


PANEL: Food Insecurity and Health-related Outcomes



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My Background

Child of Appalachia (Western PA)

Registered Dietitian

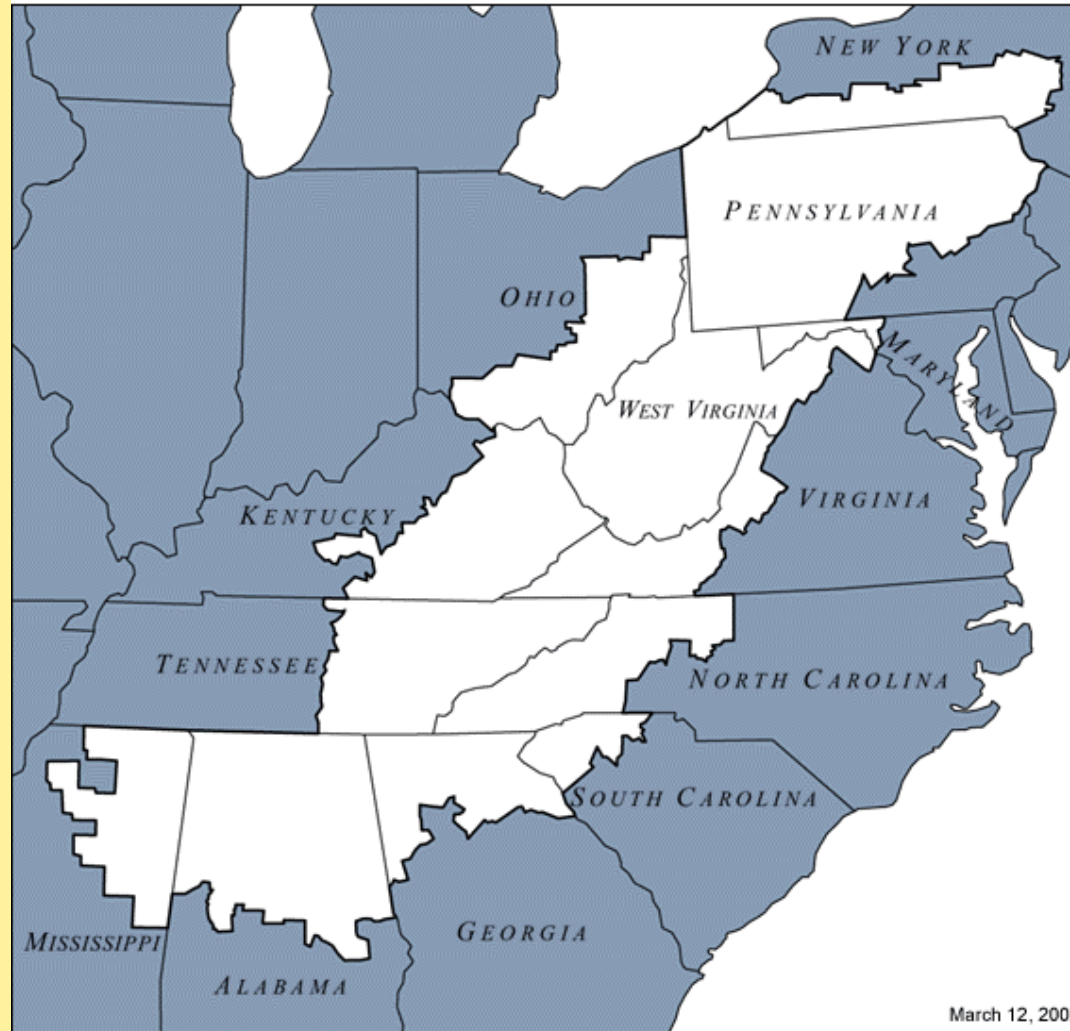
Educator

- School of Applied Health Sciences and Wellness



Appalachia, U.S.

The Appalachian Region



Source: Appalachian Regional Commission

Athens Farmers Market

www.athensfarmersmarket.org





Objective

- To identify health-related outcome variables measured in food security-related research.
 - Functional health and well-being

Consequences of Food Insecurity

- Physical Impairments related to insufficient food
- Psychological issues due to lack of access to food
- Sociofamilial disturbances



Food insecurity...

...is barrier to positive health and nutrition outcomes.

