Dietary Patterns Associated with Food Insecurity Predict a Worse Prognosis for U.S. Cancer Survivors: NHANES 1999-2018

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**Abstract**

Purpose

Food insecurity—the lack of unabated access to nutritious foods—is a consequence many cancer survivors face. Food insecurity is associated with adverse health outcomes and lower dietary quality among the general public. In a previous analysis, we extracted dietary patterns in U.S. food-insecure cancer survivors using penalized logistic regression, suggesting poor diet quality in this population. This analysis evaluated the association between these patterns and survival after a cancer diagnosis. Comparisons with other dietary patterns analysis techniques were conducted.

Methods

           We implemented two dietary pattern analysis approaches: penalized logistic regression and principal components analysis. Using nationally representative data from the National Health and Nutrition Examination Survey (NHANES) study, we extracted six dietary patterns, two of which (the FI and SNAP patterns) were positively associated with being a food-insecure cancer survivor. Additionally, we evaluated the HEI-2015 for comparison. Cox proportional hazards models assessed the relationship between the diet quality indices and survival after a cancer diagnosis.

Results

           There were 981 deaths from all causes and 343 cancer-related deaths. After multivariable adjustment, we found higher risks of all-cause mortality associated with higher adherence to the FI (HR: 1.23; 95% CI: 1.06-1.42) and SNAP (HR: 1.20; 95% CI: 1.03-1.40) patterns among cancer survivors.

Conclusion

           Higher adherence to prevailing dietary patterns specific to the U.S. food-insecure cancer survivor population may lead to a worse prognosis.

**Keywords**

nutritional epidemiology; survivorship; dietary patterns; food insecurity; regularization