Solutions Manual for Health Now v4 1st White

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Published by:
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Chapter 1

Health for Life

Section 1: Defining Health and Wellness

Learning Objectives

1. Define health and wellness.
2. Analyze the relative contributions of medical care, genetics, personal behaviors, and environmental factors in determining health and longevity.
3. Describe the dimensions of wellness.

Section Outline

- In the mid-1940s, the World Health Organization (WHO) defined **health** as "a state of complete physical, mental, and social well-being and not merely the absence of disease."
- Optimal health allows people to enjoy long, productive lives.
- Optimal health has become synonymous with **wellness.**
    - The WHO defines wellness as "the optimal state of health."
    - The organization further explains the two focal points of wellness:
        - "The realization of the fullest potential of an individual physically, psychologically, socially, spiritually and economically."
        - "The fulfillment of one's role expectations in the family, community, place of worship, workplace, and other settings."
- Health and wellness are neither static nor passive.
    - Some agents beyond our control—genetics, environmental exposures, age—affect your health.
    - Lifestyle choices hold great power to either promote or undermine health.

- Wellness is an active process, one in which individuals deliberately adopt lifestyle patterns that promote their health.
- A disability or chronic illness does not prevent people from obtaining high-level wellness.
- The maximum human lifespan is about 122 years, although few live much longer than 100.
- The average life expectancy in the United States is 76.1 years.
- In any given population of people, the gap between the actual and optimal state of health is known as the **burden of disease**.

Determinants of Health

- Research yields some surprising answers as to what makes one person healthy and another ill; why some people sustain long, vigorous lives while others suffer persistent illness and premature death.
- One way to view health is from an ecological perspective.
  - Ecology is a branch of biology that studies the complex relationships of organisms to one another and to their physical environments.
  - In 1988, scientists began applying this model to human health.
  - The basic concept is that multiple levels of influence affect human health.
    - These levels interact in complex ways.
    - Figure 1.1 illustrates four levels—individual, relationship, community, and societal factors.
    - People have the most control over their own health-related behaviors and the least over societal factors.

Individual Influences

- Some of the factors are outside of our control—genetics, family history, age, gender, race, and sexual orientation.
- People have the power to modify other factors—beliefs and values, resiliency, coping skills, financial resources, education, health literacy, and health-related

behaviors (diet, physical activity, sleep, substance use, sexual behaviors).

Relationships

- Relationships include formal and informal social networks—family members, friends, roommates, classmates, coworkers, clubs, and support groups.
- Social support benefits health, particularly when friends and peers model and encourage health-promoting behaviors.
- Discord and violence undermine health; so does associating closely with people who abuse substances, engage in risky sexual behaviors, have consistently unhealthy diets, and disdain physical exercise.

Community Factors

- Resources include the quality of neighborhoods, schools, religious institutions, housing, clinics and hospitals, parks and recreation centers, workplaces, air and water, and transportation.
- The cohesiveness of community members also figures in.

Greater Societal Influences

- Society and culture establish norms and attitudes about health-related issues such as diet, physical activity levels, body weight, smoking, substance abuse, sexuality, and violence.
- Intolerance and inequality based on gender, age, race/ethnicity, and sexual preference socially and economically marginalize those groups.
- The country's overall economic health influences employment rates as well as the funding of social services, education, and health care.
- Environmental conditions directly impact health.
- Public health policies (e.g., public smoking bans, gun-control laws, seatbelt laws, universal vaccination, health insurance mandates) affect whole populations.

