CHAPTER 10
Health, Stress, and Coping

CHAPTER OUTLINE
I. HEALTH PSYCHOLOGY

What do health psychologists do?

Health psychology is devoted to understanding psychological influences on how people stay healthy, why they become ill, and how they respond when they do get ill.

In the United States, the leading causes of death have become chronic illnesses (e.g., cancer, heart disease, diabetes), which are heavily influenced by psychological makeup, lifestyle, and environment. As many as half of all U.S. deaths are attributed to preventable healthy-risky behaviors.

Health psychology tries to teach people how stress and their behavior and decisions affect their health.

II. UNDERSTANDING STRESS AND STRESSORS

How do psychological stressors affect physical health?

Stress is the negative emotional and physiological process that occurs as individuals try to adjust to or deal with stressors. Stressors are environmental circumstances that disrupt or threaten to disrupt people’s daily functioning and cause people to make adjustments. Stress reactions are the physical, psychological, and behavioral responses that occur in the face of stressors. Mediating factors, such as the extent to which we can predict and control stressors, how we interpret the situation, the social support we get, and our stress coping skills can either minimize or multiply a stressor’s impact.

A. Psychological Stressors

For humans, most stressors include both physical and psychological components. Psychological stressors are life events, positive or negative, that force a person to change or adapt.

1. Catastrophic events are sudden, unexpected, potentially life-threatening events or traumas. Examples include accidents, assaults, or natural disasters.
2. Life changes and strains are events that call for adjustment. Examples include divorce, family illness, unemployment, and moving to a new place.
3. Chronic stressors continue over a long period of time. Examples are living near a noisy airport, experiencing discrimination, and living under the threat of terrorism.
4. Daily hassles are minor irritations, pressures, and annoyances whose effects add up to become significant. Examples include daily commuting in heavy traffic that can result in “road rage” at times.

B. Measuring Stressors

To study the impact of stressors, researchers must measure the impact of particular stressors.

1. The Social Readjustment Rating Scale (SRRS) measures stressors according to the degree to which they require a change (good or bad) in one’s life.
a) People taking the SRRS receive a stress score, the sum of life change units (LCUs), the amounts of change or demand for adjustment caused by stressful events.

2. The Life Experiences Survey (LES) measures which life events occurred, people’s perceptions of how positive or negative the events were, and how well they were able to cope with the events. Respondents can also write in any stressors they experienced that were not on the LES list.

III. STRESS RESPONSES

*How do people react to stressors?*

Stress reactions can be physical or psychological. They tend to occur together, and one response can trigger another.

A. Physical Responses

Physical stress responses are often described by the general adaptation syndrome (GAS), a consistent, three-stage pattern of physical responses to any lasting stressor.

1. The first stage, the *alarm reaction*, is an immediate reaction to a stressor and consists of the *fight-or-flight syndrome* (increased heart rate, rapid breathing, sweating, and so on) to mobilize the body for rapid action.
   a) The alarm reaction is mediated by the *sympatho-adreno-medullary (SAM) system.* Stressors cause the hypothalamus to activate the sympathetic division of the autonomic nervous system, which stimulates the adrenal medulla, which in turn releases catecholamines into the blood, affecting the liver, kidneys, heart, and lungs. Actions of this system increase blood pressure, raise muscle tension, and liberate blood sugars.
   b) Stressors also activate the *hypothalamic-pituitary-adrenocortical (HPA) system.* The hypothalamus directs the pituitary gland to release adrenocorticotropic hormone (ACTH) into the blood. ACTH stimulates the adrenal cortex to release corticosteroids, hormones that in turn liberate energy stores and fight inflammation. Pituitary glands also trigger the release of endorphins, the body’s natural painkillers.

2. Persistent stressors trigger the second stage, the *resistance stage*. The signs of initial alarm subside as the body settles in to combat the stressor on a long-term basis.

3. If stressors continue, the resistance stage eventually depletes biochemical stores, and the third stage of *exhaustion* results. Physical wear and tear takes its toll, producing diseases of adaptation, such as heart disease, arthritis, and colds, and so on.

B. Psychological Responses

1. *Emotional Changes:* Stress responses may include fear, anger, irritability, and anxiety. They are usually temporary.

