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Attributions of Body Weight Among Persons with Obesity

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Abstract

The obesity epidemic has become a major public health concern as 42.8% of adults in the U.S. today are estimated to being obese. Moreover, rates of obesity illuminate that over the past sixty years, obesity prevalence has more than tripled and severe obesity has become ten times more prevalent in the U.S. The body of literature that has attempted to explain the large surge in obesity prevalence has largely operated from a biological framework. The biological framework has aided in better understanding how biological mechanisms contribute toward growing trends in obesity, but it is insufficient in explaining the dramatic rise in obesity prevalence alone. Emerging areas in research have unveiled that obesity prevalence is largely due to a complex relationship of biological, social, and psychological factors. Given these new areas, research investigating the perspectives of persons with obesity are sparse and needed. Moreover, little is known what persons with obesity attribute toward their weight category. Health beliefs around attribution formation appears to be an important area for research, as studies have demonstrated that the way we perceive health has implications for how we engage in positive health behaviors. This paper summarizes the need for research in this given area to explore the attributions of body weight among persons with obesity.

Keywords: Obesity Epidemic; Obesity; Weight Based Stigma; Attributions

Abbreviations

PWO: Persons with Obesity; CDC: Center for Disease Control; BMI: Body Mass Index; FPL: Federal Poverty Level; US: United States.

Introduction

Obesity

Obesity is most often measured using BMI. BMI is a complex mental calculation that utilizes a person's height and weight within a mathematical formula to achieve an overall BMI score [1]. A BMI score of 30 to 39.9 is considered to be obese and a BMI of 40 or higher is considered as severe obesity [2].

Approximately, 42.8% of adults in the U.S. are estimated as being obese, and 9.2% of whom severely obese currently [3,4]. These rates have become a major public health concern, as obesity prevalence has more than tripled in the past sixty years [3,4]. Of these rates, severe obesity has become ten times more prevalent in the past sixty years also. Within these trends, African Americans appear to be disproportionally represented in obesity and severe obesity rates than other ethnic groups [5]. Women were also

significantly over-represented in severe obesity trends [5]. Whereas persons with annual incomes 350% above of the FPL were significantly less likely to have severe obesity [5].

Implications for Obesity Prevalence

These rates have become a growing concern because obesity is closely linked with developing health conditions such as gallbladder disease, heart disease, high blood pressure, hypertensions, diabetes, stroke, osteoarthritis, sleep apnea, and various forms of cancer [6,7]. Of which: cancer, liver disease, diabetes, stroke, and heart disease fall within the top ten list of causes of death within the U.S. [8]. Due to these associated risks, PWO are estimated to living 3 years less and persons with severe obesity are estimated to living ten years less than the national average [9,10]. There is a clear need to further explore the growing trend in obesity, particularly given that obesity rates are slated to increase to over 50% and severe obesity to nearly 25% in the U.S. by the year 2030 [11].

Development of Obesity

Obesity has historically been conceptualized as a biological health condition. As a result, research around obesity through biological conceptualizations has garnered an in-depth exploration around biological mechanisms that may contribute toward obesity prevalence. However, it is apparent that biological mechanisms are insufficient to explain the growing trends of obesity alone, as rates of obesity continue to rise. Luckily, researchers have begun pointing toward social and psychological factors that may contribute toward obesity prevalence. The following sections review established research on biological, psychological, and social factors. Of note, this the presenting findings are not exhaustive of all factors that contribute to obesity prevalence.

