Chapter 1
Overweight, Underweight, and Obesity

Learning Objectives

Upon successful completion of this chapter, students should be able to:
1. Distinguish between the terms overweight and obese.
2. Describe how the BMI is used to classify individuals as underweight, overweight, or obese.
3. Interpret tables that provide data on the prevalence of obesity and overweight in adults and children.
4. Contrast the prevalence of overweight/obesity in the United States with other nations.
5. Apply the social-ecological framework to overweight/obesity.
6. Apply the public health model of prevention to overweight/obesity.
7. Describe the HAES approach.

Chapter Outline/Summary

I. Overview of weight management definitions and prevalence
   A. Terminology
      i. *Overweight* has historically meant weight in excess of the average for a given individual's height; *underweight* refers to weight that is less than average. Determination of each required the measurement of height and weight and consultation with a height–weight chart. Height-weight charts have limitations, discussed in Chapter 2.
      ii. Obesity is an excess of body fat, most accurately determined by methods that will be covered in Chapter 2. However, the *body mass index (BMI)* is an acceptable indicator of overweight, underweight, and obesity.

   B. Prevalence
      i. Over two-thirds of American adults and one-third of American children are overweight.
      ii. Of those, about 17% of children and 35% of adults are at a high enough level of fatness to be considered obese. Excess weight is also a problem in the world at large.

II. Explanations for the rise in weight gain in the United States and elsewhere
   A. Social-ecological framework
      i. A social-ecological framework helps explain the relationship between individuals and their social, physical, and broader societal environments.

   B. Role of diet

   C. Role of inactivity
      i. Both diet and physical activity are influenced by cultural, familial, and socioeconomic factors, as well as factors within the physical and broader societal environment.

   D. Public health model of prevention
      i. Three levels of prevention guide approaches to weight management: primary, secondary, and tertiary.

III. Body weight and quality of life

A. Weight stigmatism and bias
   i. Weight bias is present in all aspects of our environment.
B. The Health at Every Size Approach
   i. The Health at Every Size Approach is weight neutral, and attempts to reduce the negative consequences of stigma and bias.

Suggested Activities and Applications

Application 1.1 Understanding the Impact of a Social-Ecological Framework on Diet
Students can partner with a classmate to conduct an interview on their family food norms and traditions. The questions below may serve as a guide for the interview (the class may also decide to add additional questions to the list). Students should take detailed notes during the interview process and type notes in chronological order.

Describe what a typical meal looks like for your family.
- Who was typically present?
- Who prepared the food?
- What types of food did you typically eat? What were some of your family staples?
- Were some meals or particular foods reserved for special occasions? (How were these different? Do you have family recipes, holiday food traditions, etc.? Why do you think these are important?)
- What are the important stories that are told around your dinner table (or maybe breakfast/lunch?) Are these stories connected to certain meals/holidays?
- What do you remember most about family meals?
- Did you have rules about food in your house? Did you have any foods that you avoided? Why?
- How do you think family food traditions and relationships influence diet?
- How do you think these traditions are a reflection of the values of your family? Your heritage? The larger society?
- How do you think family food traditions are related to weight management?

Discuss as a class: What are factors that have impacted diets? How might these contribute to overweight or obesity?

Application 1.2 Factors Influencing BMI
The chapter provides a case study. Students may be instructed to read the case prior to class and be prepared to work in groups to address the questions during class.
Answers:
- Kate's current BMI can be obtained by using Table 1 in Appendix A. (BMI is between 26-27). Her BMI classification (Table 1-2) is "overweight."
- Kate's old BMI is 23. The increase in weight has moved her from "healthy" weight to "overweight."
- What social and environmental factors do you think are important for Kate to consider in her desire to lose weight?
- What might be some of the advice that you would give Kate to help her improve her health and accomplish her weight loss goals?

Activity #1 BMI and Height-Weight Tables
Students can use Table 1 in Appendix A to determine their own BMIs. They can also use the 1959 Metropolitan Desirable Weights Table and the 1983 Metropolitan Height and Weight Tables (Appendix A, Tables 2 and 3) to assess if they are at a "healthy" weight. How do they know what their frame size is? Is there a difference in "healthy" weight between the two height-weight tables? What conclusions can they draw from these data?

Activity #2 Understanding Prevalence Data
Working in small groups, have students examine the overweight/obesity prevalence data in Tables 1-3, 1-4, and 1-5. Which age and ethnicity groups have the highest and lowest prevalence of obesity/overweight? How have data trended over time?

Activity #3 Weight Bias in the Media
Have students bring a mainstream periodical to class or watch one hour of prime time television prior to coming to class. Put the students in small groups and have them examine the advertisements and answer the following questions:
- How do you think the advertisements in your magazine or during the hour of prime time television you watched contribute to weight bias in the media?
- Based upon the advertisements, describe masculine stereotypes.
- Based upon the advertisements, describe feminine stereotypes.
- Why might contemporary masculine and feminine stereotypes be important to consider as a weight management professional?
- How much of the magazine content is dedicated to weight loss, fitness, or suggested improvements in body image?
- How do you think these stereotypes reinforce weight bias in our society?
- What do you think are the consequences of weight bias in the media?
- What do you think we could do to reduce the effects of weight bias in our society?

