

The Economics of Weight-Loss Medication

The emergence of literature surrounding newly available weight-loss medications, particularly those containing Semaglutide as their active ingredient, has sparked widespread interest and discussion, not just in academic discourse, but also in the realm of social media. These medications were originally designed to address diabetes, but they have garnered significant attention for their unexpected efficacy in promoting weight loss. While Semaglutide-based medications have indeed shown promising results in weight loss and hold potential for addressing obesity, it is crucial to recognize that they offer only a temporary solution to a deeply rooted issue. To truly combat obesity on a societal level, we must address the underlying causes embedded within American lifestyles.

Obesity has evolved into a pervasive and economically burdensome health crisis within the United States. As per data from the National Health and Nutrition Examination Survey (NHANES), between 1999 and 2020, obesity levels rose from 30.5% to 41.9% with severe obesity rates climbing from 4.7% to 9.2%. This surge is not without consequences, as obesity correlates strongly with a myriad of serious health conditions, including heart disease, stroke, and type 2 diabetes. The financial burden of obesity is equally alarming, with estimated annual medical costs reaching \$173 billion in 2019 alone (CDC). Moreover, obesity does not affect all demographic groups equally, with disparities evident across racial, ethnic, and socioeconomic groups.

The efficacy of Semaglutide in promoting weight loss is being explored as a potential treatment for the issue of obesity. A study conducted by Ghossein et al. retrospectively analyzed data on Semaglutide treatment for adults with obesity. It found that Semaglutide treatment was associated with significant weight loss, with mean weight loss percentages of 5.9% after 3 months and 10.9% after 6 months (Ghossein et al.). Additionally, Wilding et al. conducted an RCT to examine the benefit of once-weekly semaglutide at a dose of 2.4 mg. Participants receiving semaglutide experienced a remarkable mean reduction in body weight of -14.9% compared to -2.4% in the placebo group over the 68-week period that the study took place. Furthermore, a significantly higher proportion of semaglutide recipients achieved clinically meaningful weight reductions of 10% or more compared to those in the placebo group (Wilding et al.). These findings show the potential of semaglutide as a pharmacologic intervention for addressing obesity.

While the success of these medications in promoting weight-loss is undeniable, it is imperative to acknowledge that sustainable solutions to obesity require more than just pharmacological interventions. It is crucial to note that popular weight-loss medications, like the brand name Ozempic, often come with financial barriers and accessibility issues that limit their attainability for those who need them most. The cost of a 30-day course of Semaglutide, estimated at \$804 in the United States (Levi et al.), exemplifies these challenges. Consequently, it is essential to integrate behavioral economics into the evaluation of medical accessibility. Financial barriers and insurance coverage can influence individuals' decisions regarding medical treatments. Additionally, cognitive biases affect individuals' perceptions and actions regarding medication. One such bias that is often cited is the optimism bias, where individuals tend to overestimate the likelihood of positive outcomes while underestimating any potential risks or challenges. When it comes to weight-loss medications like Ozempic, individuals may cling to unrealistic expectations about the extent of their effectiveness or the ease of adhering to treatment regimens. Moreover, present bias can hinder individuals' abilities to prioritize long-term health goals over immediate

gratification. Despite the promise of these pharmacological interventions, the need for sustained lifestyle changes may be downplayed or deferred due to the allure of “quick fixes” offered by these medications. This bias can lead to lapses in medication adherence or neglect of the necessary complementary lifestyle modifications, ultimately undermining the effects of the treatment. It becomes essential to accompany any weight-loss medications with lifestyle modifications in order to achieve long-term success in managing obesity on a nationwide scale. Lifestyle changes include dietary adjustments, increased physical activity, and behavioral therapy. Additionally, efforts should be directed towards addressing the socioeconomic factors that contribute to disparities in obesity treatment access. By prioritizing holistic approaches to obesity management, we can strive towards improving the health outcomes for all Americans, regardless of financial situations.

Combating obesity demands multifaceted approaches that ideally will extend beyond individual lifestyle interventions and lead to broader systemic change. Obesity rates have been influenced by a multitude of factors, each with its own complexities. While these elements are significantly intertwined, they must be broken down and explored individually to understand which factors could contribute to public policy.

