Food Insecurity

Description/Etiology
There are several terms used in the literature to discuss food insecurity, including food hardship, food insufficiency, and hunger. However, the most commonly used term for definition and measure is that used by the United States Department of Agriculture (USDA), which describes household food security as all members of a household, at all times, having access to enough food for an active, healthy life. Conversely, food insecurity indicates that the availability of adequate, nutritionally safe foods for the household is limited or uncertain. Since 2006, four categories of food security have been identified, which are based on the USDA Core Food Security Module: high, marginal, low, and very low food security.

Food insecurity has been associated with a number of issues that lead to poor health in women, including obesity, anxiety, depressive symptoms, risky sexual behavior, poor coping strategies, and negative pregnancy outcomes. Adults who are food insecure are more likely to experience depression and poor mental health. Food insecurity in adults has also been associated with diabetes, hypertension, hyperlipidemia, and heart disease.

Researchers have also found behavioral and cognitive deficits for children and adolescents who are in food-insecure households. Food insecurity has been associated with higher rates of behavioral issues in three-year olds; psychosocial deficits, increased absenteeism, poor academic performance, higher anxiety, and depression in school-aged children; and depression and suicidal attempts in adolescents. Child food insecurity has also been associated with a greater risk for being overweight. Although seemingly counterintuitive, research has linked childhood overweight to food insecurity, citing poor quality diet as a possible reason.

Instruments available for measuring food security can be classified into three categories: single items for measuring food security/insecurity at the household level such as the USDA food sufficiency question, the Expanded Food and Nutrition Education Program (EFNEP) Reporting System Behavior Checklist, and the Concern About Food Security question; scales for measuring food insecurity at the household level, such as the Community Childhood Hunger Identification Project (CCHIP) Hunger Index, the Radimer/Cornell Measures of Hunger and Food Insecurity, the U.S. Household Food Security Scale, the 6-item short form of the Food Security Survey Module; and scales for measuring food security at the community level such as the Second Harvest National Food Bank network Agency Survey and the Task Force on Hunger and Homelessness Survey. Test reliability is not available for the single-item instruments, since they are single questions. The scales for measuring food insecurity have demonstrated reliability; Reliability of the scales for measuring food security at the community level has not been reported.

Facts and Figures
Food insecurity is a global concern: an estimated 821 million persons worldwide do not get enough food in socially acceptable ways to engage in a healthy lifestyle. Among the countries identified as having significant food concerns are: Africa, South America, and Asia.(FAO, 2018)

In 1995, reports published by the USDA on food insecurity indicated that approximately 11.9% of households experienced food insecurity. A 2013 USDA report found that 14.3% of U.S. households were food insecure at some time during that year; 5.6% of those households...
were considered to be very low food security. In 2013 USDA reports also indicated that approximately 9.9% of households with children and adults were food insecure in the previous year (Coleman-Jensen et al., 2014).

**Risk Factors**

Individuals in low income households are at risk for food insecurity

**Signs and Symptoms/Clinical Presentation**

Adults who are food insecure are more likely to experience poor mental health, including depression. Food insecurity in adults has also been associated with obesity, diabetes, hypertension, hyperlipidemia, and heart disease. Food insecurity has been associated with higher rates of behavioral issues in three-year olds; psychosocial deficits, anxiety and depression in school-aged children; and depression and suicidal attempts in adolescents. Child food insecurity has also been associated with a greater risk for being overweight.

**Nutritional Assessment**

› **Patient Medical History**
  - Review the medical chart and ask about:
    - Medical conditions (e.g., diabetes, cardiovascular disease, hypertension)
    - Family history of medical conditions (e.g., diabetes, cardiovascular disease, hypertension)
    - Signs and symptoms (e.g., nutrient deficiencies, fatigue, weight loss or overweight)
    - Medications (e.g., vitamins, other nutritional supplements)
    - Level and type of regular physical activity (e.g., mobility)

› **Patient Diet History**
  - Conduct a diet analysis by asking the patient to complete a diet history (focus on type, size, frequency, and content of meals)
  - Useful tools for evaluating the patient’s dietary strengths and weaknesses include a food frequency questionnaire and a 3-day diet recall (i.e., patient recall of all foods and beverages consumed in a 3-day period) that includes 1 weekend day
  - Ask about personal habits, including alcohol, caffeine, and soda consumption; smoking; eating at night; and frequenting vending machines and fast food
  - Ask about food consumption sources including food banks, shelters, and government food assistance programs (e.g., SNAP, WIC, child nutrition, and nutrition programs for seniors)
  - Single-item instruments to screen for household food security include:
    - The USDA Food Sufficiency Question
      - Which of the following statements best describes the food eaten in your household?
        - Enough of the kinds of food we want to eat
        - Enough but not always the kinds of food we want to eat
        - Sometimes not enough to eat
        - Often not enough to eat
    - The Expanded Food and Nutrition Education Program (EFNEP) Evaluating/Reporting System question
      - How often do you run out of food before the end of the month?
        - Do not run out of food
        - Seldom
        - Sometimes
        - Most of the time
        - Almost always
    - Concern about food security question
      - In the past 30 days, have you been concerned about having enough food for you or your family?
  - Assess for anxiety and depression, which can interfere with dietary intake