Sources: Holben, 2010; Holben, 2012





Health Status

- Appalachian Ohio Pilot Study
 - To examine the relationship between household food security status and measures of functional health status.
 - Participants: 1,006 adults
 - Clinic setting (n=605)
 - Community setting (n=401)
 - Outcomes
 - Household food security (USDA measure)
 - Functional health and well-being (SF-36)



Health Status

- Appalachian Ohio Pilot Study
 - Functional health and well-being (SF-36)
 - Medical Outcome Study Short Form-36 (SF-36)
 - Survey (from Medical Outcomes Study, 1992)
 - 36 items representing an 8-scale profile (0-100 score)
 - » Physical functioning
 - » Role limitations because of physical health problems
 - » Bodily pain
 - » General health
 - » Vitality
 - » Social functioning
 - » Role limitations because of emotional problems
 - » Mental health



Health Status

- Appalachian Ohio Pilot Study
 - Individuals living in food insecure households in a rural Appalachian Ohio community.
 - Poorer health status (physical health, bodily pain, general health, vitality, social functioning, role limitations due to emotional problems, mental health, and role limitations due to physical problems) ($p < .05$).
 - Food insecurity was associated with poor health, even at minimal levels ($p < .05$).

Pheley et al., 2002.



Health Status

- Perceived Health Status
 - Validated measure of functional health status
 - One-item on general health



Chronic Disease Risk

- [Follow-up] Appalachian Ohio Study
 - To assess the relationship between household food security status and clinical measurements of several chronic health risks, including those that can contribute to obesity and diabetes.
 - Participants: 2,580 adults (community-based) (n=808, clinical health assessment)
 - Outcomes
 - Household food security (USDA measure)
 - Functional health and well-being (SF-36)
 - BMI, BP, Chol, Glu, HbA1c, Hgb



Chronic Disease Risk

- [Follow-up] Appalachian Ohio Study
 - Individuals living in food insecure households in a rural Appalachian Ohio community.
 - Clinical measures within recommended ranges and did not differ by food security status (BP, Chol, Glu, HbA1c, Hgb) ($p > .05$)
 - BMI was greater among participants from food-insecure households, especially among women ($p = .04$)

Holben & Pheley, 2006.



Chronic Disease Risk

- [Follow-up] Appalachian Ohio Study
 - Individuals living in food insecure households in a rural Appalachian Ohio community.
 - Those with HbA1c level $> 7\%$ (33.9%) were more likely to come from food-insecure households than respondents with HbA1c $< 7\%$ (22.5%) ($P = .053$).
 - Of the 2,504 who noted their diabetes status, 298 (11.9%) reported having diabetes.
 - People who reported having diabetes were significantly more likely to live in food-insecure households (37.9%) than in food-secure households (25.8%) ($P < .001$).

Holben & Pheley, 2006.



Chronic Disease Risk

- Health Outcomes
 - Random vs. Fasting
 - CLIA-approved equipment



Obesity and Metabolic Syndrome

- US Children (12-18y) Study
 - To assess differences in adolescent obesity and metabolic syndrome by household food security using a nationally-representative cross-sectional survey.
 - Participants: 7,435 (1999-2006)
 - Outcomes
 - Household food security (USDA measure)
 - BMI, Waist Circumference
 - LDL, BP, Glu, TG.

Funding: USDA Ridge Grant.

Holben, Wang, & Taylor, unpublished.



Obesity and Metabolic Syndrome

- US Children (12-18y) Study
 - No significant differences were existed in mean BMI-for-age percentiles by food security status ($p = 0.087$)
 - Adolescents from marginally food secure (MFS, 44%, Odds Ratio: 1.44 [1.12-1.87]) and low food secure (LFS, 44.0%, OR: 1.44 [1.13-1.84]) households were significantly more likely to present with a BMI >85th percentile than high food secure (HFS) households.

Funding: USDA Ridge Grant.

Holben, Wang, & Taylor, unpublished.



Obesity and Metabolic Syndrome

- US Children (12-18y) Study
 - Adolescents from HFS households had significantly lower mean central obesity than those from MFS and LFS households ($p < 0.001$).
 - MFS (52%, OR: 1.52 [1.08-2.15]), LFS (42.0%, OR: 1.42 [1.11-1.80]) and very-low food secure (VLFS, 51%, OR: 1.51 [1.10-2.08]) were significantly more likely to present with central adiposity than those from HFS households.

Funding: USDA Ridge Grant.

Holben, Wang, & Taylor, unpublished.



Obesity and Metabolic Syndrome

- US Children (12-18y) Study
 - Only those from HFS households had significantly higher HDL than children from LFS households ($p = 0.019$).
 - There were no significant differences in blood glucose, lipids, blood pressure or metabolic syndrome by food security category.

Funding: USDA Ridge Grant.

Holben, Wang, & Taylor, unpublished.



Obesity and Metabolic Syndrome

- Health Outcomes
 - Random vs. Fasting
 - CLIA-approved equipment



Others to Consider...

- **Social Capital**
 - A measure of trust, reciprocity, and social networks. Martin et al., 2004
 - 7-item measure. Sampson et al., 1997
- **Produce Intake and Behaviors**
 - Servings, Perceived benefit/self-efficacy/control, Perceived diet quality, Stages of change Continuum.
Townsend & Kaiser, 2005; Townsend et al., 2003

Thanks!