Diet plays a crucial role in understanding and addressing the challenge of obesity, influencing not only individual eating behaviors but also broader societal patterns. Many factors, from eating habits to dietary interventions, affect the relationship between diet and obesity. Additionally, the connection between diet quality and obesity becomes evident after a thorough analysis of nutrient intake patterns over time. A study focusing on disease-free women over 16 years revealed that poorer diet quality was associated with increased consumption of total fat, particularly saturated fat, and alcohol, along with lower intake of energy, carbohydrates, and micronutrients. Adjusting for age, physical activity, and smoking status, multiple logistic regression analyses revealed a significant association between diet quality and the risk of developing obesity. Women in the highest nutritional risk tertile were 1.76 times more likely to become overweight or obese compared to those in the lowest nutritional risk tertile. This association was statistically significant ($p=0.009$), reinforcing the relationship between diet quality and obesity risk (Wolongevicz et al.).

Behavioral Economics gives insights into the decision-making processes that influence dietary choices and eating behaviors. Factors such as overeating, often stemming from modern eating-related habits, can be understood through the examination of cognitive biases and the environments affecting food consumption patterns. For instance, Haofeng et al. examine the psychometric properties of the Addiction-like Eating Behavior Scale (AEBS) among the Chinese population. Findings reveal positive associations between addictive eating behaviors and modern habits such as ordering delivery food and eating late-night meals (Ling et al.). Similarly, another study highlighted boredom as a significant trigger for the urge to eat, with women exhibiting a higher inclination towards emotional eating, particularly as a mechanism for dealing with feelings of depression and anger (Guerrero-Hreins et al.). Understanding these behavioral patterns can inform interventions aimed at promoting healthier eating habits. By recognizing the influence of environmental cues and emotional states on food choices, policymakers and healthcare providers can design strategies that guide individuals towards making healthier decisions.

Similarly, behavioral economics can offer insights into the role of physical activity, which emerges as a critical factor in the prevention and management of the obesity epidemic. A study conducted by Stanford University School of Medicine researchers suggests that the effects of

physical activity might outweigh the impact of dietary habits in the prevention and treatment of obesity. Through an analysis of National Health and Nutrition Examination Survey data spanning from 1988 to 2010, researchers observed surges in both obesity rates and sedentary behaviors, but no increase in overall caloric intake. A long-term project of the CDC, the survey collects information from physical examinations to assess Americans' health. Results showed a rise in physical inactivity, particularly among women, with the proportion reporting no exercise increasing 33 percentage points, from 19% in 1988 and 52% in 2010 (NHANES). Despite stable caloric consumption, the prevalence of excess abdominal fat surged, highlighting the impact of sedentary lifestyles on health outcomes. It becomes evident that physical exercise stands out as an incredibly important intervention in combating obesity. Despite the emphasis on weight loss in current literature, empirical evidence continues to show the advantages of physical activity on diverse health parameters, irrespective of changes in body weight or BMI. Pojednic et al. reveal robust associations between physical activity and enhanced cardiorespiratory and muscle fitness, accompanied by a notable decrease in the risk of cardiovascular ailments. Moreover, physical activity demonstrates a significant impact on overall quality of life, brain health, cognition, memory, sleep, and emotional well-being (Pojednic et al.). The lack of literature on health outcomes related to physical activity independent of weight loss—only 14 interventions were found—emphasizes the critical need for more comprehensive investigations into the benefits of physical activity on obesity. By understanding the behavioral barriers to exercise, such as perceived effort and time constraints, policymakers can design interventions that make physical activity more appealing and accessible to individuals across diverse socioeconomic backgrounds.

Addressing these root causes requires a multifaceted approach that involves education, policy changes, and community initiatives aimed at promoting healthy behaviors. Efforts to improve nutrition education, increase access to affordable healthy foods, create safe and accessible recreational spaces, and promote active transportation can all contribute to creating environments that support healthy lifestyles for all Americans. While medications like Semaglutide can be valuable tools in individual weight management, they should be seen as part of a broader strategy that prioritizes prevention and addresses the systemic factors driving the obesity epidemic.

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