2. *Cognitive Changes:* Stress responses may include reduced ability to concentrate, think clearly, or remember accurately.
   a) *Ruminative thinking* is the recurring intrusion of thoughts about stressful events.
   b) *Catastrophizing,** dwelling on and overemphasizing possible negative consequences of events, interferes with cognitive abilities and intensifies emotional and physiological arousal.
   c) Overarousal from stressors tends to limit attention and increase the tendency to rely on *mental sets* (well learned but not always efficient ways of approaching problems) and *functional fixedness* (the tendency to use objects for only one purpose).
   d) Stressors impair decision-making skills.
3. Behavioral stress responses are changes in how people look, act, or talk—facial expressions, perspiration, a shaky voice, muscle spasms, jumpiness, aggressive behaviors, and so on.

IV. LINKAGES: STRESS AND PSYCHOLOGICAL DISORDERS
A. Burnout is an intensifying pattern of physical and psychological dysfunction due to a continuous flow of stressors or to chronic stress. People experiencing burnout may become uncharacteristically apathetic, impulsive, accident-prone, irritable, and depressed.

B. Posttraumatic stress disorder (PTSD) is a pattern of severe negative reactions following a traumatic event. It may include anxiety, irritability, jumpiness, poor concentration, sexual problems, impaired social relationships, sleep disturbances, and suppressed immune system functioning. Sufferers often relive the original trauma in nightmares or vivid memories or, rarely, in flashbacks, where the person behaves as if the trauma is actually occurring again.
   1. Brain scanning techniques indicate that PTSD symptoms are accompanied by noticeable changes in brain functioning and structure.

C. The diathesis-stress approach to psychological disorders suggests that certain people may be predisposed to develop certain disorders, but whether or not the disorders develop depends on the frequency, nature, and intensity of the stressors people encounter.

V. STRESS MEDIATORS
Why doesn't everyone react to stressors in the same way?
The same stressors produce different responses in different people. Psychobiological models emphasize that the impact of stressors depends not only on the stressors, but also on mediating factors.

A. How Stressors are Perceived
   Our physical and psychological reactions to stress depend in part on how we think about them, a process known as cognitive appraisal. A potential stressor has a stronger negative impact on people who perceive it as a threat than on people who see it as a challenge. To an extent the influence of cognitive factors weakens as stressors become extreme.

B. Predictability and Control
   1. Predictability, knowing when an expected stressor will occur, can be a powerful stress mediator. Knowing a stressor may occur but not whether or when it will do so increases a stressor’s impact. Predictability lessens the impact of strong and brief stressors. As stressors persist though, predictability is less important.
   2. The perception of control, that one can control a stressor, whether accurate or not, reduces its impact. People who believe they cannot control stressors are especially prone to physical and psychological problems.

C. Coping Resources and Coping Methods
   Being well equipped to minimize and respond to stressors requires coping resources (e.g. time, money) and coping methods.
   1. Problem-focused coping methods try to alter or eliminate the source of stress.
   2. Emotion-focused coping methods try to regulate the negative emotional consequences of stress.

D. Social Support
   Social support consists of emotional, tangible, or informational resources provided by other people. The people you can depend on for support make up your social support network. Social support can have health benefits, for keeping important things to yourself is stressful.
   1. The quality of social support will influence the ability to cope with stress, but the ability to cope with stress may influence the quality of social support received.
   2. Social support also depends on recognition that others care and will help.
3. Too little support, too much support, or the wrong kind of support may be harmful.
4. The value of social support may depend on the particular stressor involved.

E. Stress, Personality, and Gender
1. People with “disease-prone” personalities persist at mentally avoiding stressors, believe the stressors are catastrophic and long-lasting and that they brought the stressors on themselves, and are pessimistic about their ability to overcome stressors.
2. People with “disease-resistant” personalities tend to think of stressors as temporary challenges to be overcome. And they do not blame themselves for causing the stressors. Dispositional optimism, a belief that things will work out well, is an especially strong stress-buffering effect, even against the physical wear and tear stressors can cause.
3. Gender may affect people’s stress responses. In general, men tend to get angry and/or avoid stressors, and women tend to help others and use social support. This may be due to learned gender roles, but there may also be a physiological component.
   a) Oxytocin, a stress hormone, interacts differently with male and female sex hormones—it amplifies men’s physical stress responses and reduces women’s.