Family History and Genetics

- Nature and nurture interact intricately.
- We inherit our genes from our parents.
    - From there, ecology acts on the genes to affect our biology.
    - Genetic traits can also color our responses to that ecology; so do the behaviors we learn from our parents, other role models, and the media.
    - Multiple influences shape our physical, emotional, psychological, social, and financial health.
- Within each of our cells (the basic working units in our body) is a nucleus, which contains your genetic information.
    - The **genome** is the complete set of **deoxyribonucleic acid** (**DNA**).
    - DNA contains building blocks called nucleotides, which are arranged sequentially along chromosomes like beads on a necklace.
    - The four nucleotide bases act like letters of the alphabet to spell out a code.
- **Chromosomes** are threadlike structures containing DNA and protein.
    - Humans have 23 chromosomes.
    - Most cells contain a pair of each chromosome for a total of 46.
    - Sperms and egg cells contain 23 chromosomes.
- Each chromosome contains many genes.
    - A **gene** is the basic unit of heredity.
    - Each gene is made of a specific sequence of nucleotide bases and codes for a particular protein.
    - The genome forms a blueprint for the structure and function of the body.
- Proteins perform the body's essential functions.
    - They form structural components in the body (bones, ligaments, tendons, teeth, hair), and enzymes, which catalyze chemical reactions.
    - The collection of proteins expressed by the genome is called the **proteome.**
- Some diseases have a strong genetic component.
    - A few are caused by a single mutated gene.
        - Examples include sickle-cell anemia, Tay Sachs disease, and cystic

fibrosis.

- The marked health disparities and major diseases burdening the United States are not caused by genetic variations.
    - The common chronic diseases of modern life stem from a complex interaction of genes, lifestyle habits, and environmental exposures.
        - These so-called **multifactorial diseases** include common chronic conditions such as cardiovascular disease, diabetes, cancer, and Alzheimer's disease.
        - While these diseases may have genetic risks, they manifest from genetic vulnerability *plus* life experiences.
- Our experiences and exposures modify **gene expression**—the conversion of genetic information into protein.
    - Not all genes are "read" (transcribed into proteins).
        - In the chromosomes, the DNA winds around histones (a particular type of protein).
        - Genes that are tucked within this coil cannot be read.
        - Substances can also bind to genes (and their associated proteins) to prevent or allow their expression.
        - Some genes promote or suppress the expression of other genes.
- **Epigenetics** is the study of the reactions that influence gene expression.
    - It explains why, despite sharing the same genes, a muscle cell looks different from a nerve cell and why the health of identical twins differs.

Environmental Determinants of Health

- Environmental determinants are those physical elements that affect health.
    - The natural environment includes plants, animals, natural resources, weather, and climate change.
    - Access to natural landscapes positively influences human health.
- The man-made environment gives us buildings and transportation.
    - Our activities can both create aesthetically pleasing works and give rise to

damaging pollutants.

- Environmental influences begin before birth.
  - Exposures to various chemicals can affect the eggs and sperm that combine to form an individual.
  - The biological parent's nutritional status, stress level, and overall health determine the environment in which a fetus develops.
  - Early childhood experiences—some infectious diseases, abuse, neglect, family discord, and malnutrition—can have profound influences on health in adult life.
- Throughout life, toxic exposures can increase the risk of cancer and other chronic diseases.
  - Contaminants such as toxic chemicals and microorganisms in food, water, air, and soil pose health risks.
  - Geographic location can determine exposure to noxious substances.
  - Around the world, the poor are more likely than the rich to live near industrial operations and disposal sites for toxic waste.
  - In developing countries, people often lack the luxury of clean drinking water.
- The built environment shapes health.
  - Buildings for residences and workplaces need to be safe.
  - Communities designed for motor vehicle transportation promote inactivity.
    - On the other hand, communities that create safe pedestrian and bicycle routes improve health by reducing pollution and encouraging physical activity.
  - People with ready access to recreation centers and safe green spaces have better physical and mental health.

Social Determinants of Health

- Social determinants of health (SDOH) are circumstances in the environment of one's life and contain where they were born, live, learn, work, play, worship, and

where they age that may affect their health.

