Health Psychology

Psychology 46.339 (01)
Summer 2007
Instructor: Dr. Fuschia Sirois
Wednesday July 4:
Introduction & Lecture 1

- Taylor text, 6th ed.
- Lecture slides in pdf format on course web page
  - www.uwindsor.ca/fsiros
  - Teaching link on menu
  - Or go thru Course Notes
- 1 Midterm @ 25%
- Final exam 40%
- Term assignment 25%
- Prep guide discussion participation 10%

Pre-requisite: 46.236

Health Psychology

What is Health Psychology?

- Biobehavioural aspects of health
- Psychosocial dimensions
- Not mental health alone

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Pre-requisite: 46.236
The Mind-Body Relationship

- Hippocrates proposed that illness was the result of imbalances within the body's "humors"
- Middle ages – Disease as a spiritual problem
- Renaissance – return to naturalistic explanations – body & mind as one
- Descartes doctrine of body-mind dualism

Health Psychology

Overview of Terms

- Initially referred to as Behavioural Medicine
- Behavioral Health is a preventative branch
- often referred to as Psychosomatic Medicine
- Health Psychology emerged as a more inclusive term to describe the involvement of cognitions and emotions in health, not just behaviours (~1980)
- Psychoneuroimmunology (PNI) is the latest addition to the field of Health Psychology

Why Health Psychology?

- WHO definition (1948)
  - Health is a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity.
- Now holistic definition of “well-being”
- Acceptance of psychological and social factors
- Changing patterns of disease
- Health care costs

Health psychology

- The aggregate of the specific educational, scientific, and professional contributions of the discipline of psychology to the promotion and maintenance of health, the prevention and treatment of illness, and the identification of etiologic and diagnostic correlates of health, illness, and related dysfunction (Matarazzo, 1980).
- Health psychology is devoted to understanding psychological influences on how people stay healthy, why they become ill, and how they respond when they get ill (Taylor)
The Biomedical Model

- Emphasizes the physical causes of disease & ignores the psychological and social factors
- Body viewed as a machine & disease is seen as the breakdown of the machine
- Based on mind-body dualism
- Based on reductionism: complex phenomenon can be reduced down to their simpler components

The Biopsychosocial Model

- Engel (1977) proposed that biological, psychological & social factors affect health
- A systems approach with a hierarchy of levels, & every level is interconnected to other levels via feedback loops
- Each part of the system is both a whole and a part, so no dualism or reductionism

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Model Comparison

<table>
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<th>Biomedical Model</th>
<th>Biopsychosocial Model</th>
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<tr>
<td>Reductionistic</td>
<td>Macro-level as well as micro-level</td>
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<td>Single factor</td>
<td>Multiple factors</td>
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<td>Assumes mind-body dualism</td>
<td>Mind and body inseparable</td>
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<td>Emphasizes illness over health</td>
<td>Emphasizes both health and illness</td>
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Questions of interest to health psychology researchers

- Why do some people recover more quickly from illness/accidents/surgery?
- Is there a disease prone personality?
- How do your thoughts and beliefs about health influence your health behaviors?
- Can psychological interventions help people recover more quickly from illness?
- How is stress related to the onset of disease?

Questions of interest to health psychology researchers

- Why can some people handle stress better than others?
- What influences people’s decisions to seek medical care or not?
- How do you get people to engage in healthy behaviors and minimize risky behaviors?
- How does a person’s social relationships affect their health?
- What factors can help improve the well-being and quality of life of individuals with chronic illness?

Physiology

Overview of the major body systems
- Nervous system
- Endocrine system
- Cardiovascular system
- Respiratory system
- Digestive system
- Immune system
- The stress response
The Nervous System: Overview

Central Nervous System: This system consists of the brain and the spinal cord.

Peripheral Nervous System: This system is made up of the Somatic Nervous System and the Autonomic Nervous System.

The Nervous System Overview: Autonomic Nervous System

- Sympathetic Nervous System
  - Prepares body to respond to emergencies
  - Plays important role in reactions to stress.
  - Concerned with the mobilization of energy.

- Parasympathetic Nervous System
  - Acts antagonistically with the sympathetic nervous system.
  - Restores the body to a normal state.

