy behaviors.</td>
<td>• How can public health campaigns best promote health behaviors without perpetuating weight stigma?</td>
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discrimination due to weight is lacking in countries outside of the United States as well (Puhl, Latner, O’Brien, Luedicke, Danielsdottir, & Salas, 2015).

The laws enacted and proposed to prohibit weight discrimination include both civil rights and disability laws. For civil rights laws, proposals call for the addition of “weight” as a protected characteristic (alongside sex, race, color, religion, and national origin) to state-level antidiscrimination laws, or in a federal statute to supplement the Civil Rights Act of 1964 (Pomeranz, 2008). The Americans with Disabilities Act of 1990 and the Rehabilitation Act of 1973 (ADA, collectively), which prohibit discrimination due to mental or physical disabilities, have been more commonly used than civil rights laws in legal cases challenging weight discrimination (Pomeranz & Puhl, 2013). A 2009 amendment to the ADA allowed for severe obesity and its comorbidities (e.g., diabetes) to be considered forms of “impairment” (Pomeranz & Puhl, 2013). As a result, successful settlements have been reached in court cases claiming weight discrimination under this law. Of note, severe obesity does not automatically classify someone as “disabled” under the ADA, and overweight and mild or moderate obesity are not covered under the definition of impairment. Thus, some advocates propose an additional statute that would specifically prohibit weight discrimination, as was enacted for age discrimination (Pomeranz, 2008). Finally, anti-bullying laws are another proposed avenue for targeting weight stigma. Of the 49 states with anti-bullying laws, currently only a few specifically designate weight or physical appearance/attributes as protected characteristics (Hatzenbuehler, Flores, Cavanaugh, Onwuachi-Willig, & Ramirez, 2017; Puhl, Latner, O’Brien, Luedicke, Forhan, et al., 2016).

**Evidence of effectiveness.** Due to the limited existing laws that prohibit weight-based discrimination or bullying, research on the effectiveness of these laws is sparse. One study by Roehling, Roehling, & Wagstaff (2013) examined rates of weight-based discrimination in Michigan, after weight was included in the state’s civil rights protection law. In a random telephone sample of approximately 1,000 Michigan residents, an unusual pattern of sex differences in weight discrimination was observed. Contrary to prior studies that have consistently found higher rates of weight discrimination in women than men, these data showed *no* weight discrimination reported by women with class I obesity (30 ≤ BMI < 35 kg/m²), and *less* weight discrimination in women (versus men) with more severe obesity (BMI ≥ 35 kg/m²). The authors interpreted this as a signal that weight discrimination against women was reduced in the state of Michigan. However, in addition to overt forms of discrimination reported by participants (such as being denied a job or promotion), participants reported subtler forms of discrimination (such as social exclusion), which legislation has more difficulty addressing.

A recent study tested the effectiveness of anti-bullying laws on weight-based bullying. In a sample of 9th- through 12th-grade students from 28 states with anti-bullying laws enacted as of 2011, students with BMIs ≥ 30 kg/m² (or who
identified as “very overweight”) were still more likely to be bullied than students with lower BMIs, even in the few states with anti-bullying laws that enumerated weight (one state) or physical appearance/attributes (three states) as protected categories (Hatzenbuehler et al., 2017). The authors noted that enumerating “physical appearance/attributes” may not be specific enough to prevent weight-based bullying, and future laws may need to emphasize this attribute in particular to provide maximum protection.

More research is needed to determine the effects of legislation prohibiting discrimination and bullying due to weight. As new laws are proposed (such as in the state of Massachusetts; Quinn, 2013), researchers can design prospective studies to assess changes in rates of weight discrimination and bullying. Surveys of citizens living in cities or states with existing legislation might also elucidate whether individuals with obesity are aware of these protections, and whether they would consider seeking legal recourse if they experienced weight discrimination or bullying.