- SDOH can affect all definitions of health, one's functioning and their quality of life.
- SDOH are also responsible for many health disparities and inequities that we see today.
- SDOH can be grouped into five domains:
    - economic stability;
    - education access and quality;
    - health care access and quality;
    - neighborhood and built environment; and
    - social and community context.
- Most people agree that SDOH are the underlying cause of many chronic diseases such as heart disease, diabetes, depression, and asthma.

The Dimensions of Wellness

- In a move away from examining health on the physical plane alone, experts have defined wellness according to six to seven dimensions:
    - Physical wellness takes into account a number of biological factors—level of physical fitness, presence or absence of disease or injury, a person's ability to take care of themself.
    - Emotional wellness refers to the overall balance of a person's emotional state, awareness of emotions, and ability to express emotions freely and appropriately.
        - People with positive emotional health are capable of trust, intimacy, and love.
    - Social wellness springs from emotional wellness.
        - Socially healthy people enjoy satisfying interpersonal relationships.
    - Intellectual wellness refers to the ability to organize and express ideas; to think critically, rationally, and analytically; to maintain a sense of curiosity; and to solve problems using brainpower.

- Skills learned in the classroom can be used in life experiences.

- Spiritual wellness provides a sense of meaning and purpose in life.
  - Spiritual people possess a set of beliefs, principles, and values that guide their decisions.
- Occupational wellness entails identifying passions and career goals, preparing to meet those goals, and finding work that pays the bills and provides a sense of personal satisfaction.

- Environmental wellness refers to the safety and cleanliness of our physical environment, as well as our attitude toward the environment and our commitment to improving it.
  - Environmental toxins can make us sick.

Discussion Questions and Solutions

1. Some medical services do prevent illness and promote longevity. Provide two examples of services you've received from your health provider that kept you healthy.

   Answer: Students' answers will vary. Many should note that childhood immunizations prevented a number of serious and even life-threatening infections. Many will have received antibiotics to treat bacterial illnesses. Some may have health providers who wisely counseling about lifestyle measures that prevented injury and illness such as good diet, regular physical activity, and wearing seat belts and helmets while riding bikes, scooters, motorcycles, etc.

2. Discuss the meaning of spirituality in your life. Consider what gives you a sense of meaning and purpose—the things you do that make you feel connected to something grander than yourself and the rituals you follow that make you at peace.

   Answer: Students' answers will vary.

3. In early 2018, British Prime Minister Theresa May appointed a minister for loneliness to address the societal challenge of loneliness. How do you think loneliness affects health? How can you help combat this issue in your community?

   Answer: Students' answers will vary. Some answers may include that loneliness has been thought to be as unhealthy as smoking 15 cigarettes per day. It can increase risk for heart disease, Type 2 diabetes, dementia, arthritis, and suicide by increasing inflammation and stress hormones.

Key Takeaways

- Health and wellness are more than the absence of disease.
- Optimal wellness encompasses health in all the domains of a person's life. The dimensions of wellness include physical, emotional, social, intellectual, spiritual, occupational, and environmental.
- Social determinants of health are complex conditions comprised of where individuals are born and live that impact their health.

Key Terms

- **Burden of disease**: The gap between the actual and optimal state of health; often measured by resultant disability and premature mortality.
- **Chromosome**: A structure containing DNA and protein.
- **Deoxyribonucleic acid (DNA)**: A molecule that encodes genetic instructions in the chromosomes; contains nucleotides.
- **Epigenetics**: The study of heritable changes caused by activation or deactivation of genes rather than alternations in the DNA sequence.
- **Gene**: The basic unit of heredity; a sequence of nucleotides in DNA that codes for a protein.
- **Gene expression**: The process whereby the information encoded in a gene produces a protein.
- **Genome**: The complete set of genetic information in an organism.
- **Health**: According to the WHO, "A state of complete physical, mental and social well-being and not merely the absence of disease."
- **Multifactorial diseases**: Medical conditions caused by a complex interaction of genes, lifestyle habits, and environmental exposures.
- **Proteome**: The collection of proteins expressed by the genome.
- **Wellness**: Optimal health achieved through an active process by which an individual makes healthy choices.