› **Patient Anthropometric Data**
  - Calculate the patient’s body mass index (BMI) by dividing body weight (kilograms) by height (meters squared) or 703 multiplied by weight (pounds) and divided by height (inches squared)
    - Extremely underweight: < 18.5; underweight: 18.5–20; normal: 20–25; overweight: 25–30; obese: > 30
    - In patients over 65 years of age, evidence suggests that a slightly higher BMI (25–27) may help prevent bone deterioration and is associated with a lower risk of mortality
    - In some cases, body composition testing (e.g., dual-energy X-ray absorptiometry scan, skin calipers) may be necessary
Physical Findings of Particular Interest
• Malnutrition
• Overweight
• Obesity

Laboratory Tests That May Be Ordered
• CBC will assess general health status, anemia, and other abnormalities
• Lipid panel to assess for cholesterol abnormalities and high triglycerides
• Blood glucose levels may be ordered to assess for diabetes

Treatment Goals
Provide nutrition education to patient/family on consuming a healthy diet that contains a variety of foods, is low in saturated fat, sugar, and sodium and high in fiber, and cost-effective foods that adhere to these guidelines. Provide resources to patient/family to help utilize food dollars in the most effective manner to achieve a healthy, nutritious diet. Provide nutrition education to manage other clinical diagnoses such as overweight, obesity, hypertension, hyperlipidemia, and diabetes
• Counsel patient/family on economical approaches to meal planning using resources such as:
  – Dietary Guidelines for Americans
  – USDA Food Plans
  - Four different plans (Liberal, Moderate-Cost,Low-Cost, and Thrifty) represent a nutritious diet at a different cost level
  – ChooseMyPlate.gov

Food for Thought
Nutrition education plays a role in food insecurity. In a study of 219 female heads of households receiving food stamps who were randomly assigned to nutrition education or non-nutrition education intervention groups, the nutrition education intervention group showed significantly improved food insecurity (Eicher-Miller et al., 2009)
Researchers who conducted a literature review demonstrated that food insecurity and obesity in women continue to be positively associated. However, they found mixed evidence of positive associations between food insecurity and obesity across age groups and among men. They also identified new mediators including gender, marital status, stressors, and food stamp participation that affect the association between food insecurity and obesity; and noted that some newer studies suggest that food stamp participation may exacerbate obesity outcomes (Franklin et al., 2012)
Researchers who conducted a systematic review of the literature support the notion that in food-insecure households parents may shield their children from food insecurity by compromising their own dietary intake, particularly of nutrient-dense fruits, vegetables, and dairy (Hanson & Connor, 2014)
Investigators who analyzed data from the National Health and Nutrition Examination Survey (NHANES) indicated that food assistance program participation was associated with increased body size as measured by BMI and waist circumference. However, food assistance program participation was not associated with food insecurity among youth (Kohn et al., 2014)
Food insecurity affects children emotionally, cognitively, and physically. Practitioners should consider assessing food insecurity in children directly with instruments such as the five items from the Child Food Insecurity Assessment Tool (Fram et al., 2015)
In a study by Quyen et al. (2014) examining the association between food insecurity and physical activity in the U.S. population, children who were food insecure participated in less moderate physical activity and adults were less likely to adhere to recommended physical activity guidelines in comparison to those who were not food insecure
In a study to explore the relationship between household food security and depression among low-income adults, researchers found that food insecurity was positively associated with depression in low income adults. However, in those who were Supplemental Nutrition Assistance Program (SNAP) participants, there was a lower magnitude of depression (Leung et al., 2015)
Florez et al. (2015) found that in SNAP participants, depression predicted poorer dietary quality and higher BMI. As a result of these findings, the researchers suggest that understanding a SNAP participant’s risk for depression could be important to understanding the relationship between participation in the SNAP program, diet, and weight

Red Flags
Low income households have been associated with food insecurity
What Do I Need to Tell the Patient/Patient’s Family?

› Educate about the health benefits of eating a diet that includes a variety of fruits and vegetables and lean sources of protein, is high in fiber, and is low in saturated fats (for more information on eating a balanced diet, see the USDA’s food guidance system, MyPlate, at http://www.choosemyplate.gov/). Encourage patients to maintain a healthy weight and increase physical activity.

› Provide information on food assistance programs such as the Supplemental Nutrition Assistance Program (SNAP), the School Nutrition Program (SNP), the Women, Infants, and Children (WIC) program, and the Elderly Nutrition Program.

› Provide information on nutrition assistance programs that offer nutrition education, such as the Expanded Food and Nutrition Education Program (EFNEP) and the Supplemental Nutrition Assistance Program–Nutrition Education Program (SNAP-ED).

References