Beyond reducing instances of weight stigma, a recent preliminary study suggested that legislation could also have psychological benefits. In an online study, 214 participants with overweight/obesity read about an example of weight discrimination in the workplace and were asked to imagine that this had happened to them. Participants were then randomly assigned to one of two conditions: they were either asked to imagine that they lived in the state of Michigan, where weight discrimination is illegal, or in Ohio, where there is no legal protection against weight discrimination. Participants in the Michigan (illegal) condition scored lower on the Weight Bias Internalization Scale and reported less negative affect and more positive affect than participants in the Ohio (legal) condition (Pearl, Puhl, & Dovidio, 2017). By delegitimizing discrimination and affirming a sense of justice, legislation may prevent individuals with obesity from internalizing weight stigma and improve their psychological well-being following instances of weight discrimination. Prior studies have compared the mental and physical well-being of people living in states with discriminatory or protective laws for sexual minorities with those living in states without such laws (e.g., Hatzenbuehler, McLaughlin, Keyes, & Hasin, 2010), and found significant differences in the well-being of sexual minorities depending on the laws in their state of residence. Similar studies could be conducted comparing the mental and physical health of persons with obesity living in cities with and without laws prohibiting weight discrimination and bullying.

Public support. Public support for legislation prohibiting weight discrimination and bullying is high. In the United States, data from diverse, nationally representative surveys suggest that 70–80% of Americans support proposals to protect obesity as a disability, include weight in civil rights laws, and prohibit weight discrimination in the workplace (Puhl, Suh, & Li, 2016b). Multinational
studies show similarly strong support for anti-discrimination and anti-bullying laws related to weight. For example, a study that assessed attitudes among adults and college students in the United States, Canada, Iceland, and Australia found high support across all samples for proposed laws prohibiting weight discrimination (Puhl, Latner, O’Brien, Luedicke, Danielsdottir, & Salas, 2015). Women and individuals with obesity were more supportive of these anti-discrimination laws, as were participants who believed that obesity was caused by physiological factors. Participants who blamed individuals with obesity for their weight and believed obesity was caused by lack of willpower were less supportive of proposed legislation (Puhl, Latner, O’Brien, Luedicke, Danielsdottir, & Salas, 2015). Additionally, the majority of adults and students in these countries supported the use of local laws to prohibit weight-based bullying (Puhl, Latner, O’Brien, Luedicke, Forhan, et al., 2016).

Aside from general public support, specific stakeholders (i.e., those affected by weight stigma, and those who are working to prevent it) have also expressed desire to see more legislative protections against weight discrimination. In a sample of over 450 women who self-identified as having obesity or struggling with weight, over 85% rated laws prohibiting workplace discrimination due to weight and anti-bullying laws that included weight to be of “high importance” (Puhl, Himmelstein, Gorin, & Suh, 2017). A survey of parents also found growing support for state- and federal-level laws prohibiting weight-based bullying (Puhl, Suh, & Li, 2016a). In another study surveying members of a professional organization for eating disorders research and treatment, almost 95% of participants supported anti-bullying laws that included weight, and 85% supported proposed laws prohibiting discrimination in the workplace (Puhl, Neumark-Sztainer, Austin, Luedicke, & King, 2014). Thus, those who are most affected by weight stigma, and those who have academic and clinical interests in reducing weight stigma, show even stronger support for these proposed laws than the general public.

School and Workplace Policies

While top-down legislative initiatives gain traction, policies adopted by individual schools and workplaces may be implemented more quickly and have a significant impact on reducing weight stigma in these settings. Such policies may include: incorporating weight into anti-bullying curricula; providing trainings for teachers to intervene with weight-based bullying, and for employers to reduce weight discrimination in hiring, firing, and promotions; and setting workplace policies that demand respectful treatment of all employees.