Section 2: Global and National Health Concerns

Learning Objectives

1. Discuss trends in global health, including the top causes of disability and death.
2. Analyze health trends in the United States and list the top causes of death.
3. Compare and contrast the health of U.S. citizens to the health of citizens in other affluent nations.
4. Describe the U.S. government's Healthy People initiative.

Section Outline

Health around the World

- Global health relates to populations around the world.
    - Although it transcends national concerns, the well-being of people in far-flung countries affects us all.
- Human health and wellness, education, income, productivity, environmental health, and political stability all intertwine.
- For many years, international organizations such as the United Nations and the World Health Organization have focused on reducing and eliminating **communicable diseases**, illnesses caused by infectious agents or their toxins that people can acquire from other humans, animals, and the environment (contaminated food, air, water, soil, etc.).
    - Illnesses such as infectious diarrhea, malaria, tuberculosis, and AIDS prematurely end lives.
    - Some of these infections are **acute illnesses**, meaning they last a short time.
        - Acute illnesses can be mild or life-threatening.
        - Many cases of infectious diarrhea are acute, though they can be deadly, especially in infants and small children.
        - On the other hand, tuberculosis and AIDS are **chronic illnesses**, meaning they last longer than three months.

- Most recently, the SARS-CoV-2 virus (or simply called “the coronavirus”) crossed from animal to human hosts in late 2019 and has caused substantial illness and death worldwide.
    - It is called a novel coronavirus because it has never infected human beings prior to its recent emergence. “Novel” meaning new.
- Communicable diseases are rampant in the developing world.
    - Their solutions lie in providing clean water and food, sanitation, vaccinations, and strategies to eradicate disease-causing agents from the environment.
    - Antimicrobial drugs help treat those infections that elude prevention.
- More recently, international experts have recognized the parallel threat of **noncommunicable diseases**, illnesses that are not infectious or readily transmissible.
    - For decades, noncommunicable diseases have caused significant **morbidity** (illness) and mortality (death) in the developed world.
    - As the “Western lifestyle” of tobacco; inactivity; and salty, fatty, sugary foods has spread around the globe, these chronic diseases have likewise become common in developing countries.
        - These risk factors contribute to disease **incidence** (the number of new cases of a condition occurring within a certain time frame) and **prevalence** (how many people have the condition at any point in time).
    - While the ill effects of noncommunicable diseases may not be as dramatically apparent as symptoms of infectious illnesses, they do rob people and nations of health, productivity, prosperity, and years of life.
    - Noncommunicable, chronic diseases are more expensive and complicated to prevent and treat than acute infectious illnesses.
        - Antibiotics and vaccinations against infectious diseases are relatively cheap.
    - Changing the factors that fuel most noncommunicable diseases is difficult.
        - Doing so requires a complete revamping of the food industry, eating habits, activity levels, sleep habits, and stress levels.

Health in the United States

- Since the nation's founding, the trend has been that each generation of Americans enjoyed longer, healthier lives than the last.
    - During the twentieth century, U.S. life expectancy rose an astounding 30 years.
    - In 1900, the three leading causes of death were tuberculosis, pneumonia and influenza, and diarrheal illnesses.
    - By 1999, the three leading causes of death were heart disease, cancer, and stroke.
- Public health improvements paved the way for living longer.
    - They included sanitation and hygiene, family planning, improvements in the food supply, and immunizations (vaccinations) against childhood infectious diseases.
    - Better medical care for women during pregnancy and childbirth drove down maternal and infant deaths.
    - Contraceptives allowed women to avoid teen pregnancies and to space births, which improved children's health.
    - Antibiotic treatment of bacterial infections also helped children and young adults survive to older ages.
    - Improvements in medical technology played a much smaller role in extending life, though medical treatment increased the survival of those with chronic illnesses.
- Another trend has been a marked increase in the proportion of older adults in the population.
    - Four factors explain the shift toward a population top-heavy in older adults:
        - Thanks to public health measures, childhood death rates have fallen.
        - The period of increased prosperity following World War II led to the "baby boom," with high birth rates between 1946 and 1964.
        - Birth rates subsequently declined.