F. Focus on Research: Personality and Health
1. What was the researchers’ question?
   Are there personality characteristics that protect or threaten people’s health?
2. How did the researchers answer the question?
   Howard Friedman and colleagues used data from the Terman Life Cycle Study to help address this question. The Terman Life Cycle Study was a longitudinal study of 1,528 gifted children. Beginning in 1921, the subjects and their families and teachers were interviewed every five to ten years to get information about their personalities, stressors, social relationships, health habits, and other variables. By the 1990s, half of the subjects had died. Howard Friedman and colleagues looked at their death certificates to note dates and causes of death, and then looked for associations between their personalities and the length of their lives.
3. What did the researchers find?
   a) People who lived longest were more often those who were consistently conscientious or socially dependable—people who were honest, trustworthy, reliable, hard-working, and self-controlled.
   b) People with strong social support over their lives tended to live longer. People whose parents were divorced, or who had experienced a divorce of their own, died an average of four years earlier.
4. What do the results mean?
   Since the observed patterns are correlations between uncontrolled variables, it is difficult to infer the causes of these relationships. Conscientious, dependable, socially stable subjects may have followed healthier, more cautious lifestyles compared to impulsive and socially stressed subjects.
5. What do we still need to know?
   Would the same results be found with a more representative sample?

VI. THE PHYSIOLOGY AND PSYCHOLOGY OF HEALTH AND ILLNESS

How does stress affect your immune system?

A. Stress, Illness, and the Immune System
   Psychoneuroimmunology studies how psychological and physiological processes interact to strengthen or weaken the body’s ability to defend itself against disease.
1. The Immune System and Illness
Components of the **immune system** kill or deactivate foreign or harmful substances in the body. If the immune system becomes under- or overactive, a person is left more vulnerable to disease.

a) *White blood cells*, called *leukocytes*, are formed in the bone marrow and are called to action when foreign substances are detected.
   
   (1) **B-cells** produce *antibodies* to fight foreign toxins.
   
   (2) **T-cells** kill other cells.
   
   (3) **Natural killer cells** destroy many foreign organisms and have important antiviral and anti-tumor functions.

b) The brain can influence the immune system by altering the secretion of adrenal hormones that affect the immune system or by making direct contact with immune organs.

2. The Immune System and Stress
   
   People under stress more often develop infectious diseases and experience reactivation of latent viruses.

B. Stress, Illness, and the Cardiovascular System

1. Repeated activation of the sympatho-adreno-medullary (SAM) system in response to stress has been linked to coronary heart disease, high blood pressure, and stroke.

2. A particularly important risk factor for heart disease is a stress response of *hostility*, especially when accompanied by irritability and impatience.

C. Thinking Critically: Does Hostility Increase the Risk of Heart Disease?

**Hostility** is characterized by suspiciousness, resentment, frequent anger, antagonism, and distrust of others.

1. *What am I being asked to believe or accept?*
   
   People displaying hostility are at greater risk for coronary heart disease (CHD) and heart attack, independent of other risk factors.

2. *Is there evidence available to support the claim?*
   
   Hostile people may react especially intensely to stressors. This could increase the wear and tear on the heart and blood vessels as the heart pushes blood through constricted blood vessels. Increased stress responses would also raise levels of stress-related hormones, which are associated with increases in cholesterol and other fatty substances that are deposited in arteries and contribute to CHD. Hostility may also indirectly increase CHD risks by decreasing available social support.

3. *Can that evidence be interpreted another way?*
   
   Ethics prevent researchers from performing true experiments, manipulating and controlling certain behavior patterns to measure their effects on the development of CHD. So, a third variable might be causing both cynical hostility and CHD. Perhaps genetically-influenced autonomic activity increases the probability of both hostility and heart disease. It has also been suggested that hostility may be only one of many traits linked to heart disease, like depressiveness, pessimism, anger, anxiety, and so on.

