Chapter 16: Hunger at Home and Abroad
Objectives for Chapter 16

- Define food insecurity, food security, and hunger, and summarize the extent of food insecurity in the United States and worldwide.
- Explain some of the causes of food insecurity in the United States
- Explain some of the causes of food insecurity worldwide
- List populations at highest risk for experiencing undernutrition
- Describe the effects of chronic malnutrition
- Describe some of the strategies currently in use to reduce food insecurity
What Are Food Insecurity, Food Security, and Hunger?

• The USDA describes an American household as *food secure* if it has access at all times to enough food for an active, healthy life for all household members.

• A household is *food insecure* when any of its members do not have the resources they need to get adequate amounts of nutritious food.
# Ranges of Food Security

## Table 16.1 Ranges of Food Security

<table>
<thead>
<tr>
<th>Level of Food Security</th>
<th>Description of Conditions In the Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>High food security</td>
<td>No reported indications of food access problems or limitations</td>
</tr>
<tr>
<td>Marginal food security</td>
<td>One or two reported indications—typically of anxiety over food sufficiency or shortage of food in the house. Little or no indication of changes in diets or food intake</td>
</tr>
<tr>
<td>Low food security</td>
<td>Reports of reduced quality, variety, or desirability of diet. Little or no indication of reduced food intake.</td>
</tr>
<tr>
<td>Very low food security</td>
<td>Reports of multiple indications of disrupted eating patterns and reduced food intake.</td>
</tr>
</tbody>
</table>

What Are Food Insecurity, Food Security, and Hunger? Continued

• Many people in the United States and worldwide experience food insecurity
  • In 2011, 14.9 percent of American households (about 17.9 million households) were food insecure at least some time during the year
  • In 2011, 12.1 million adults lived in households with very low food security
  • These numbers are lower than in many countries
• **Hunger** is an individual-level physiological condition that may result from food insecurity
Prevalence of Food Insecurity in the United States

Figure 16.1
Spectrum of Food Security

Food security  Food insecurity  Malnutrition  Hunger  Starvation  Death
Developed country: a nation advanced in industrial capability, technological sophistication, and economic productivity
  - Examples: U.S., Canada, Australia, Western Europe

Developing country: a nation that is relatively less advanced in those areas
  - Examples: Brazil, China, India, Saudi Arabia

Least developed country: a nation that is least advanced in those areas
  - Examples: poorest countries of Africa
What Are Food Insecurity, Food Security, and Hunger? Continued-2

• Worldwide, the Food and Agriculture Organization of the United Nations (FAO) estimates that between 2012 and 2014, 11.3 percent of the world's population and 13.5 percent of the population of developing countries were undernourished.

• In 2014, The World Bank estimated that just over billion people living in developing countries lived on $1.25 a day or less.
What Are Food Insecurity, Food Security, and Hunger? Continued

- In developed countries, food insecurity typically results from factors affecting individuals, such as poverty or poor health.
- In developing and least developed countries, regional problems, such as discrimination, armed conflict, natural disaster, and population overgrowth, can be as significant as individual hardships.
What Causes Food Insecurity in the United States?

• In the United States, food insecurity is often caused by poverty
  • A family of four is considered impoverished if its annual income is at or below $23,283
  • In 2013, 45.3 million Americans (14.5 percent of the population) lived at or below the poverty level
ABC News Video: Viola Davis Fights to End Child Hunger

Good Morning America
June 12, 2014
What Causes Food Insecurity in the United States? Continued

• According to the U.S. Census Bureau, rates of food insecurity were greater for these groups:
  • Households with incomes below 185 percent of the poverty threshold (34.8 percent)
  • Households with children headed by a single woman (34.4 percent)
  • Black, non-Hispanic households (26.1 percent)
  • Hispanic households (23.7 percent)
What Causes Food Insecurity in the United States? Continued

• Steady employment is no guarantee of food security
• In 2012, about 10.6 million individuals were **working poor**: households where there is often too little money to feed everyone adequately
• People living in poverty often opt for cheap food rather than nutritious food
Employment Status of Food-Insecure Households

- 59.6% One or more employed full-time
- 15.4% Part-time, no full-time
- 12.2% Unemployed looking for work, non employed
- 6.5% Disabled, none in labor force
- 6.4% None in labor force for reasons other than disability

Figure 16.3
Does It Cost More to Eat Healthy?
What Causes Food Insecurity in the United States? Continued-2

• Health problems contribute to food insecurity among Americans
  • Chronic illness
  • Disability
  • Substance abuse
  • Mental illness
What Causes Food Insecurity and Poverty Around the Globe?