        - Life expectancy increased.
- Increased longevity combined with the “Western lifestyle” has bred chronic diseases.
    - About 54 percent of Americans aged 18–34 live with at least one chronic condition and 22 percent with more than one.
- Most older Americans rate their health quite positively, seven out of ten rate health-related behaviors and attitudes as good or excellent.
- Many young adults say they suffer from too much stress, too little sleep, and not enough time for quality relationships.

Common Causes of Death in the United States

- For over 70 years, heart disease has been the number one cause of death in the United States.
- Cancer, stroke, chronic lung disease, and unintentional injuries (accidents) have ranked in the top 10 for many years, though they tend to shift positions.
- Patterns for causes of death shift depending on the age group considered.
- Most of the conditions that sicken and prematurely kill Americans could be avoided or postponed.

Discussion Questions and Solutions

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1. Explain why the prevalence of chronic disease has increased around the world.

   Answer: For decades, noncommunicable diseases have caused significant morbidity and mortality in the developed world. As the "Western lifestyle" of tobacco; inactivity; and salty, fatty, sugary foods has spread around the globe, these chronic diseases have likewise become common in developing countries. These risk factors contribute to disease incidence and prevalence. Whereas our ancestors lived relatively short lives, people now survive long enough to develop chronic conditions (obesity, cardiovascular disease, type 2 diabetes, cancer, and chronic lung disease). Furthermore, medical advances have extended the life of people who have these illnesses. That means that those years gained are not necessarily spent in good health.

2. Discuss the major advances that have reduced the fatality rate for infectious diseases.

   Answer: Public health improvements have paved the way for living longer. They include sanitation and hygiene, family planning, improvements in the food supply, and immunizations against childhood infectious diseases. In addition to vaccinations, antibiotic treatment of bacterial infections also helped children and young adults survive to older ages.

3. Review the same numbered list ("The 10 Leading Causes of Death in 2021 for Americans 15 to 24 Years Old"). Do any of the top ten killers of young adults surprise you? Why? Search online for information about this condition in adolescents and young adults. Write a paragraph about what you learn about high mortality rates in the young. Cite your source.

   Answer: Students' answers may vary.

Key Takeaways

- Around the world, life expectancies and the burden of chronic disease have gone up.
- Infectious diseases have steadily come under control in the developing world. However, many people still lack access to safe drinking water, sanitation, and hygiene.
- The United States spends more on health care than any other nation.
- People in other affluent nations live longer and have generally better health than Americans.
- The leading causes of death in the United States could be prevented or postponed.

Key Terms

- **Acute illnesses**: Those illnesses that last a short period of time.
- **Chronic illnesses**: Those illnesses that last three months or longer.
- **Communicable diseases**: Illnesses caused by infectious agents or their toxins that people can acquire from other humans, animals, and the environment (contaminated food, air, water, soil, etc.).
- **Incidence**: When talking about diseases, the term refers to the rate at which new cases appear.
- **Morbidity**: Illness.
- **Noncommunicable diseases**: Illnesses that are not infectious or readily transmissible.
- **Prevalence**: When talking about diseases, the term refers to the proportion of the population affected with that condition at a particular period of time.

Section 3: Take Charge of Your Health

Learning Objectives

1. Assess your current level of wellness.
2. Examine and apply theories about how people make behavioral changes.
3. Learn ways to improve your health behaviors.

Section Outline

- Once people recognize the importance of lifestyle habits, they can exert a healthy measure of personal responsibility for their health.
- People should consider themselves the architect of their health and well-being.
    - Their lifestyle habits either promote construction or demolition.
- If people want to live long and robust life, they should follow the pillars of good health:
    - Engage in physical activity every day.
    - Make time for friends and family.
    - Stay away from tobacco smoke and other toxic substances.
    - Get enough sleep.

