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## Media and Its Influence on Obesity

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### Abstract

**Purpose**—To review How the media frames obesity and the effect it has upon on public perceptions.

**Recent Findings**—The scientific and public health understanding of obesity increasingly points away from individual behaviors and toward medical and community factors, but diffusion of this knowledge is slow. Growing awareness of the importance of body positivity is driving attention to the harms of weight bias and fat shaming.

**Summary**—Health science reporting related to obesity, nutrition, and physical activity tends to perpetuate myths and misunderstandings. Moving forward, greater attention to accurate messages about obesity and evidence-based interventions will be essential for progress to reduce suffering and the impact on public health from this chronic disease.

### Keywords

Media; Weight Bias; Weight Stigma; Obesity; Health Policy

## Introduction: Understanding Obesity as a Disease

In 2013, the American Medical Association (AMA), the largest organized medical society in the United States, recognized obesity as a complex, chronic disease which requires medical attention.<sup>(1)</sup> Despite this acknowledgement, the general public and the medical community have been slow to embrace obesity as a disease. Many still hold the belief that obesity is solely under personal control. As more research into obesity emerges, obesity is ever more

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Compliance with Ethical Standards

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#### Human and Animal Rights and Informed Consent

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clearly a complex, multifactorial disorder. It presents unique issues for each affected person. An increasing number of research, medical, and advocacy organizations recognize that obesity is a complex, chronic disease. With this recognition, a slow but evident shift is progressing to work toward greater access to care, reduced weight bias and stigma, and better research support for the prevention and treatment of obesity.

The World Obesity Federation has had a long history of addressing obesity as a disease. That history dates to a 1997 joint World Health Organization-International Obesity Task Force (WHO-IOTF) Consultation on Obesity. They continue their work with international non-profit health organizations to advocate for food, nutrition, and physical activity at local, governmental, and intergovernmental levels.(2) In addition, they support obesity research and advocate for dissemination of best practice interventions to meet the needs of people with obesity. Three primary reasons support the World Obesity Federation approach to obesity as a disease: 1) a diagnosis of obesity can help people cope with weight concerns to reduce internalized stigma or the belief that their problems are self-inflicted and shameful, 2) classification of obesity as a disease to help change the public discourse about blame for the condition, and 3) recognition of obesity as a disease may have benefits in countries where health service costs are funded from insurance schemes that limit payments for non-disease conditions or risk factors.(2)

In order to explain obesity as a disease from an epidemiologic perspective, Bray and colleagues define food as the primary agent which produces the disease of obesity in the human host.(3) In their paper, they explain that food abundance, low levels of physical activity, and a myriad of other environmental factors interact with a genetically susceptible human to produce a positive energy balance, mostly in the form of fat, which is stored not only in enlarged fat cells but also in organs such as the liver. The enlarged fat cells and ectopic fat then secrete inflammatory, hormonal, and metabolic products to damage organs throughout the body.(3) It is then presumed that the degree of obesity that a person has relates to the virulence of the environment and its interaction with the human host.

Obesity is no longer considered an epidemic because it has reached pandemic status throughout the developing world. However, the debate over whether to consider obesity a disease is not based on medical facts alone. It also takes into account a conceptual analysis of the situation.(4) The philosophy of medicine employs two concepts of disease: the constructivist and naturalistic, but both of these concepts support obesity as a disease. As a result, it is important for persons who care for patients with obesity to recognize the chronic, progressive characteristics of the disease to ensure a model of care that supports the chronic nature of obesity and its co-morbidities is employed to ensure optimal care for this patient population.

In order to tackle the issues of childhood obesity, 43 cross-sector stakeholders participated in a conference supported by the Agency for Healthcare Research and Quality (AHRQ), the American Academy of Pediatrics (AAP) Institute for Healthy Childhood Weight, and The Obesity Society (TOS) to improve the systems of care to advance implementation of the United States Preventive Services Task Force (USPTF) recommendations for childhood obesity.(5) Their recommendation was that childhood obesity treatment should include

provisions to provide or refer to intensive (e.g. >25 hours), multicomponent behavioral care. Expanded payment for these services will be necessary. They concluded that cross-sector collaboration is needed to ensure proper training of health professionals to treat childhood obesity with a unified approach to increase payments for delivery of obesity care.