• Discrimination and inequality promote poverty
  • They contribute to reduced employment, lower educational achievement, fewer business opportunities
• Vulnerable groups: women, elderly, people with disabilities, refugees, orphans, migrant workers, the illiterate
• Male/female educational disparities are a critical problem
  • Two thirds of almost 900 million illiterate adults in the world are women
What Causes Food Insecurity and Poverty Around the Globe? Continued

• Political sanctions and armed conflicts
  • **Political sanctions** (such as boycotts and trade embargoes), wars, and civil unrest may cause food shortages and **famine**
  • Governments may divert money from nutrition programs and food distribution efforts
  • Humanitarian programs can be affected
What Causes Food Insecurity and Poverty Around the Globe? Continued-1

- Crop failure, natural disasters, and wasteful agricultural practices
  - Natural disasters, especially drought, are a prime cause of hunger in poor countries
  - Wasteful agricultural practices, including overcropping and overgrazing, threaten resources
- Population overgrowth
  - World population will reach 8 billion by 2025
  - Puts added strain on food production and nutritional status
Who Is at Increased Risk for Undernutrition?

• The following populations are at increased risk:
  • Pregnant and lactating women
  • Infants and children
  • The critically ill
  • Older adults
What Are the Effects of Chronic Malnutrition?

- Once people move along the continuum from food insecurity and undernutrition to **malnutrition** and hunger, recovery can be very difficult
  - Famine and malnutrition cause breakdown of stored fat, muscle tissue, internal organs
  - In starvation, adults can lose 50 percent of body weight
  - Deterioration of intestinal tract and liver
Downward Spiral of Poverty and Hunger

1. Lack of food
2. Fatigue, apathy, no ambition
3. Compromised health and disease
4. Weight loss
5. Anemia
6. Decreased growth
7. Malabsorption in GI tract
8. Loss of muscle mass
What Are the Effects of Chronic Malnutrition? Continued

• Children suffer impaired growth and development
  • Likely to experience both physical and mental problems
  • **Stunting** is primarily manifested in early childhood and includes malnutrition during fetal development; once it occurs, it is usually permanent
  • **Wasting** is a condition caused by extremely low energy intake from too little food; sometimes referred to as acute malnutrition
What Are the Effects of Chronic Malnutrition? Continued-1

• Impaired immunity can result in disease
  • Examples: fever, parasitic disease, pneumonia, measles, malaria

• An estimated one-third of childhood deaths in developing countries are associated with chronic hunger and malnutrition

• Diarrhea is common and can result in chronic dehydration and eventually death

• Vitamin and mineral deficiencies—called "hidden hunger"—can cause blindness, anemia, and other problems
Effects of Undernutrition

Overall: Withdrawn, lethargic, apathetic toward living

Hair: Unhealthy and discolored

Eyes: Poor night vision, inadequate tear production

Mouth and lips: Dry and sore

Liver: Enlarged and tender; poor functional ability due to low protein in diet. Also depleted glycogen reserves.

Abdomen: Swelling

Muscles: Weakness, atrophy, low muscle mass for gender and age

Teeth and gums: Teeth prone to chip, decay, or loosen

Heart: Abnormal pulse, circulatory difficulties

Skin: Rashes, sores, or peeling skin

GI tract: Diarrhea, malabsorption, or constipation

Figure 16.5
# TABLE 16.2 Common Illnesses in Malnourished Children

<table>
<thead>
<tr>
<th>Disease/Condition</th>
<th>Cause</th>
<th>Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhea</td>
<td>Pathogenic infections</td>
<td>Severe dehydration</td>
</tr>
<tr>
<td>Acute respiratory infection</td>
<td>Virus or bacteria</td>
<td>Pneumonia, bronchitis, colds, fast breathing, coughing, and fever</td>
</tr>
<tr>
<td>Malaria</td>
<td>Parasite (transmitted by a mosquito)</td>
<td>Fever, weakness, sweating, shivering, shaking, nausea, liver failure, infected red blood cells, kidney failure or bleeding in the kidneys</td>
</tr>
<tr>
<td>Measles</td>
<td>Respiratory illness caused by a highly contagious virus, from airborne droplets (coughing/sneezing)</td>
<td>Pneumonia, brain inflammation, infection, diarrhea, and seizures</td>
</tr>
</tbody>
</table>
### Table 16.3 Most Common Vitamin and Mineral Deficiencies among the Malnourished