      Learn to control stress.
    - Find their passion.

Making Positive Behavioral Changes

- People make changes all the time.
    - Many they embrace enthusiastically.
    - Some habits—those that they do almost reflexively—can be hard to change.
        - That's especially true if undesirable habits provide immediate gratification or if their absence causes withdrawal symptoms.
- Public health experts have long studied what it takes to change health behaviors.
    - During the twentieth century, they tried to understand why people weren't

universally responding to informational campaigns about the risks of smoking, the ruinous effects of alcoholism, and the benefits of vaccinations.
    - Clearly, knowledge alone wasn't sufficient.
- Beginning in the 1940s, researchers learned how people made decisions affecting their health and what elements supported successful adoption of positive lifestyle modifications.
    - Since then, scientists have put forth several models to explain how people make behavioral changes.
    - One prominent theory is the Health Belief Model.

Health Belief Model

- Developed in the 1950s, the Health Belief Model remains a widely used framework for explaining health behaviors.
- The model holds that motivation is key to making positive changes.
- In addition to knowledge, other motivating factors for giving up a bad habit and/or adopting a health behavior include the following:
    - Perceived susceptibility. People believe they are vulnerable to diseases or other adverse consequences associated with an undesirable behavior.
    - Perceived severity. People believe the consequences can be dire.
    - Perceived benefits. People believe that positive actions will avert and improve their risks.
    - Perceived cost-to-benefit ratio. People believe that the benefits of their actions will outweigh any costs. Four main factors influence the cost-to-benefit analysis:
        - Perceived barriers to action. These are the things individuals think will make it difficult to adopt and maintain a new behavior.
        - Sense of self-efficacy. Self-efficacy means individuals believe they have the power to achieve their goals.
        - Subjective assessment of starting to take action. If individuals perceive the behavior change in a positive light, they are more likely to persist.

- Social milieu. Social influences establish norms.

Transtheoretical Model: Stages for Behavior Change

- The Transtheoretical Model describes the stages people pass through as they initiate positive behavioral changes.
- The model attempts to explain how people take action to improve health.
  - Some of these stages' elements overlap those described in the Health Belief Model.
    - Precontemplation. At this stage, an individual has no intention of changing.
      - They may be ignorant of or in denial of a problem.
      - Or past failures to change have led to a resigned hopelessness.
      - They may react with resistance or defensiveness to others' attempts to help.
      - If the individual is conscious of a health threat, they may feel changing isn't worth the effort.
    - Contemplation. The individual gains awareness, believes they ought to make a change, and intends to take action within six months.
      - The individual may gather information and weigh the pros and cons of the new behavior—without necessarily doing anything.
    - Preparation. The individual makes plans and intends to take action within a month.
      - They have now decided that the pros of making a positive change outweigh any inconvenience.
      - In addition, the negatives of not modifying the behavior outweigh any reluctance to change.
      - The person takes initial steps in the right direction.
    - Action. Behavior shifts.
      - Positive actions continue for six months.
      - The individual also overcomes barriers and accesses resources.

        - Maintenance. At this stage, the behavioral change has lasted over six months.
            - The person figures out ways to resist temptation and otherwise prevent relapse.
        - Termination. The person has gained complete confidence in this new lifestyle and feels no temptation to relapse.
            - The positive behavior now starts to feel routine and necessary.
    - The passage from stage to stage is neither linear nor irreversible.
        - Some stages may be skipped, especially if there's a sudden sense of urgency.
        - People may relapse, which moves them back a stage or two.
        - Often people cycle back and forth between stages.
        - Sometimes the pros of the positive behavior outweigh cons.

