Chapter 7
Physical Disorders and Health Psychology

Psychological and Social Factors that Influence Health
- Psychological, Behavioral, and Social Factors
  - Are major contributors to medical illness and disease
  - Examples include genital herpes, AIDS, cancer, cardiovascular diseases
- DSM-IV and Physical Disorders
  - Coded on Axis III
  - Recognize that psychological factors can affect medical conditions
- Psychological Approaches to Health and Disease
  - Behavioral medicine – Prevention, diagnosis, treatment of medical illness
  - Health psychology – Psychological factors involved in the promotion of health

How Do Psychological and Social Factors Influence Medical Illness?
- Two Primary Paths
  - Psychological factors can influence basic biological processes
  - Long-standing behavior patterns may put people at risk for disease
  - AIDS is an example of both forms of influence
- 50% of the Leading Causes of Death in the U.S. Are Linked to Behavior Patterns

Overview of Stress and the Stress Response
- Nature of Stress
  - Stress – Physiological response of an individual to a stressor
  - Stress responses vary from person to person
- The Stress Response and the General Adaptation Syndrome
  - Phase 1 – Alarm response (sympathetic nervous system arousal)
  - Phase 2 – State of resistance (mobilized coping and action)
  - Phase 3 – State of exhaustion (chronic stress, permanent damage)

Physiology of Stress
- The Biology of Stress
  - Stress activates the sympathetic branch of the ANS
  - Stress activates the HPA axis, producing cortisol
  - The relation between the hippocampus and HPA activation
- The Function of the Hippocampus in HPA-Stress Response Cycle
  - Hippocampus – Part of the limbic system and highly responsive to cortisol
  - Hippocampus helps to turn off the HPA cycle
  - Chronic stress may damage cells in the hippocampus
  - Damage to hippocampal cells interferes with stopping the HPA loop

Psychological and Social Factors: Their Relation to Stress Physiology
- Primate Research: High and Low Social Status
  - High cortisol is associated with low social status
  - Low social status is associated with fewer lymphocytes and immune suppression
  - Dominant males benefit from predictability and controllability
- Vulnerabilities Operative in Mental Illness Contribute to Physical Illness
  - Stress, perceived uncontrollability, low social support, negative affect
  - Interpretation of Physiological Response and Situation Seems Critical

Responses to threats and challenges range on a continuum from depression to excitement

Stress and the Immune System
- Divisions of the Immune System
  - Humoral branch – Blood and other bodily fluids
  - Cellular branch – Protects against viral and parasitic infections
- Function of the Immune System
  - Identify and eliminate antigens (i.e., foreign materials) from the body
  - Leukocytes are the primary agents

Leukocytes: Subtypes and Functions
- Macrophages – Body's first line of defense, surround and destroy antigens, signal lymphocytes
- Lymphocytes – B cells (humoral branch) and T cells (cellular branch)
- B cells produce antibodies that neutralize antigens
- memory B cells that are stored for the next encounter w/the antigens

Stress and the Immune System (cont.)
- T cells
  - Killer T cells directly destroy antigens
  - Helper T cells (T4) signal B cells to produce antibodies and the other T cells to attack
    - Can be overactive leading to autoimmune diseases (rheumatoid arthritis)
  - Suppressor T cells stop production of antibodies when not needed
Memory T cells
• Stress Dramatically and Quickly Alters Immune Function

Figure 7.3
An overview of the immune system

Figure 7.4
Pathways through which psychological factors might influence onset and progression of immune system-mediated disease

Acquired Immunodeficiency Virus (AIDS)
• Nature of AIDS
  – Course from HIV to full-blown AIDS is variable
  – Median time from initial infection to full-blown AIDS is 7.3 to 10 years or more
  – AIDS is diagnosed when several serious diseases (e.g., pneumonia, cancer, dementia, etc.) appear
  – Stress of getting an AIDS diagnosis can be devastating
• Role of Stress Reduction Programs
  – Higher stress and low social support speed progression of disease
  – Reduce stress of diagnosis, improve immune system functioning
• AIDS is Influenced by Psychological, Behavioral, and Social Factors

Cancer: Psychological and Social Influences
• Field of Psychoncology
  – Study of psychological factors and their relation to cancer
• Psychological and Behavioral Contributions to Cancer
  – Perceived lack of control
  – Inadequate or inappropriate coping responses (e.g., denial)
  – Overwhelming stressful life events
  – Life-style risk behaviors
  – Psychological factors also are involved in chemotherapy
• Cancer is Influenced by Psychological, Behavioral, and Social Factors