<table>
<thead>
<tr>
<th>Vitamin or Mineral</th>
<th>Effects</th>
<th>Incidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A</td>
<td>Eye disease; blindness</td>
<td>Vitamin A deficiency is the leading cause of preventable blindness in children in developing countries</td>
</tr>
<tr>
<td>Iron</td>
<td>Iron-deficiency anemia</td>
<td>Most common nutritional disorder worldwide—affects over 30% of the world population. Half of pregnant women in developing countries are estimated to be anemic.</td>
</tr>
<tr>
<td>Iodine</td>
<td>Goiter, cretinism</td>
<td>Iodine-deficiency disorder is a serious public health threat. Households in 54 countries in the world are still iodine deficient.</td>
</tr>
</tbody>
</table>

What Are the Effects of Chronic Malnutrition? Continued-2

• Infant and child mortality rates increase
  • Malnutrition passes from one generation to the next
  • Women who were undernourished as girls may give birth to malnourished infants, who are more likely to experience chronic illness and premature death
What Can Be Done to Reduce Food Insecurity?

• At the local level, individuals, families, churches, and community relief agencies seek out and assist people who have insufficient resources

• Corporations and governments can help solve the hunger problem by providing food aid and creating economic opportunity
## Table 16.4 Food Assistance Programs in the United States

<table>
<thead>
<tr>
<th>Program</th>
<th>Eligibility</th>
<th>Description</th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supplemental Nutrition Assistance Program (SNAP), (formerly the Food Stamp Program)</td>
<td>Low income (for a family of four, the net monthly income cannot exceed $1,988)</td>
<td>Individuals who are eligible for food stamps are issued a debit card to purchase specified foods, such as fruits, vegetables, cereals, meats, and dairy products, at their local authorized supermarket. (Items such as alcohol, tobacco, nonfood items, vitamins and medicines, and hot foods are not covered.)</td>
<td>In 2014, more than 46.5 million people per month in the United States</td>
</tr>
<tr>
<td>Special Supplemental Nutrition Program for Women, Infants and Children (WIC)</td>
<td>At-risk low-income pregnant and lactating women, infants, and children less than 5 years old</td>
<td>The program provides nutritious, culturally appropriate food, including tortillas, brown rice, soy-based beverages, and a wide choice of fruits and vegetables, to supplement the diet. There are even some organic forms of WIC-eligible foods. The program also emphasizes nutrition education and offers referrals to health care professionals.</td>
<td>8.6 million women, infants, and children per month in 2013</td>
</tr>
<tr>
<td>National School Lunch Program</td>
<td>Children with families with incomes at or below 130% of the poverty level are eligible for free meals and those with incomes between 130% and 185% of the poverty level are eligible for reduced-price meals.</td>
<td>Eligible children receive free or reduced-price lunches each year. A subsidized breakfast is sometimes also available at schools.</td>
<td>More than 31.6 million American children in 2012</td>
</tr>
<tr>
<td>Summer Food Service Program</td>
<td>Available to communities based on income data</td>
<td>Federal program that combines a meal or feeding program with a summer activity program for children</td>
<td>More than 2.28 million children at 39,000 sites in the summer of 2012</td>
</tr>
<tr>
<td>Child and Adult Care Food Program</td>
<td>Available to communities based on income data</td>
<td>Program provides nutritious meals to low-income children and senior adults who receive day care or adult care outside the home. There are income guidelines and specific menu requirements for program participation.</td>
<td>3.3 million children and 120,000 adults receive meals and snacks each day as part of this program.</td>
</tr>
<tr>
<td>Meals on Wheels America</td>
<td>Age 60 or over</td>
<td>The programs provide meals at a community site or delivered to the home.</td>
<td>Brings meal to nearly 2.5 million seniors across the country</td>
</tr>
</tbody>
</table>

What Can Be Done to Reduce Food Insecurity? Continued

• Better land management and proper sanitation
  • Food security and land access are directly related
  • Safe water is as important as providing food
  • Water sanitation problems can be complex
• Fortification of foods
  • Foods fortified with micronutrients (iodine, iron, vitamin A) can help alleviate deficiencies
What Can Be Done to Reduce Food Insecurity? Continued-1

• Education is key
  • Researchers have found that societies with a more educated population enjoyed:
    • Better natural resource management
    • More rapid technological adaptation and innovation
    • Greater diffusion of information leading to greater productivity
    • Better health and longer lives
    • Greater personal development and participation in civil society
    • Access to a wider range of opportunities
Food Security

Figure 16.6

- Land management
- Fortification of foods
- Biotechnology
- Water sanitation

Education
What Can Be Done to Reduce Food Insecurity? Continued-2

• Individuals can help
  • Donate money or food
  • Volunteer time and effort: contact a local food bank