Anti-Bullying policies. In a recent paper that synthesized prior meta-analyses and reviews on anti-bullying policies, the authors reported that, of 275 published anti-bullying interventions from 1966 to 2013, not a single one focused specifically
on reducing weight-based bullying (Aime, LeBlanc, & Maiano, 2017). Despite the lack of weight-focused anti-bullying school policies, large-scale surveys of citizens in the United States, Canada, Iceland, and Australia suggest that public support for such programs is high across Western countries (Puhl, Latner, O’Brien, Luedicke, Forhan, et al., 2016). Stakeholders (persons with obesity, parents, and educators) also express strong support for school-based policies to prevent weight-based bullying (Puhl, Himmelstein, et al., 2017; Puhl, Neumark-Sztainer, Austin, Suh, & Wakefield, 2016; Puhl, Suh, et al., 2016). Additionally, public and parental support is strong for the use of litigation against schools that do not adequately intervene with weight-based bullying (Puhl, Luedicke, & King, 2015). Due to strong public support, schools may strongly consider adopting such policies and empirically testing their effects on rates of weight-based bullying.

**Teacher training.** To facilitate school-based anti-bullying policies, teachers may require additional training to help identify and intervene with instances of bullying. In a survey of youth with overweight, over half (55%) reported that they would like teachers to intervene with instances of weight-based bulling, and 44% reported the desire for PE teachers to intervene (Puhl, Peterson, & Luedicke, 2013b). Educators report support for more training in bullying intervention as well (Puhl, Neumark-Sztainer, et al., 2016). PE teachers in particular may benefit from training in this area, given that students are often bullied in PE class, and PE teachers report inconsistent responses to weight-based bullying depending on student and teacher characteristics (such as gender; Peterson et al., 2015). Additionally, it is important for teachers who deliver obesity prevention or health-based curricula in schools to be careful not to send weight-stigmatizing messages, and to focus on health rather than appearance, to prevent youth with overweight from being teased or bullied in this context (Puhl, 2011).

**Workplace policies and training.** Persons with overweight/obesity strongly support incorporating weight into workplace discrimination and harassment trainings (Puhl, Himmelstein, et al., 2017). Weight can be added to existing diversity trainings (such as educational seminars about implicit bias) and “identity-safe spaces” initiatives that train employers and employees to promote an atmosphere of respect for all (as recommended by Schmader & Hall, 2014). Additionally, to prevent weight-based discrimination in the workplace, employees and potential new hires can be evaluated in a blinded fashion, so that weight is not visible. If this is not possible, employers can commit to using only objective metrics that would not be influenced by weight (e.g., years of prior experience or number of absences at current job) in order to prevent discrimination in hiring, firing, and promotions.
Health Care Initiatives

In the aforementioned survey of women with obesity, over 90% rated strategies that focused on health care settings as “high importance” initiatives (Puhl, Himmelstein, et al., 2017). In addition, 79% identified health professionals as having the potential to play a major role in reducing weight stigma. Several structural solutions have been proposed to reduce weight stigmatization in health care settings, including: enhancing obesity-related education and training; creating a physical environment that is comfortable for people with higher body weight; and expanding insurance coverage to include obesity-related treatments.

Education and training. Incorporating “weight sensitivity” training into course curricula for medical/health trainees is strongly supported among individuals with obesity (Puhl, Himmelstein, et al., 2017). Providing information about weight bias to trainees could help to target weight-biased attitudes early and prevent instances of weight-stigmatization in clinical care. Two studies of medical students found that brief, educational videos about weight bias in health care led to reductions in explicit weight bias (Poustchi, Saks, Piasecki, Hahn, & Ferrante, 2013; Swift et al., 2013). Of note, one of these studies did not find a change in implicit weight bias and found mixed results for sustained changes in explicit weight bias 6 weeks following the intervention (Swift, Tischler, et al., 2013), suggesting that the long-lasting effects of such interventions are still unclear. However, in another study, a one-day workshop on weight bias administered to over 300 public health practitioners (working in fields such as nutrition, chronic disease, and injury prevention) reduced weight-biased attitudes up to 6 weeks after the intervention (McVey et al., 2013).

Additionally, contact with “standardized” patients with obesity (individuals hired to role-play patient scenarios) within medical school courses may increase empathy and comfort when discussing weight (Phelan, Puhl, et al., 2015; Puhl, Phelan, et al., 2016). For example, one study provided medical students with articles about weight stigma and communication strategies prior to role-playing discussions about weight with standardized patients (Kushner, Zeiss, Feinglass, & Yelen, 2014). Results showed a short-term reduction in stereotyping, and a long-term increase in empathy and confidence in weight counseling.