Cardiovascular Problems: Hypertension
• Cardiovascular System: An Overview
  – Heart, blood vessels, and mechanisms for regulating their function
• Hypertension – High Blood Pressure
  – Major risk factor for stroke, heart disease, and kidney disease
  – Causes wear and tear of the blood vessels
  – Essential hypertension is the most common form
• Contributing Factors and Associated Features of Hypertension
  – Affects 20% of all adults between the ages of 25 and 74
  – African Americans are most likely to develop hypertension relative to Caucasians
  – Salt, fluid volume, sympathetic arousal, stress, and lifestyle are contributors
  – Core psychological contributors include anger and hostility
• Hypertension Is Influenced by Psychological, Behavioral, and Social Factors

Cardiovascular Diseases: Coronary Heart Disease (CHD)
• Coronary Heart Disease (CHD)
  – Blockage of the arteries supplying blood to the heart muscle
  – Angina pectoris – Chest pain from partial obstruction of the arteries
  – Atherosclerosis – Accumulation of artery plaque (i.e., fatty substances)
  – Ischemia – Deficiency of blood supply because of too much plaque
  – Myocardial infarction – Heart attack involving death of heart tissue; results when an artery becomes completely clogged with plaque
• Psychological and Behavioral Risk Factors for CHD
  – Stress, anxiety, anger, poor coping skills, low social support, and lifestyle
  – Classic Type A Behavior Pattern - excessive competitive drive, sense of being pressed for time, particularly anger and negative affect
• CHD Is Influenced by Psychological, Behavioral, and Social Factors

Chronic Pain
• Acute vs. Chronic Pain
  – Acute pain – Follows injury and heals within 1 month on average
  – Chronic pain – Does not decrease with healing and treatment
  – Severity of pain does not predict one’s reaction to it
• Pain: Some Clinical Distinctions
  – Subjective vs. overt behavioral manifestations of pain
• Psychological and Social Factors in Chronic Pain
  – The role of perceived control over pain and its consequences
  – Role of negative emotion, poor coping skills, low social support, compensation
  – Social reinforcement for pain behaviors
• Gate Control Theory: An Integrative Account
• Endogenous Opiods: Our Body’s Response to Pain

Chronic Pain
• Gate Control Theory: An Integrative Account
  – Dorsal horns of spinal column act as a gateway for transmission of pain sensations
  – Determine pattern and intensity of sensations
  – Brain sends signals back to the spinal column, influencing this gating mechanism
• Endogenous Opiods: Our Body’s Response to Pain
20 Chronic Fatigue Syndrome: Psychological, Behavioral, and Social Influences

- Nature of Chronic Fatigue (CF)
  - Symptoms include lack of energy, marked fatigue, and pain
  - Most common in females, with incidence increasing in Western countries
  - No evidence to support link with viral infection, immune problems, depression

- Speculation About Causes
  - CF seems related to a high-achievement oriented lifestyle
  - Fast paced lifestyle combines with stress and illness
  - Psychological misinterpretation of after effects of illness

- Treatment
  - Medications are ineffective
  - Cognitive-behavioral interventions appear promising

21 A complex specific model of chronic fatigue syndrome

22 Psychosocial Treatment of Physical Disorders

- Biofeedback: An Overview
  - Patient learns to control bodily responses
  - Used with chronic headache and hypertension

- Relaxation and Meditation
  - Progressive muscle relaxation
  - Transcendental meditation (TM)

- Comprehensive Stress Reduction and Pain Management Programs
  - More effective and durable than individual interventions alone

23 Modifying Behaviors to Promote Health

- Life-Style Practices
  - Many health problems are traceable to lifestyles and behaviors
  - Behavioral risk factors are also influenced by psychological and social factors
  - Prevention and intervention programs target behavioral risks to improve health

- Types of Life-Style Behaviors
  - Injury and injury prevention – Repeated warnings are not enough
  - AIDS – Highly preventable by changing lifestyle behavioral factors
  - China and smoking cessation programs – Getting children involved
  - Stanford three community study – Success in reducing risk of heart disease; focused on smoking, diet, blood pressure and weight reduction

24 Results of the Stanford three community study

25 Summary of Physical Disorders and Health Psychology

- Psychological and Social Factors: Their Role in Illness and Disease
  - Several diseases are influenced by the effects of stress on immune function
  - Such influences interact with other psychological and social factors

- Psychosocial Treatments Aim to Prevent or Treat Physical Disorders
  - Comprehensive individual or community programs are best

26 Discussion Group Questions

- What are the two ways (i.e., two primary pathways) in which psychosocial factors could influence physical disorders?

- Describe the General Adaptation Syndrome and its 3 stages.

- Identify and explain one of the psychosocial approaches to the prevention or treatment of physical disorders?