Adult Food Insecurity and the Hunger-Obesity Paradox: Are These Distinct Consumer Segments?

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The co-existence of food insecurity and obesity leads to the claim that these food consumption conditions may be simultaneously addressed. Using NHANES data, this study shows that the behaviors associated with these conditions differ sufficiently and should be treated as separate issues in the world of public health.

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EXTENDED ABSTRACT

Dietz (1995) noted a positive correlation between food insecurity and obesity, and labeled this counter intuitive relationship the hunger–obesity paradox. The paradox continues to be a relevant topic of research as both food insecurity and obesity maintain a troubling presence in the US. In 2012, 14.5 percent of households were food insecure, meaning that these households had difficulty at some time during the year providing enough food for all their members due to a lack of resources (Coleman-Jensen et al. 2013). Meanwhile, national estimates in the US indicate that more than two-thirds (68.5%) of adults were either overweight or obese in 2011 – 2012 (Ogden et al. 2014).

Researchers at the Yale Rudd Centre claim that it may be feasible to address both problems simultaneously since the goal is to see that individuals have access to sufficient and nutritious food (The Economist 2014). However, while these conditions co-exist and, in some cases, within the same person, there are also separate segments exhibiting these conditions; some individuals suffer from hunger and malnutrition while others suffer from obesity and diet-related disease (Ashe and Sommino 2012).

Past empirical investigations into the hunger-obesity paradox largely cover 1) segmentation, and 2) diet and consumption behaviors. The first and largest stream of research attempts to describe the segment of adults where these conditions co-exist using demographic variables. Here, research consistently shows that women who were food insecure were more likely to be obese than women who were food secure, while men who were food insecure were less likely to be overweight than men who were food secure (Burn 2004; Dinour et al. 2007; Franklin et al. 2012; Larson and Story 2011, Lariai 2010). The second area, which is the focus of this study, pertains to diet and consumption behaviors. The findings in this area show that as food insecurity increases, many adults alter their food intake as food resources run low (Grutzmacher and Gross 2011); individuals consume fewer fruits and vegetables (Burns 2004); food insecure individuals were less likely to engage in fat lowering behaviors (Mello et al 2010); diet quality and health change through an overabundance of less healthful foods in the home (Nackers & Appelhans 2013).

Using the 2009 – 10 NHANES data, the objective of this research is to investigate whether these food insecurity conditions are also representative of individuals who are overweight. If not, then addressing them may not, by default, help lessen the prevalence of overweight and obesity. The NHANES program examines a nationally representative sample of about 5,000 persons each year (CDC 2013), and the 2009 – 10 dataset contains information from 10,253 individuals of all ages. The data collection process has two components, a questionnaire, followed by an examination at a mobile medical center. The questionnaire includes the Current Population Survey (CPS) Food Security Supplement Module to determine the level of food insecurity in the household. Each respondent also provides information about the food in the house, diet quality, consequences of food insecurity, and self-assessments of physical and mental health statuses. The examination component provides the actual Body Mass Index (BMI) for each respondent.

In this analysis, the definitions of weight status are defined by the CDC (2008). If the individual has a BMI less than 18.5, he or she is considered underweight, and is of a healthy or normal weight when the BMI is between 18.5 and 24.9. However, if the BMI is between 25 and 29.9 he or she is considered overweight and an adult who has a BMI of 30 or higher is considered obese. Household food security is based on the CPS, which is a series of 10 questions (with 8 additional questions for households with children) that gauge a variety of specific conditions, experiences, and behaviors that serve as indicators of the varying degrees of severity of food security (Bickel et al. 2000).

For purposes of this study, individuals for whom no BMI data are available, who were under age 20, who did not respond to the food security questions, or women who were pregnant are deleted from the data, leaving a sample of 5,500 individuals.

Analyses were prepared by regression, where the dependent variable is one of the many food related behaviors prevalent in food insecure households. The independent variables indicate the weight and the food security statuses of the respondent. The sign and significance of the coefficients indicate whether these behaviors can be predicted from the presence of one, or both of these conditions.

The results show, as expected, that as food insecurity increases all foods (except soft drinks) become less available. However, across all weight statuses, there is no significant difference in the availability of nutritious food. This may imply that access to, and availability of nutritious food is not as much of a problem in the fight against obesity.

Relatedly, while both food insecure households and obese individuals recognize the unhealthiness of their diets, these results show food insecure households are concerned about quantity as well as quality, while quantity does not appear to be a concern as weight status increases.

Finally, both food insecurity and obesity take a toll on overall perceived health and activity levels. First, while perceived general health status declines as both conditions worsen, obesity does not create the same levels of anxiety that are created by food insecurity. Also, while eating home prepared meals together becomes less frequently as food insecurity increases, the same is not true as weight status increases. Therefore, interventions that focus on activities surrounding meal behaviors need to recognize the changes in these activities inherent with the specific condition.

In summary, while there is an intuitive connection between food insecurity and obesity, the behaviors associate with these conditions differ sufficiently and, consequently, should be addressed as separate issues in the world of public health.

REFERENCES