Overall increased education for medical students and other health trainees about obesity treatment options and outcomes could help to dispel myths and misconceptions about weight. For example, informing trainees of realistic behavioral weight loss goals (e.g., 5% weight loss) and of typical long-term weight loss outcomes (i.e., high frequency of weight regain) could help to reduce blame toward patients who are unable to achieve and maintain large weight losses. Studies suggest that greater education about bariatric surgery—particularly the number of behavioral changes, and thus effort, required of surgery candidates—can also
challenge common characterizations of patients who seek this treatment approach as taking the “easy” road (Mattingly, Stambush, & Hill, 2009; Vartanian & Far- douly, 2014). Including non-stereotypical case examples in training (in contrast to stereotypical examples of patients who are lazy and eat too much) may also help to reduce implicit weight bias (Puhl, Phelan, et al., 2016). These approaches could be used across the training spectrum, including: medical student/resident lectures and seminars; American Board of Obesity Medicine certification courses; quality assurance trainings at medical centers and practices; and continuing education courses for practicing physicians.

**Attributions.** As described previously, weight-biased attitudes may stem from weight attributions of controllability, which lead to blame and overall negative attitudes toward persons with obesity. Following this theoretical understanding of weight bias, intervention efforts often attempt to change controllability attributions by emphasizing uncontrollable contributors to weight (namely biogenetic factors). Results of these interventions have yielded mixed results (Danielsdottir, O’Brien, & Ciao, 2010; Lee, Ata, & Brannick, 2014). For example, Persky and Eccleston (2011) found that medical students who read about genetic causes of obesity, versus behavioral causes or a control topic, reported less endorsement of weight-based stereotypes. However, students did not show differences in the anticipated treatment adherence of a virtual patient with obesity. Other studies emphasizing biogenetic explanations in general population samples have found no effects on weight-biased attitudes (Lippa & Sanderson, 2012; Teachman, Gapinski, Brownell, Rawlins, & Jeyaram, 2003).

Of note, the labeling of obesity as a disease has been encouraged in recent years by the American Medical Association (AMA). This classification was, among other reasons, recommended to de-stigmatize obesity by emphasizing its biological basis and thus reducing blame (Allison et al., 2008). The public largely agrees with classifying obesity as a disease (Puhl & Liu, 2015). However, some activists have criticized the medicalization of obesity from the perspective that it contributes to conceptualizing individuals with obesity as “diseased” and will lead to an increased “war on obesity” (Kyle, Dhurandar, & Allison, 2016). Consistent with the pathogen avoidance theory, this disease emphasis could increase stigma. On the other hand, this classification could reduce weight-based discrimination in insurance coverage (discussed in more detail below). More research is needed to fully understand the effects on stigma of labeling obesity as a disease.

**Language and communication.** Several studies have documented patient preferences for words used to refer to body weight. For example, patients tend to view terms such as “morbidly obese,” “fat,” “large size,” and “heaviness” as blaming and undesirable, and instead prefer terms such as “weight,” “unhealthy weight,” “overweight,” and “BMI” (Puhl, Peterson, & Luedicke, 2013a; Volger et al., 2012; Wadden & Didie, 2003). Efforts by health care practitioners to use
non-stigmatizing language, or to ask patients for their preferred weight-related terms, are recommended to prevent perceived judgment in health care interactions. The Obesity Society has also advocated for the use of “people-first language” (i.e., “individuals with obesity”) to communicate that patients are to be treated as individuals, rather than a homogenous group defined only by their disease (Kyle & Puhl, 2014). The use of people-first language is still the subject of debate (Meadows & Danielsdottir, 2016).

Training for health care practitioners to engage in patient-centered communication may also help to prevent potentially inadvertent stigmatization of patients with obesity. Techniques such as motivational interviewing can be used for initial conversations about weight in order to elicit patients’ internal motivation for change in an empathic and nonjudgmental manner (Dietz et al., 2014; Puhl, Phelan, et al., 2016). Generally, emphasizing the importance of changing health behaviors, rather than changing one’s appearance, is recommended to avoid perpetuating thin-ideal beauty standards and potentially contributing to internalized weight bias (Dietz et al., 2014).