Pharmacologic treatments for obesity are grossly underutilized, due to multiple factors, but one concern has been inadequate clinical guidelines. A consensus group including members from the Endocrine Society (ENDO), the European Society of Endocrinology, and The Obesity Society (TOS) developed guidelines for the pharmacologic treatment of obesity using the Grading of Recommendations, Assessment, Development, and Evaluation (GRADE) system to describe the strength of recommendations and the quality of evidence. (6) For patients who have been unable to achieve a healthy weight with diet and exercise, weight loss medications serve as an adjunct to help improve weight status. In addition to knowing which medications may be utilized to reduce weight, it is important for clinicians to recognize that many commonly prescribed medications for other chronic disease processes such as mood disorders, diabetes, and hypertension may contribute to weight gain in an individual.

Finally, the 2013 AHA/ACC/TOS Guidelines for Management of Overweight and Obesity in Adults presents another opportunity to guide care of patients with obesity. Their recommendations are: 1) identification of patients who need to lose weight, 2) counseling about the benefits of weight loss, 3) dietary therapy for weight loss, 4) lifestyle intervention and counseling, and 5) bariatric surgery.(7) Despite these recommendations, concerns remain that the current physician workforce is not equipped with the proper education to treat patients with obesity secondary to the fact that physicians are not adequately trained in the etiology, pathophysiology, and management of obesity. Also, weight management treatments are not universally reimbursed.(7)

## Body Positivity, Weight Bias, and Fat Shaming

Awareness in the United States of the importance of body positivity is growing and driving increased attention to the harms of weight bias and fat shaming. Weight bias is negative attitudes toward a person with excess weight or obesity. Fat shaming is behavior that humiliates someone judged to have excess weight. In her notable book *Fat-Talk Nation*, Susan Greenhalgh notes that cultural assumptions about body weight and health are often based on false, contested, or incomplete scientific ideas (8). Myths such as the idea that weight is under individual control, or that body mass index (BMI) is an accurate measure of weight status, or that disease status correlates with disease, all contribute to stereotypes about weight loss and obesity. These stereotypes can be harmful for people with overweight and obesity. Greenhalgh discusses the societal effort to police and shame individuals who are perceived to be fat. Medicine is implicated in this harmful environment for people with obesity, because ideas about health and weight often stem from moral judgments and cultural biases rather than scientific and medical knowledge. This problematic trend implicates healthcare practitioners just as much as the general public. (8)

The impact of weight stigma can be medical, psychological, and social. Scientific literature is now beginning to reflect greater attention to this problem. Puhl and colleagues note that being the recipient of weight stigma increases the likelihood of engaging in binge-eating behaviors, disordered eating patterns, increased calorie intake, avoidance of exercise, and lower motivation for physical activity.(9) In fact, the negative consequences of weight bias remain even when controlling for BMI and weight status. Similarly, a 2010 study in the journal *Obesity Facts* showed that the experience of weight stigma, irrespective of BMI, negatively affects individuals' willingness to participate in physical activity. (10) The cumulative result is that people who experience instances of weight discrimination are 2.5 to 3 times more likely to develop or maintain obesity over time as compared to individuals who do not experience weight discrimination. Studies of over 6,000 adults from the Health and Retirement Study and of nearly 3,000 adults from the English Longitudinal Study of Aging have both found that experiencing weight discrimination results in increased odds of developing obesity and increases in weight and waist circumference, regardless of baseline BMI.(11, 12)

The impact of weight bias on health has serious implications for the management of other medical conditions, since it produces physiological increases in levels of cortisol, C-reactive protein, and blood pressure. (13, 14) Considering the harms of elevated blood glucose and elevated blood pressure on patients with diabetes, these findings should raise concern about the medical harms of weight bias. Individuals who experience fat shaming have an increased risk of depression, anxiety, low self-esteem, poor body image, substance abuse, and suicidality, and these effects remain even after controlling for BMI, obesity onset, sex, and age.(9) Thus, it is the experience of bias and stigma, not merely obesity per se, that has been associated with health risks in these studies.