Activity #4 Examining How People Change
Download the pilot episode of Jamie Oliver's *Food Revolution* (Season 1) and watch it as a class. Put the students in small groups and discuss the barriers to change that the residents of Huntington, West Virginia face. Why does change seem so difficult? What seems to work for Jamie as he promotes changes to improve health and eating habits? What do you think Jamie needs to do differently to promote change?

Chapter 1 Test Questions

Multiple Choice Questions

1. An absolute value for a BMI that denotes obesity is not used for children because:
    a. Obesity is only determined by BMI after age 15 years
    b. Children are still growing, which complicates interpretation of BMI
    c. Classifying a child as obese would upset parents and children and possibly create bias
    d. Children have more muscle tissue than adults
    Answer (b)

2. The Body Mass Index is determined by
    a. dividing the weight in kilograms by the height in meters squared.
    b. using a height-weight table to find healthy weight for a given gender and height.
    c.   multiplying weight in pounds by height in inches and dividing by age.
    d. using any of a number of methods to estimate percent fat
    Answer: (a)

3. Latest NHANES data show that rates of obesity are _____.
    a. continuing to increase for both women and men.
    b. decreasing for women and still showing small increases for men.
    c. declining for both women and men.
    d. declining for men but not women.
    Answer: (a)

4. According to the NHANES data, this racial-ethnic group of women showed the greatest prevalence of obesity among U.S. adults in 2011-2012:
    a. Non-Hispanic White Women
    b. Non-Hispanic Black Women
    c. Non-Hispanic Asian Women
    d. Hispanic Women
    Answer: (b)

5. According to the NHANES data, this racial-ethnic group of women had the lowest rates of obesity among U.S. adults in 2011-2012:
    a. Non-Hispanic White Women
    b. Non-Hispanic Black Women
    c. Non-Hispanic Asian Women
    d. Hispanic Women
    Answer: (c)

6. According to the NHANES data, this racial-ethnic group of men had the highest prevalence of obesity among U.S. adults in 2011-2012:
    a. Non-Hispanic White Men
    b. Non-Hispanic Black Men
    c. Non-Hispanic Asian Men
    d. Hispanic Men
    Answer: (d)

7. Data on global prevalence of childhood obesity shows that in many developed and industrialized nations it is _____.
   a. Increasing
   b. Decreasing
   c. Leveling off
   d. There are no clear trends
   Answer: (b)

8. This is a framework for recognizing the relationship between the individual, social, environmental, and broader societal factors that influence health:_____.
   a. Psychological well- being framework
   b. World Health Organization framework
   c. Social-ecological framework
   d. Public health framework
   Answer: (c)

9. The average American gets approximately _____ more calories every day than in 1980.
   a. 500
   b. 100
   c. 200
   d. 1,000
   Answer: (c)

10. This is used as a measure of the energy value of food or physical activity.
    a. Body Mass Index (BMI)
    b. Kilocalorie
    c. Energy Metric
    d. All of the above
    Answer: (b)

11. Television is one factor that influences inactivity. How many televisions are in the typical American home?
    a. One
    b. Two
    c. Three
    d. Four or More
    Answer: (c)

12. This model of prevention (_____) aims at reducing the number of new cases of a disease or condition, for example, this would mean intervention before children and adults become overweight or obese.
    a. Primary Prevention
    b. Secondary Prevention
    c. Tertiary Prevention
    Answer: (a)

True/False Questions
1. Excess weight results from far more than just gluttony and poor choices. (Answer: True)
2. Weight management professionals should adopt neutral terminology. (Answer: True)

3. According to the NHANES data, white women generally have higher rates of obesity than racial-ethnic minority women. (Answer: False)

Short Answer Questions

1. The BMI that denotes obesity in adults is: _____.
   Answer: 30 kg/m^2

2. This is an area, often in low-income communities and neighborhoods where there is limited access to healthy foods (fresh fruits and vegetables, whole grains, low fat milk, lean meats and fresh fish): _____.
   Answer: food desert

3. Name two physical/ environmental factors that impact healthy food choices:
   a. _____
   b. _____
   Answer: multiple responses are possible

4. List two socio-economic factors that may influence activity levels:
   a. _____
   b. _____
   Answer: multiple responses are possible

5. List two examples of primary prevention interventions for the prevention of obesity.
   a. _____
   b. _____
   Answer: multiple responses are possible

6. List one physical environmental factor that may influence activity level:_____.
   Answer: multiple responses are possible

Essay Questions

1. Obese men and women reported that they preferred the terms weight, weight excess, and body mass index (BMI) over fat, fatness, excess fat, obese, large size, or heaviness. Why do you think considering neutral language would be important for a weight management professional?

2. Describe how we could use the public health effort to reduce tobacco use in the U.S. as a model to prevent obesity.

3. Describe weight bias in the media. Why do you think it is important to address weight bias?

4. Describe the Health at Any Size approach.