4. *What evidence would help to evaluate the alternatives?*
   
   One way would be to see whether hostile people have higher physiological arousal in general. One study showed that hostile people continue to show higher autonomic reactivity even under anesthesia, suggesting that their exaggerated stress responses stem from oversensitivity rather than from hostile thinking.

5. *What conclusions are most reasonable?*
Most studies show that people with hostile behavior are at greater risk for CHD and heart attacks than other people. The causal relationship is unclear and probably complex. It may be necessary to take into account that (1) some people may have biological predispositions to hostile stress responses and greater cardiovascular activity; (2) hostile people create and perpetuate stress responses which can provoke aggression in others; and (3) hostile people also tend to engage in other behaviors that are risky to health. More research is needed to examine whether the link between cynically hostile behavior and CHD will hold for people in other cultures.

D. Risking Your Life: Health-Endangering Behaviors
1. *Smoking* is the single most preventable cause of death in the United States. For most smokers, quitting smoking is the single most important health behavior change they can undertake.
   a) People who inhale “second-hand” smoke—smoke from other smokers—more often have lung cancer and other respiratory diseases than nonsmokers.
   b) Overall, smoking is declining in the United States. However, it is higher among young European- and African-American men. Poorer people and people in Third World countries are much more likely to be smokers than are members of other groups.
2. *Alcohol* abuse is associated with heart disease, stroke, cancer, liver disease, and irreversible brain damage. It is the most preventable cause of birth defects.
3. *Unsafe sex*—especially sexual relations without a condom—greatly increases risks of contracting HIV. Unprotected sex is more common among low-income people and adolescents.

VII. PROMOTING HEALTHY BEHAVIOR

Who is most likely to adopt a healthy lifestyle?

Health promotion refers to efforts to reduce, eliminate, or prevent behaviors that pose health risks and to encourage behaviors that foster health.

A. Health Beliefs and Health Behaviors
1. Health-belief models are cognitive approaches to health psychology.
   a) Rosenstock’s health-belief model assumes that people decide about health-related behavior are guided by four main factors:
      (1) Perceiving a personal threat of risk for getting a specific illness
      (2) Perceiving the illness’s seriousness and the consequences of having it
      (3) Believing that a particular behavior will reduce the threat
      (4) A comparison of the perceived costs of changing a risky behavior and the benefits expected from making that change.
   b) A belief in self-efficacy, that you can perform some behavior, also affects health-behavior decisions.
   c) Also related is the intention to engage in a healthy behavior.

B. Changing Health Behaviors: Stages of Readiness
James Prochaska and colleagues contend that successful change involves five stages that may have to be repeated numerous times:
1. *Precontemplation*: The person perceives no threat and does not plan to change.
2. *Contemplation*: The person is aware of a problem behavior and is seriously thinking about changing it.
3. *Preparation*: The person has a strong intention to change and has made specific plans to do so.
4. *Action*: The person is successfully making a behavior change.
5. **Maintenance**: The healthy behavior has continued for at least six months and the person is using newly learned skills to prevent relapse.

C. Programs for Coping with Stress and Promoting Health

1. Planning to Cope
   
   Coping strategies can be learned. Individuals who are most successful are those who are best able to adjust coping methods to fit changing situations and stressors.

   a) Programmed coping strategies often include six stages: identifying stressors, goal setting, planning specific coping steps to be taken, implementing the plan, evaluating progress, and adjusting methods, if necessary.

2. Developing Coping Strategies
   
   a) **Cognitive coping strategies** change how people think about stressors.
      
      (1) In **cognitive restructuring**, catastrophic thinking is replaced with more constructive thinking. Stressors are not eliminated but perceived as less threatening and so are less disruptive.

   b) **Emotional coping strategies**, such as seeking social support, provide buffers against stress’s ill effects

   c) **Behavioral coping strategies**, such as time management, involve altering behavior patterns to minimize the impact of stressors.

   d) **Physical coping strategies** are aimed at directly altering physical responses before, during, or after stressors. Examples include drug use, progressive relaxation training, physical exercise, biofeedback, meditation, tai chi, and so on.
      
      (1) Prescription medications can be effective short-term coping aids. However, dependence on drugs may result in loss of perceived control over stress and may even increase stress.