Where does this stigma present? It presents in the media, in homes, in workplaces, but also in clinics and hospitals. It can also present at a very young age.(15) Weight bias among healthcare professionals has been well-documented and is beginning to be better understood. Sabin and colleagues found in a survey of over 2,000 physicians that weight bias is as pervasive among them as it is in the general public.(16) The Implicit Association Test is a validated measure for implicit or unconscious biases against people with excess weight.(17, 18) Using this instrument, they found that medical doctors have a strong implicit anti-fat bias, and as with the general population, medical doctors have a strong preference for thin over heavier people. This bias manifests in the belief that people with overweight or obesity are to blame for laziness or lack of willpower that results in increased weight or noncompliance with treatment goals.(9) These pervasive views have the potential to greatly harm the patient-provider alliance and in fact they can worsen the effort to manage obesity.

In a cross-sectional survey of 600 general practitioners in southeastern France, Bocquier and colleagues found that while 79% of surveyed physicians agreed that managing obesity-related problems was part of their job, over half (57.5%) felt that they did not manage these problems effectively, and a third considered their patients with overweight and obesity to be lazier and more self-indulgent than people of normal weight.(19) These factors had important consequences for the medical management of obesity, which were exacerbated by the fact that only 6.7% of physicians were aware of the clinical guidelines for obesity

management. In another robust survey of 100 primary care physicians, 100 endocrinologists, 70 cardiologists, and 30 bariatricians, researchers found no consensus among physicians on when to initiate weight loss medications; indeed, providers had unrealistic expectations with respect to weight loss medications and bariatric surgery or were unsure altogether.(20) Evidence also suggests that physicians spend less time with persons with obesity, provide less education, and are more reluctant to perform certain screenings.(9)

People with obesity report that comments about their weight from healthcare providers make them reluctant to discuss weight concerns and degrade the quality of communication between patients and providers, especially for those patients who are from minority backgrounds.(9) In a qualitative study of Australian adults living with type 2 diabetes mellitus, Browne and colleagues found that these individual experiences of stigma paralleled some of the themes of personal responsibility and character deficiencies highlighted above. (21) Survey participants noted that they were blamed by others for their condition, subject to negative stereotyping and discrimination, and were therefore unable and unwilling to discuss their condition, including with healthcare professionals, while experiencing psychological distress. Less patient-centered care predicts lower patient adherence, less patient-provider trust, and worse patient outcomes.(22)

In the United States, the legal system has begun to consider the topic of weight-based discrimination, a practice which is permissible under federal law. It is interesting to note that while many Americans continue to attribute obesity to personal factors, there is simultaneously a high degree of public support for legislation to address risk factors that lead to obesity. This association has been probed in the literature on public attitudes toward obesity, which is discussed in the next section. Recent additions to the literature in obesity and fat studies reveal increasing support for potential legislative measures that would prohibit discrimination based on body weight in employment, make body weight a protected characteristic under civil rights laws, and accord disability protections for people with obesity. Puhl and colleagues found a significant trend toward increasing support for such measures in the US from 2011 to 2015. (23)

## Health Science Reporting and Public Understanding

As Greenlough and others have noted, myths and misinformation about obesity, nutrition, and physical activity play a role in promoting weight stigma.(8) Errors in scientific literature tend to become magnified in health science reporting on the topics of obesity, nutrition, and physical activity. Public ideas about health often rest on a foundation of scientifically incomplete knowledge, and these become the basis for cultural judgments about fatness and obesity.