**Physical environment.** Patients with obesity frequently report inadequate facilities and equipment as a deterrent from seeking clinical care (Amy et al., 2006; Kaminsky & Gadaleta, 2002). All clinics—and particularly those specializing in treatment for obesity-related comorbidities (e.g., diabetes)—can adopt policies to ensure that appropriate equipment is available. Equipment recommendations include: wide, armless chairs; properly-sized gowns and blood pressure cuffs; wide examination tables bolted to the floor with a stepstool for access; bathrooms with secured grab bars and properly-mounted toilets; doors and hallways that can accommodate wheelchairs and walkers; and adequate space between chairs in the waiting area through which patients can move (Porter & Catenacci, 2011; Rudd Center for Food Policy and Obesity). It is also crucial to have a high capacity scale, and for the scale to be in a private room or area (rather than the hallway or waiting area) to give patients privacy.

Additionally, health care practitioners and administrators can be cognizant of the images in their office or clinic, including the reading materials in the waiting area. Specifically, personnel can avoid hanging pictures that portray negative weight stereotypes or having magazines that promote the “thin ideal.” Instead, images and materials that feature positive and counter-stereotypical portrayals of persons with obesity can be displayed to promote body diversity. Images for public use are available through several resources intended to reduce weight stigma (see http://www.obesityaction.org/oac-image-gallery/oac-image-gallery-categories; http://www.uconnruddcenter.org/media-gallery).

**Insurance coverage.** As described previously, restricted insurance coverage for obesity treatment is a form of discrimination. Lack of treatment coverage may
exacerbate existing health disparities for individuals with obesity. This form of discrimination may be driven by controllability attributions; if people are blamed for causing their obesity, then insurance companies, the public, and the government may believe that the costs of treatment should lie solely with the individual “at fault.” The AMA’s classification of obesity as a disease in 2013 has led to the expansion of coverage for, and reduction in exclusions against, obesity-related treatment (Kyle et al., 2016). Coverage for bariatric surgery in particular has increased in recent years, but reimbursement for pharmacotherapy is often excluded from private insurance plans, as well as from Medicare and Medicaid (Baum et al., 2015). This is because, even under the Affordable Care Act, obesity treatment and bariatric surgery are not universally considered essential health benefits (Kyle, Nadglowski, & Stanford, 2015). Less than 30% of insurance consumers report having coverage for treatments such as medical weight management, pharmacotherapy, and bariatric surgery (Kyle et al., 2015). Among employed consumers, few report having wellness programs that offer weight loss incentives, and those who do are still not covered for most obesity treatments (Kyle et al., 2015).

Obesity treatment coverage could be expanded at several levels, including employer plans and state-level Medicaid programs. The majority of U.S. adults support insurance coverage for behavioral and surgical weight loss, including Medicaid coverage for bariatric surgery (Woolford et al., 2013). At the federal level, providing specific obesity treatment recommendations could impact coverage, and obesity medication could be removed as an exclusion from Medicare Part D (Baum et al., 2015). Increasing workplace wellness benefits could also reduce treatment disparities for individuals with obesity. Of note, it is important to ensure such wellness programs do not impose penalties against individuals with higher BMIs or who are unable to lose weight.

**Media Practices**

As reviewed previously, weight-stigmatizing media portrayals perpetuate stereotypes and increase negative attitudes toward persons with obesity. These portrayals may contribute to a perceived social consensus that weight stigma is acceptable. Furthermore, news media portrayals that frame obesity as a result of “personal responsibility” confirm attributions of controllability and blame. Exposure to weight-stigmatizing messages may trigger social identity threat and/or contribute to the internalization of weight bias in persons with overweight/obesity, leading to further downstream health consequences. However, while the media may increase weight stigma through negative portrayals of obesity, it also has the power to change social consensus and send de-stigmatizing messages.

