

Depression puts low-income population at even greater risk for obesity and poor nutrition

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In a study published in the *Journal of the Academy of Nutrition and Dietetics*, researchers from the RAND Corporation report that for people receiving food assistance there are significant links between depression, poor dietary quality, and high body mass index (BMI). They suggest that understanding the risk of depression among Supplemental Nutrition Assistance Program (SNAP) participants could be important to understanding the relationship among SNAP participation, diet, and weight.

"This study focuses on a group that is of particular importance, low-income, primarily African American, residents of urban food deserts," explained lead investigator Karen R. Flórez, DrPH, Associate Social Scientist, RAND Corporation, Santa Monica, CA. "This group is at particularly high risk of obesity and poor nutrition, and the overall sample descriptives bear this out. Thus, the finding that [depression](#) is associated with even higher risk within this already [high risk group](#) suggests a potential avenue for intervention is a focus on mental health, especially depressive symptomatology."

Depression was a strong predictor of both [dietary quality](#) and BMI in the study, which was conducted in two low-income neighborhoods in Pittsburgh, PA. Specifically, a higher score in depressive symptomatology was associated with lower scores in dietary quality, as well as with higher BMI scores (after controlling for other individual

factors). Only age and college education or higher were significantly associated with dietary quality, while gender and a child present in the household were the only demographic factors associated with BMI. Food insecurity was associated with high BMI, but was unrelated to dietary quality.

There have been numerous studies of the prevalence of obesity across socioeconomic status (SES). Data indicates that about 29% of women living well above the poverty line are obese, compared to 42% of women in low-income households (less than 130% of the poverty line). While participation in SNAP increases [food security](#), some studies have shown that participants consume more sugar-sweetened beverages, less fruit, more total fat and added sugars, and more excess calories than nonparticipants.

There is also some evidence that depression may be linked to low SES, as well as data showing that food insecurity may increase depression. While the causal direction of the association, e.g. does depression increase food insecurity, or vice-versa, is unknown at this time, the association remains. This is the first study to investigate possible associations between depression and weight outcome, while controlling for [food insecurity](#).

The researchers used data from the Pittsburgh Hill/Homewood Research on Eating, Shopping and Health (PHRESH), a five-year study of a group of 1,372 residents living in "food deserts." These food deserts are approximately four miles from one another in the City of Pittsburgh and have poor access to healthy food options. Data collectors, who were neighborhood residents, interviewed the main food shopper in each household. Participation in SNAP or other food-stamp-type assistance programs was determined, as well as dietary quality assessment by two 24-hour recalls. These recalls were then used to derive Health Eating Index-2005 scores, which comprise 12 components, including the five

major food groups in the USDA pyramid (i.e., total fruit, total vegetables, total grains, milk, and meat and beans).

Depression and anhedonia (the inability to experience pleasure from activities usually found enjoyable) were assessed with the Patient Health Questionnaire-2. BMI was measured by the interviewers. Food security was assessed with the 18-item U.S. Household Food Security Survey Module and various sociodemographic characteristics such as age, sex, level of education, employment status and income were determined. The final sample included 639 main household food shoppers.

"The association between depressive symptomology, elevated BMI, and lower dietary quality among low-income, primarily African American residents living in a [food](#) desert suggests the potential for mental health interventions to have broader benefits in this population," noted Dr. Flórez. "However, the directionality of this association is unclear and improving diet and reducing weight may also improve mental health symptoms. Further longitudinal studies should assess these possibilities."

More information: "Associations between depressive symptomatology, diet, and BMI among participants in the Supplemental Nutrition Assistance Program," by Karen R. Flórez, DrPH; Tamara Dubowitz, ScD; Madhumita (Bonnie) Ghosh-Dastidar, PhD; Robin Beckman, MS; and Rebecca Collins, PhD, *Journal of the Academy of Nutrition and Dietetics*, [DOI: 10.1016/j.jand.2015.01.001](https://doi.org/10.1016/j.jand.2015.01.001)

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