Biological Factors of Obesity

As previously stated, obesity has been historically conceptualized through a biological framework. In the early 1900s, researchers postulated that obesity is often the result of consuming more foods than we expend [12]. Also known as the energy surfeit theory, this hypothesis gave birth to "calorie counting" diets and notion that we can control or manage our weight by measuring how many calories we consume [13,14]. Researchers testing the validity of this theory found that the notion of a "calorie is a calorie" does not consider the various forms of calories from energy sources (i.e., calories from carbs vs fats) and is a poor predictor in weight loss outcomes [13-15]. Investigating these areas resulted in the discovery of increasing frequency of exercise as an efficacious way to manage or lose weight, thus has become a recommended intervention to manage or lose weight. Researchers also have attempted to explain obesity prevalence through genetic causes, but most were found to be inconclusive [16,17]. Only two genes were found to be connected toward onset of obesity, but are considered as extremely rare, applicable to a miniscule subset of populations with obesity, and does not provide evidence for the rise in obesity rates [16,17]. Researchers have also thoroughly investigated hormones to explain obesity prevalence. Of which, insulin, ghrelin, and leptin have been speculated to impact obesity prevalence, as they are in charge of processing food to energy sources, signaling hunger, and regulating satiety signals [12,18-20]. However, the saliency of hormonal challenges with ghrelin and leptin are also rare in prevalence, and insulin levels are largely impacted by dietary intake behaviours [12,18-20]. Overall, biological conceptualizations in research aided in better understanding the efficacy of weight loss and maintenance interventions such as low-carb diets, increases in exercise, bariatric surgery, leptin injections, and medications [12,18-20].

However, only exercise and low-carb diets are generalizable to PWO. Moreover, despite the bolstering evidence on biological mechanisms and interventions, obesity rates have significantly continued to rise. In response, social and psychological areas in research have begun emerging over recent years.

Social Factors of Obesity

Researchers over recent decades have recently pointed toward changes in the agricultural environment to explain obesity development. Often referred to as the 'obesogenic environment' researchers point out that food production has been increasingly geared toward making foods more affordable and palatable over recent decades [5,21,22]. Of which foods have become increasingly processed than natural and often contain high amounts of sugar and other processed ingredients [5,21,22]. It is no surprise that the dramatic rise in processed foods and ultra-processed foods has become a plausible explanation toward obesity prevalence. Persons who live in disenfranchised environments may also be at an increased risk for obesity prevalence. Whereas researchers highlight how persons who live in food swamps, which is an area that has an over-abundance of unhealthy food sources, are at a significant increased risk for having a higher BMI than other neighbourhoods [23]. Similarly, persons who lived in food deserts, which is an area where access to healthy foods are sparce, are disproportionately at risk to have higher BMI rates when compared to other neighbourhoods also [24]. These areas of research illuminate how proximity to unhealthy food sources and to healthy food sources may have a direct impact on obesity prevalence.

Interestingly, ethnic minority groups were disproportionately represented when living in food deserts

and food swamps than other groups [23,24]. Another social factor that has emerged in social research involves the impact of weight-based stigma. Weight-based stigma is often referred to as sizeism, also known as various forms of discrimination or prejudice toward groups based on their weight or size [25,26]. Research estimates that weight-based stigma is pervasive in westernized culture as 57% of the total population experienced weight-based stigma, and persons that are overweight and obese were disproportionally represented [25,27]. It is suggested that when individuals experience forms of weight-based stigma, they are at risk for developing internalized stigma [28,29]. Internalizing weight-based stigma can have detrimental effects on an individual's perception of ability to manage weight, declines in self-esteem, body satisfaction, and mental health concerns such as depression and anxiety [25].

Psychological Factors of Obesity

In addition to biological and social factors, psychological factors have been increasingly investigated among possible factors behind obesity prevalence. Within these areas of research, researchers have speculated that food desirability may be inadvertently behaviourally conditioning persons to engage in increased consumption of palatable foods [30,31]. As such, cues (smells, sight of food, advertisements) of palatable foods impact blood glucose levels that signal for our bodies to engage in dietary behaviour, despite actual hunger [30,31]. Eating as a form of coping with positive or negative emotions has also been linked with obesity rates [32,33]. Of which, approximately 50-60% of populations with obesity reported to engaging in emotional eating behaviours throughout their lifetime [28,34]. Moreover, studies have found that the types of foods most consumed during emotional eating episodes likely contain large amounts of sugar and fat [35,36]. Health beliefs also appears to be an important factor behind obesity prevalence. Researchers have found that when persons perceive themselves as having higher levels of control, knowledge, self-efficacy of their health, and perceive less barriers to health, they are likely to have increased engagement in positive health related behaviors [29,37]. Whereas persons who perceive themselves as having less control and to having increased barriers are more likely to engage in less positive health behaviors [29,37]. Therefore, it appears that the way we perceive health has implications for how we practice health. However, little is known how PWO perceive their own body weight, which is fruitful area for future research.

