Food Insecuirty is Associated with Metabolic Syndrome in NHANES participants 1999-2014

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Background: In 2011, it was estimated that 14.9 percent of households were food insecure at least some of the year. Heart disease is the leading cause of death in the US and diabetes is seventh. Metabolic syndrome (MetS) is associated with a twofold increased risk of developing cardiovascular disease and a fivefold increase risk in developing type 2 diabetes. A better understanding of the association between food security and poor metabolic health can improve the effectiveness of public health interventions.

Methods: This study used data from 13,793 18-65yr old participants collected as part of NHANES 1999-2014. The association between food insecurity and MetS was estimated using relative risk regression. We adjusted for race/ethnicity, age, physical activity, smoking status, education and income. Food insecure was analyzed as both a binary (food secure/food insecure) and ordinal (full/marginal/low/very low food security) variable.

Results: The unadjusted prevalence of MetS in food secure individuals was 0.30(0.29-0.32)% and in food insecure individuals was 0.33(0.30-0.36)%. Food insecurity was associated with MetS in females [adjusted relative risk (ARR) 1.41(1.04-1.92)] but not in males [ARR 1.06(0.77-1.47)]. Low food security was associated with MetS (when compared to full food security) in females [ARR 1.86(1.26-2.73)] but not males [ARR 1.19(0.79-1.79)].

Conclusions: Food insecurity is associated with a moderately increased risk of MetS in females. Further research is required to access the reasons for these gender differences. It is important for public health professionals to consider access to affordable high quality food when working to promote good metabolic and cardiovascular health.