Food Insecurity Linked to Higher Mortality in People With NAFLD and Advanced Fibrosis

One in five deaths among low-income adults with advanced fibrosis could be averted if they had access to adequate food.

July 5, 2021 By Sukanya Charuchandra

Food insecurity is associated with 46% higher risk of mortality among people with non-alcoholic fatty liver disease (NAFLD) and 37% higher risk for people with advanced liver fibrosis, accordig to findings were presented at the 2021 International Liver Congress.

“Food insecurity is significantly associated with greater all-cause mortality in adults with NAFLD and advanced fibrosis, independent of other known causes,” the researchers concluded. “Interventions that address food insecurity among adults with liver disease should be prioritized to improve health outcomes in this population.”

Food insecurity—defined as insubstantial or unsure access to nutritionally-sufficient food—affected some 35 million people in the United States prior to COVID-19. But this number has risen during the pandemic and may now be as high as 50 million, Ani Kardashian, MD, of the University of Southern California in Los Angeles, said at a conference press briefing.

Among people with reduced access to nutritionally rich food, consumption of cheap, calorie-dense food can lead to obesity, which is linked to an increased risk of fatty liver disease. Arising from the accumulation of fat in the liver, NAFLD and its more severe form, non-alcoholic steatohepatitis (NASH), are responsible for a growing proportion of advanced liver disease worldwide. As a result of inflammation, NAFLD can lead to the buildup of scar tissue (fibrosis), cirrhosis and even liver cancer.

Kardashian’s team examined the potential association between food insecurity and mortality in a population of adults with NAFLD and advanced fibrosis.

The team carried out a retrospective cohort study using data from the U.S. National Health and Nutrition Examination Survey for the period between 1999 and 2014. Food insecurity was assessed using the U.S. Department of Agriculture Food Security Survey Module and mortality data was taken from the National Death Index through December 31, 2015.

A total of 34,134 adults over the age of 20 were included and followed for around 7.2 years. Among this population, 4,816 people had NAFLD; in this group, 58% were men, 14% fell beneath the poverty line and 28% experienced food insecurity. In addition, 1,654 people had advanced fibrosis; in this group, 55% were men, 15% were below the poverty line and 21% experienced food insecurity.

Food insecurity was linked to a 46% higher risk of all-cause mortality and a 37% higher risk of advanced fibrosis, after adjusting for age, race and ethnicity, education, insurance, body mass index, smoking, indicators of diabetes and poverty.

On the other hand, individuals with NAFLD or advanced fibrosis who had access to adequate food had a lower mortality risk. For individuals who were food secure, all-cause mortality was 11 per 1,000 person-years among people with NAFLD and 28 per 1,000 person-years among those with advanced fibrosis. In comparison, all-cause mortality was 15 per 1,000 person-years and 50 per 1,000 person-years for food-insecure individuals with NAFLD and advanced fibrosis, respectively.

People who were food insecure were less likely to be white, more likely to experience poverty and less likely to have health insurance. They were also more likely to develop obesity and diabetes.

All-cause mortality was 36% higher among people with public insurance compared to those with private insurance. Those with a smoking history had a 45% higher risk of all-cause death than non-smokers.

Since food insecurity and poverty were significantly linked for those with advanced fibrosis, the researchers looked specifically at the impact of poverty. For people with advanced fibrosis who experienced poverty, food insecurity was associated with a more than twofold higher risk of death. However, this association did not hold for those who did not experience poverty.

What's more, the team estimated that if food insecurity were eliminated, 3% of deaths from NAFLD, 7% of deaths from advanced fibrosis and 22% of deaths from advanced fibrosis along with poverty could be prevented.

"This study highlights the importance of us really focusing on upstream social determinants of health and the long-term outcomes of people with NAFLD and advanced liver fibrosis," Kardashian said during her presentation.

Click here for more reports from the International Liver Congress.

Click here to learn more about fatty liver disease.

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.hepmag.com/article/food-insecurity-linked-higher-mortality-fatty-liver