In a comment piece published in *Nature*, Allison and colleagues spoke out about the problem of errors in the scientific literature from the perspective of researchers who work on obesity, nutrition, and energetics. (24) The authors noted their own experiences finding many factual and methodological errors in articles within their field – errors that had the potential to alter the conclusions reported in these papers. They also described how cumbersome and costly it can be to correct these errors once they are published. Given the public interest in

obesity and nutrition research, it is troubling to consider how the generation of erroneous conclusions in scientific studies and the problem of correcting scientific errors in the literature post-publication impact scientific, medical, and lay understandings of these topics. For example, a study of childhood obesity prevention was retracted from *Obesity* because of unsubstantiated claims that a nutrition intervention prevented obesity. Authors re-published the same paper a year later in a different journal without disclosing the prior retraction or correcting the errors that led to the retraction. (25)

An international team of researchers who work on obesity and nutrition wrote in the *New England Journal of Medicine* about the plethora of unsubstantiated beliefs about weight loss, nutrition, and obesity. Casazza and colleagues set out to show the lack of evidence for many weight loss ideas, such as the idea that small sustained changes in energy intake accumulate over time for large, long-term weight loss, or that it is necessary to have realistic goals for weight loss, or that diet readiness is necessary to help patients successfully lose weight. The authors further dismantle the myths that rapid weight loss leads to poorer weight loss outcomes as compared to gradual weight loss, that physical education classes in schools as currently designed reduce or prevent childhood obesity, or that breast-feeding is protective against obesity. They also note the absence of evidence to prove that breakfast is protective against obesity, that early childhood habits regarding exercise and eating influence weight throughout life, that eating more fruits and vegetables can produce weight loss, that snacking contributes to weight gain, or that neighborhood environment structures influence obesity. Their findings have great implications for the cultural and medical coping with obesity. For example, the authors note that while reduced energy intake has been scientifically proven to reduce weight, the act of trying to go on a diet or having a diet prescribed does not generally result in weight loss. Reduced energy intake is the most important arbiter of weight loss in this scenario. Provision of meals and use of meal-replacement products have been shown to promote greater weight loss. Thus, structural and environmental changes can successfully result in clinically significant reductions in obesity, as compared to fat shaming or assigning personal blame to persons with obesity. Lastly, and notably, we should not underrate the promise that obesity pharmacotherapy and bariatric surgery offer for the effective treatment of obesity.(26).

Brown and colleagues further describe the problematic scientific process behind generating knowledge about health and nutrition, as well as methodological errors that cast doubt on many scientific conclusions. For example, the authors note that observational studies of foods that cause cancer are profuse in the biomedical literature. Studies often tend to find significant associations, however the sum total of the associations as well as the effect sizes found between certain foods and cancers go against common sense knowledge regarding the effect of dietary changes on cancer prevalence around the world. In such cases, confounding biases and other methodological errors can contribute to significant findings. Media interest and the subsequent dissemination of study findings worsen this problem because they contribute to further fallacies in scientific research, whether through confirmation bias or exposure effect. Publication bias toward studies that match preconceived expectations, as well as study conclusions skewed toward study hypotheses worsen this vicious cycle.(27)

Frederick and colleagues have examined this dilemma regarding myths about obesity and fatness. (28) They have investigated how scientific knowledge about these topics are disseminated through the media and how that affects attitudes toward individuals with obesity, as well as public support for obesity policies. The investigators gave over 2,000 participants news articles that portrayed fatness as unhealthy, under personal control, and acceptable to stigmatize, or they gave them news articles that indicated the opposite. The authors found an association between negatively framed articles and greater anti-fat prejudice, greater willingness to exclude larger body sizes from acceptable notions of body size, and greater willingness to discriminate against fat people including charging them more for health insurance. This research demonstrates that the nuances of public reporting on obesity and fat is tied in intricate ways to the lived experience of individuals with obesity, related to how they are perceived, and the acceptability of anti-fat behavior.

Similarly, Saguy and colleagues conducted an in-depth experiment analyzing a diversity of news framings of obesity, and then compared the impact of these frames on readers' perceptions of the risks of higher body mass, their support for public health policies aimed at obesity, and their attitudes toward people labeled as fat or obese. (29) The articles were framed with different ways for discussing obesity: one discussed obesity as a public health crisis, the other as less of a problem than previously thought, and another in the context of weight-based discrimination. The researchers found that framing obesity as a public health crisis was associated with greater anti-fat prejudice. But exposure to news about weight-based discrimination resulted in less inclination towards seeing obesity as a public health crisis and a lower likelihood of support for obesity-related public policies. Both this study and the one by Frederick and colleagues show that concerns about heavier bodies and obesity are tied to support for public health measures to ameliorate the rates of obesity, but are simultaneously linked to weight-based prejudice. (28, 29)

## Framing Public Policy Issues

Print and electronic media reporting on obesity play an important role in shaping public perceptions about policy issues related to obesity. At present, they largely serve to reinforce the notion that obesity policy amounts to nothing more than the aggregation of policies related to food and physical activity.

