



Food Insecurity, Chronic Disease, and Health Among Working-Age Adults

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What Is the Issue?

By definition, households that are food secure have access at all times to the kinds and quantities of foods needed for all members to enjoy an active, healthy life. Households that are food insecure have difficulty in consistently obtaining adequate food because of limited economic resources for food. Households that are food insecure also face other challenges—in particular, with respect to health. Extensive literature has examined the associations between food security and health, almost all of it showing the strong correlation between food insecurity and negative health outcomes.

Much of that research is understandably focused on children. Working-age adults have been examined less frequently, and that research has usually focused on a single outcome. Moreover, this research usually highlights differences between food-secure and insecure households; few studies look at health outcomes over the range of food security status—high, marginal, low, and very low. And there are no studies to date that look at health outcomes simultaneously.

In this report, we examine the relationship between food security and health as measured by 10 chronic conditions identified by the Centers for Disease Control and Prevention (CDC) as particularly worthy of research because of their prevalence, cost, morbidity, and preventability. We focus on the role of food security as a predictor of health among working-age adults and the differences in health outcomes across the range of household food security: high, marginal, low, and very low.

What Did the Study Find?

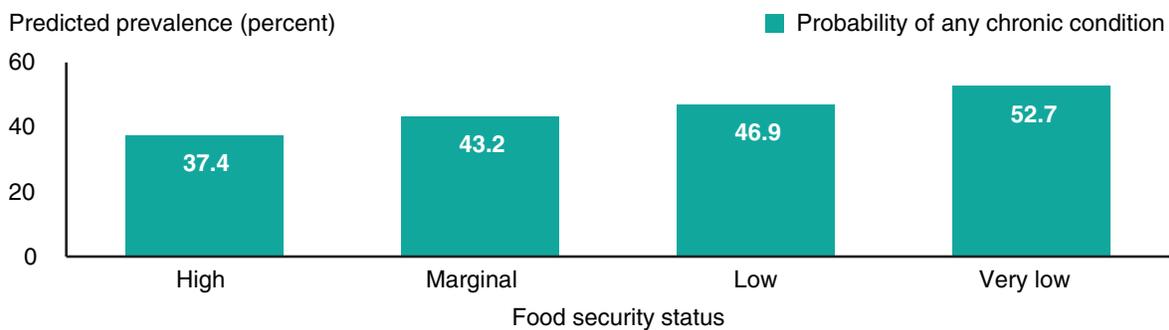
In general, lower food security is associated with higher probability of each of the chronic diseases examined—hypertension, coronary heart disease (CHD), hepatitis, stroke, cancer, asthma, diabetes, arthritis, chronic obstructive pulmonary disease (COPD), and kidney disease. Food security status is also strongly related to the likelihood of chronic disease in general, to the number of chronic conditions reported, and to self-assessed health. Moreover, differences between adults in households with marginal, low, and very low food security are very often statistically significant, which suggests that looking at the entire range of food security is important for understanding chronic illness and potential economic hardship. Indeed, food security status is more strongly predictive of chronic illness in some cases even than income.

ERS is a primary source of economic research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

Income is only significantly associated with 3 of the 10 chronic diseases—hepatitis, arthritis, and COPD—while food insecurity is significantly associated with all 10. In particular, we find that:

- Adults in households with lower food security status have elevated probabilities of chronic disease diagnosis for all of the conditions we examine. For example, adults in very low food-secure households are 10.5 percentage points more likely than adults in high food-secure households to be diagnosed with hypertension.
- Adults in households with very low food security were 15.3 percentage points more likely to have any chronic illness than adults in households with high food security, as is shown in the figure below. This is a 40-percent increase in overall prevalence.
- Adults in households with marginal food security were 9 percentage points less likely to report excellent health, compared to those in households with high food security, and 1.3 percentage points more likely to report poor health.
- The number of chronic conditions for adults in households with low food security is, on average, 18 percent higher than for those in high food-secure households.

Adults in households with more severe food insecurity are more likely to have a chronic illness



Source: USDA, Economic Research Service calculations using National Health Interview Survey data 2011-2015.

How Was the Study Conducted?

The authors used 5 years of data (2011-2015) from the National Health Interview Survey (NHIS), a nationally representative household survey with a complex survey design that is sponsored by the Centers for Disease Control and Prevention's National Center for Health Statistics. The NHIS is the source for national statistics on the health of the U.S. population. Food security is measured using a series of 10 questions about experiences and behaviors of household adults that indicate food insecurity in the 30 days prior to the survey, such as being unable to afford balanced meals, cutting the size of or skipping meals because of too little money for food, or being hungry because of too little money for food. The study sample included non-senior adults (age 19-64) in households below 200 percent of the Federal poverty line. Regression estimates were adjusted to account for the complex survey design of the NHIS. The regression adjustment shows the conditional association—or, correlation—between food security status and health outcomes.

Our main sample includes adults in households with income at or below 200 percent of the Federal poverty line (41,854 total); estimates are regression-adjusted for age, gender, marital status, employment status, number of children (below age 18) in the household, total size of household, race, education, health insurance, and income (as a fraction of the Federal poverty line).