Attributions and Obesity

It is apparent that perceptions of health have implications for how we engage in health-related behaviors. However few studies have investigated how PWO perceive their own body weight. Of the existing literature, researchers have recently begun looking toward attribution formation to garner a better understanding around how PWO perceive their weight. Attribution theory refers to the cognitive process humans engage in to determine cause and effect [38].

Attribution formation can be viewed in domains of locus of causality (cause of something), stability, and controllability [39]. To date, researchers have only explored locus of causality attributions of body weight among PWO. In other words what do PWO attribute the cause of their body weight are locus of causality attributions. Locus of causality can be subdivided into internal and external attributions. Internal attributions refer to attributing the cause of an effect with internal factors, such as personality traits, attitudes, or mood state [38]. External attributions refer to attributing a cause of an effect with external factors such as the environment, coincidence, luck, and behaviors of other people [38].

Studies have found that when PWO attribute their body weight toward negative internal characteristics (blame, laziness, weakness), they are likely to engage in fewer healthy eating behaviors, increased binge eating, decreased levels physical activity and perform worse in weight loss programs [40,41]. Of which, when PWO are exposed to high levels of weight-based stigma, they are likely to internalize these messages and view themselves with negative internal attributions [40]. Research is scarce when investigating external attribution formation (i.e., genetics) to account for body weight among PWO. One study found that PWO who made external attributions were less likely to be physically active and less likely to consume healthy food sources when compared to internal attribution formation [42]. However, this and the other studies around attribution formation of body weight among PWO have only utilized quantitative methods. These studies aided in identifying the saliency and importance of attribution formation on behavioral health outcomes. However, the literature is yet to explore an in depth understanding of what internal or external attributions are most salient regarding body weight among PWO. Moreover, these studies do not explicitly describe how these attributions are formed. Therefore, it is recommended that future research implements qualitative research designs to foster a deeper understanding of how PWO attribute their body weight and how they formed these attributions. Research questions may include what are the narratives of PWO regarding causes of their weight? And how did they develop these narratives?

As obesity prevalence appears to be a complex multifactorial etiology, investigating the perceptions of PWO will aid in connecting biological, psychological, and social factors areas of research. Of which, future areas in research will also aid in better understanding the perspectives of PWO

who may be underrepresented and be at an increased risk for navigating a higher frequency of risk factors for obesity prevalence. Of which, developing a better understanding around these factors will better equip human service agencies to meet the needs of underserved populations.

Conclusion

It is evident that obesity development is an amalgamation of a complex relationship between biological, psychological, and social factors. Emerging areas of research continue to highlight that obesity prevalence is due to biopsychosocial mechanisms, rather than solely on biological means as originally thought. This paper surmised a plethora of factors that may contribute toward obesity prevalence. Of which, health beliefs among attribution formation are a noteworthy area for further exploration. Whereas researchers illuminated the impact of our perceptions of health that largely impacts how we practice health related behaviors [29,37]. Particularly for attribution formation, where persons who attribute weight with negative internal characteristics (blame, laziness, weakness), are at an increased risk for engaging in poorer health outcomes and decreased rates of beneficial health behaviors [40,41]. However, little is known about how PWO think about their weight nor what salient factors they attribute toward their weight. These areas in research point toward the need to investigate these perspectives among PWO, particularly given that obesity rates are slated to continue to rise [11].

Conflicts of Interest

The authors declare no conflicts of interest.

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