Changing for the Better: Skills for Success

- The following are some specific tips that will make people successful in their goals of improving their health and well-being:
    - Do it for you. People are more likely to hang in there if they want to change than if they are trying to please someone else.
    - Create precise goals. Specificity will help motivate people and give them a yardstick by which to measure progress.
        - Set S.M.A.R.T. (Specific, Measurable, Achievable, Realistic, Time-based) goals.
    - Decide where to set the bar. If it's too high, people will become frustrated; if it's too low, they may not feel inspired.
        - If people tend to be overachievers, they may want to start with more modest goals.
        - If people are self-identified slackers, they should aim higher.
    - Post goals. People should make sure they see their goals often.
    - Take it one day at a time. People should divide their long-term goal into

doable chunks.
    - They should wake up each day, ready to recommit to their goal.
- Find enjoyable substitutions. Giving something up is harder if something good doesn't take its place.
    - They should find a healthier alternative for the behavior they want to quit.
- Use strengths and skills. These assets enable people to scale perceived barriers and resist temptations.
    - People should make a list of their talents because all their skills can help them adopt and maintain a new health habit.
- Surmount barriers. Tangible roadblocks can be relatively easy to identify and solve but don't forget.
    - People should not forget about the intangibles—their own attitudes and beliefs.
    - In order to change, people will need to convince themselves that the new lifestyle suits them better and makes them proud.
- Dodge temptations. People should look for the cues with which they associate undesirable habits and break those associations.
- Inform close friends of personal goal. People should solicit the support of their friends.
    - It can help people persist and feel proud of their achievements.
- Create contingency plans for battling temptations and cravings.
- Identify outside resources. The list depends on the goal.
    - Resources might include friends, family members, informal support groups, and professionals.
- Pay attention to positive signs and symptoms. People should notice the signs that make them feel more cheerful, focused, energetic, joyous, confident, etc.
- Be flexible. Not every day turns out as planned; relapses happen.
    - People should not judge themselves harshly; they should turn those negative feelings into motivations.

        - It's perseverance that counts, not perfection.
    - Each person is enough—as they are right now. If anyone has told an individual otherwise, they should disregard that erroneous opinion.
        - No one's perfect and everyone has room for improvement.

Discussion Questions and Solutions

1. Choose an unhealthy behavior you or your peers commonly engage in. Using the Health Belief Model, analyze this behavior according to possible perceptions of susceptibility, severity, benefits, and barriers to change. Examples include not wearing helmets while cycling, binge drinking, smoking, and not using condoms.

   Answer: Students' answers will vary. For example, if students choose not wearing helmets while cycling, they may be susceptible to head injuries if they fall off their cycles. The injury could be severe enough to cause permanent brain damage or even death. The benefit of wearing a helmet would include protection from head injuries. One of the barriers to change might be the individual's attitude.

2. Identify a health behavior you'd like to change. Examine the stages of the Transtheoretical Model. Note which stage you're in now and explain why. What will it take to push you to the next stage?

   Answer: Students' answers will vary. They should examine the following stages of the Transtheoretical Model in their answer:
   - Precontemplation
   - Contemplation
   - Preparation
   - Action
   - Maintenance

- Termination

3. Around the world, tobacco is a leading preventable cause of death. It contributes to the top killers: heart disease, chronic lung disease, stroke, and many cancers. Why do you think so many people continue to smoke?

   Answer: Students' answers will vary. Some of them may say that most smokers say that they derive a sense of pleasure from smoking tobacco. Many think they could quit any time, though they're usually wrong. Many start at a young age, which means they become addicted swiftly. Nicotine addiction is tough to break. Finally, people from disadvantaged backgrounds are more likely to smoke. They may not receive messages about the dangers, may not perceive themselves as susceptible, may view smoking as normal (based on behaviors of peers and family members), and may not be able to envision alternative lifestyles.

Key Takeaways

- Researchers have generated theories to explain how people make health-related decisions. The most prominent theory in health education is the Health Belief Model.
- The Transtheoretical Model describes the stages people pass through as they initiate positive behavioral changes.
- A number of skills help individuals successfully change their behaviors for the better.