**Images.** Images in particular can powerfully shape public attitudes independent of text (Messaris & Abraham, 2001) Studies suggest that, in contrast to
stereotypical portrayals, positive or counter-stereotypical images of persons with obesity lead to less desire for social distance and reduced support for weight-discriminatory policies (Brochu et al., 2014; Pearl et al., 2012). Furthermore, the public prefers to see more positive (versus stigmatizing) images of persons with obesity (Pearl et al., 2012). Persons with obesity also express strong support for media practices such as: increasing body diversity in television programs and films (including those geared toward children); including non-stereotypical portrayals of persons with obesity in entertainment media; and avoiding content that stigmatizes persons with obesity (Puhl, Himmelstein, et al., 2017). Other proposed media policies supported by eating disorder specialists (to both reduce weight stigma and prevent eating disorders and body dissatisfaction) include requiring labeling of digitally-altered photographs and increasing body diversity in fashion models (Puhl, Neumark-Sztainer, et al., 2014). Overall, media outlets can pledge to refuse to use weight-stigmatizing images that will perpetuate bias and impair the mental and physical health of persons with obesity.

News coverage. News stories that emphasize individual causes and solutions to obesity increase weight-biased attitudes, increase support for discriminatory weight policies (such as higher insurance premiums), and decrease support for public health policies (Barry et al., 2009; Frederick, Saguy, Sandhu, & Mann, 2016). In contrast, stories that emphasize societal or environmental causes (e.g., toxic food environment) decrease negative attitudes toward persons with obesity, and increase public support for policies aimed to prevent and reduce obesity (e.g., taxing sugar-sweetened beverages or requiring warning labels on high-sugar foods; Barry et al., 2009; Pearl & Lebowitz, 2014). Encouragingly, evidence suggests that images portraying persons with obesity in the news media have become less stereotypical over the past 25 years (Gollust, Eboh, & Barry, 2012). Additionally, some evidence suggests that news coverage (particularly in newspapers) has shown increases in the discussion of societal causes of obesity (e.g., economics, food environment, etc.), and decreases in the discussion of “personal responsibility” solutions in recent decades (Kim & Willis, 2007). Incorporating more stories about weight stigma in the news media could help to educate the public about the harmful consequences of placing blame on individuals with obesity (Puhl, Himmelstein, et al., 2017). More research is needed to identify ways in which to use this information to increase public support for health-promoting policies.

Public health campaigns. Finally, when developing content for public health campaigns aimed at promoting health behaviors, such as healthy eating and physical activity, media and public health professionals must consider the adverse effects of including stigmatizing content. Experimental studies have shown that the most motivating public health campaigns are those that are rated as positive, focus on specific health behaviors, and do not mention “obesity” at all, thus gearing their
messages toward improving the health of the public in general (Puhl, Luedicke, & Peterson, 2013; Puhl, Peterson, & Luedicke, 2013d). These findings are consistent with another study suggesting that, in comparison to images of people with obesity engaging in physical activity or being sedentary, neutral depictions of persons with obesity (such as in an office setting) strike the most effective balance between motivating physical activity in the public without increasing weight bias (Pearl, Dovidio, & Puhl, 2015). Future studies should continue to test public health campaign messages and images to accomplish their intended purpose of promoting health without the unintended consequence of perpetuating weight stigma.

Conclusion

Stigmatization of individuals with obesity occurs in the workplace, schools, health care, and media. Weight-biased attitudes may stem from misconceptions about the controllability of weight, unconscious associations between obesity and health, and the perceived social acceptability of weight stigma. Weight stigma threatens the social identity of persons with obesity and may lead to weight bias internalization, or self-directed stigma. Anticipated, enacted, and internalized weight stigma all negatively affect health through biological (e.g., heightened stress) and behavioral (e.g., higher caloric intake) pathways. Opportunities exist for implementing policies to reduce discrimination in the workplace, teasing/bullying in schools, stigmatizing messages and discriminatory treatment in health care, and stereotypical media portrayals. Such proposed policies have strong support from the public and stakeholders, including persons with obesity. As more of these promising policies are implemented, studies are needed to evaluate their effects on preventing and reducing weight stigma and its downstream health consequences.

References


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