Divisions of the Nervous System

Central nervous system (CNS)
- Brain and spinal cord

Peripheral nervous system (PNS)
- Peripheral spinal and cranial nerves and nerve ganglia

Somatic nervous system
- Motor impulses to voluntary (skeletal muscle), sensory impulses from somatic sensory receptors (mostly head, body, wall and limbs)

Autonomic nervous system (ANS)
- Motor impulses to involuntary (smooth muscle, cardiac muscle and glands), sensory impulses from autonomic sensory receptors (mainly in the skin)

Sympathetic division
- Parasympathetic division

The Nervous System Overview: Catabolic System

- Catabolic System

The Nervous System Overview: Anabolic System

- Anabolic System

Parasympathetic
- Stimulates flow of saliva
- Stimulates peristaltic and secretions
- Influences bladder contracture

Sympathetic
- Stimulates flow of blood
- Increases blood pressure
- Influences bladder contraction

Vagus nerve
- Conveys impulses to the heart and lungs
- Controls various functions of the body

Ganglion
- Collection of neurons that receive and transmit impulses

Inhibits heart rate
The Nervous System: The Brain

- The command center of the Body
- Hindbrain
  - Medulla, pons, cerebellum
- Midbrain
  - Major pathway for sensory and motor impulses moving between the forebrain and hindbrain.
- Forebrain
  - Diencephalon
  - Thalamus
  - Hypothalamus

Limbic system
- Amygdala, hippocampus play a role in stress and emotion
  - Amygdala: detect threat
  - Hippocampus: emotional memories
- Emotional functioning
  - Cingulate gyrus
  - Septum, areas of hypothalamus

The Nervous System: The Role of Neurotransmitters

- Neurotransmitters are chemicals that regulate nervous system functioning.
- Catecholamines - the neurotransmitters, epinephrine and norepinephrine, that promote sympathetic nervous system activity.
- The catecholamines are released in substantial quantities during stressful times.
Disorders of the Nervous System

- Cerebral Palsy
  - Chronic and non-progressive
  - Caused at birth
- Parkinson’s disease
  - Progressive degenerative
  - > 50, male, depletion of dopamine
- Multiple Sclerosis
  - Multitude of symptoms
  - Varying rates of onset
  - Hard to diagnose

The Endocrine System: Overview

- Complements nervous system in controlling bodily activities.
- Made up of ductless glands which secrete hormones into the blood.
- Governs slow-acting, long duration responses
- Regulated by hypothalamus and pituitary gland.

The Endocrine System: Figure 2.3

Endocrine system

- Works in a complementary fashion with the nervous system
- CNS – fast acting, short-lived responses
- Endocrine – slow-acting long duration responses
- Regulated by hypothalamus and pituitary glands via chemical signals
  - STH – regulates bone, muscle and organ development
  - TSH – regulates thyroid gland
  - ACTH – regulates adrenal glands
The Endocrine System: The Adrenal Glands

- Two small glands, top of each kidney.
- Each gland composed of
  - adrenal medulla and adrenal cortex.
- Adrenal medulla produces epinephrine and norepinephrine.
- Adrenal cortex is stimulated by ACTH, a hormone from the pituitary, and it releases hormones called steroids.

Disorders of the Endocrine System

- Diabetes
  - Type I insulin dependent, childhood onset
  - Type II: adult post age 40; lifestyle factors
  - Problems with glucose regulation via the pancreas and liver
  - Related to CV problems, nervous system damage
The Cardiovascular System: The Heart

Cardiovascular system
- consists of the heart, blood vessels and blood.
- Arteries carry blood from the heart to other organs and tissues.
- Veins return the blood to the heart after the oxygen has been used up.
- Heart rate affected by exercise, emotional changes, stress

The Cardiovascular System: The Heart

- Functions as a pump
- Left side takes in blood with oxygen from the lungs
- Blood is pumped into the aorta and then passes into smaller vessels to reach cells
- Oxygen and nutrients are exchanged for waste material
- Blood returns to the right side of the heart
The Cardiovascular System: The Cardiac Cycle

- Rhythmic phases of contraction and relaxation.
- Systole Cycle
  - Blood is pumped out of the heart so blood pressure inside the vessels increases.
- Diastole Cycle
  - Blood pressure drops as the heart muscle relaxes and blood is taken into the heart.

Cardiovascular system

Disorders
- Congenital Defects (present at birth)
- Circulatory problems
- Atherosclerosis
  - Angina pectoris
  - Myocardial infarction (MI)
- Blood pressure
- CVD – gender differences

The Cardiovascular System: The Blood

- Disorders Related to White Cell Production
  - Leukemia, leukopenia, leukocytosis
- Disorders Related to Red Cell Production
  - Anemia, erythrocytosis, sickle-cell anemia
- Clotting Disorders
  - Hemophilia, Clots (Thromboses) in blood vessels
  - Coronary thromboses, cerebral thromboses