Stanford and Kyle examined the deficiencies in this approach. (30) They concluded that “a more complete approach is needed to address the complex physiology of obesity, its transgenerational effects, and the importance of diverse stakeholders, including the food industry.” In addition, Monaghan and colleagues described how a dimension of moral panic, with an emphasis on body size, compounds the problem of ineffective approaches to public policies intended to address obesity. (31) When framed as a moral issue, policies tend to add to weight stigma and lead to worse outcomes, both for individual and public health.

One of the ways that this occurs is through discriminatory medical policies. Brochu and colleagues demonstrated how stigmatizing media portrayals can lead to such policies. (32) People were more likely to support discriminatory policies if news accounts are paired with stigmatizing images than if they are paired with neutral images. Stigmatizing media

campaigns also serve to prevent personal engagement in health promotion. In a study by Puhl and colleagues, stigma-free and positive messaging was more likely to engage people in healthy behavior changes than were stigmatizing messages that focus on weight.(33)

Likewise, at a community level, media can influence public engagement in policies to address obesity. In a web-based experiment, Ye Sun and colleagues found that how news reports frame health issues related to obesity can affect support for both individual and community action to address obesity. Framing obesity in a societal, rather than individual, context led to more engagement and support for both community and personal action.(34) In a similar way, Gollust and colleagues found that different health messages have important effects on support for public action to address childhood obesity.(35) Messages about health consequences had the strongest effect overall, compared to others, such as messages relating to disparities. They also found that the impact of different messages varied among cohorts of people with different political orientations. For example, messages about obesity's impact on military readiness had a greater impact of politically conservative respondents.

## Moving Forward: Coping with the Chronic Disease of Obesity

Recent years have seen much progress in the understanding of obesity – both as a disease and as a cause for bias, stigma, and discrimination, but media messaging has been slow to incorporate this new understanding. The dominant themes in media reports about obesity focus almost exclusively on individual choices about nutrition and physical activity. Individual nutrition and physical activity can indeed have positive impacts on health.

But media messages less often reflect the complex interactions of biology and diverse environmental factors that promote obesity quite independently from individual personal choices. The result is that health policies place little emphasis on evidence-based obesity care and the need for more effective public health interventions to prevent obesity.

Typically, health plans will cover only brief and largely ineffective counseling to reduce or prevent obesity for individual patients.(36) For even modest effectiveness, intensive interventions are required.(37) Likewise, coverage for FDA-approved pharmacotherapy is uncommon.(38) Although health plan coverage for bariatric surgery is more common than for other obesity treatments, significant gaps remain.(39) Until media messaging about obesity includes more complete information about evidence-based obesity care, this situation will change very slowly, if at all. Strategies to achieve more complete media messaging will necessarily involve raising the awareness of more healthcare professionals about the physiologic basis for obesity, because the media often relies upon healthcare professionals who are not obesity specialists in preparing news reports. As a prototype for such efforts, the Bipartisan Policy Center has worked with 20 leading health organizations to develop a core set of provider competencies for obesity. (40)

## Conclusions

Public health strategies to reduce the impact of obesity have been largely focused on promoting healthier individual nutrition and physical activity behaviors. Media reporting tends to promote weight bias and focus the public primarily upon individual behaviors



without addressing the complexity that leads to the current pandemic of obesity. Thus, it is unsurprising that public support for research to identify more effective strategies is limited. But because “no major population success has yet been shown” in reversing long-standing trends toward higher obesity prevalence, new strategies are clearly needed. (41)

Clinical and public health scientists must lead in the effort to develop and implement more effective approaches to reduce the impact of obesity. But they will not accomplish this in a vacuum of public understanding. Therefore, mass media has a critical role to play in creating an environment where progress is possible.

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