Solution Manual for Medical Sociology 13th Edition Cockerham 0205896413 9780205896417

Chapter 2
Epidemiology

Learning Objectives

1. Describe common epidemiological measures.
2. Recognize how disease patterns are affected by modernization.
3. Explain why heart disease and obesity have complex causes that include social factors.
4. Define a pandemic and review the social features of AIDS and influenza

Chapter Outline

Introduction
Epidemiological Measures
The Development of Epidemiology
Disease and Modernization
The Complexity of Modern Ills
    Heart Disease
    Obesity
Pandemics: HIV/AIDS and Influenza
HIV/AIDS
    United States
    Worldwide
Influenza
Summary

New to this Edition

- Discussion of obesity as a disease

Chapter Summary

The epidemiologist is like a detective, investigating the scene of a crime in which the criminal is a disease or some other form of health menace. The epidemiologist is primarily concerned not with individuals but with the health profiles of social aggregates or large populations of people. Important tools of the epidemiologist are the ratios used to compute descriptions of mortality, incidence, and prevalence. These rates can be either crude rates or rates reflecting age-specific data, sex-specific data, and so on.

Many diseases in modern society such as coronary heart disease are very complex. The example of AIDS indicates how challenging health problems can be to the practice of epidemiology. Moreover, it has been noted that as underdeveloped societies modernize, the pattern of their diseases changes accordingly. Communicable diseases are replaced by chronic illnesses such as heart disease and cancer. A demanding lifestyle, inadequate diet, smoking, drug and alcohol abuse, obesity, lack of exercise, and exposure to environmental pollution have become the principal risk factors for ill health in modern society. But people can change their behavior and reduce or eliminate their risk of becoming sick.

Discussion Questions

1. John Snow's investigations set the stage for modern epidemiology. What did he do and how was it different from previous approaches to understanding diseases?

2. How does the transition from infectious diseases to chronic ailments change epidemiological investigations? Use the examples of heart disease and HIV/AIDS to illustrate.

3. What are the primary modes of transmission of HIV/AIDS around the world? Discuss the social factors influencing how this disease is spread.

MEDICAL SOCIOLOGY, 13TH EDITION

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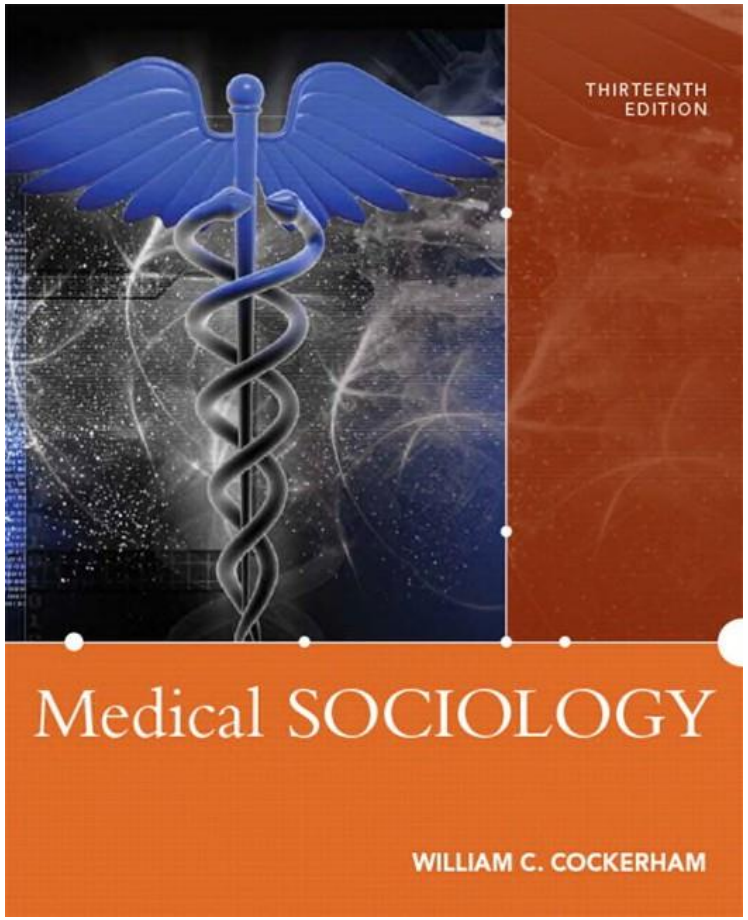

Chapter 2

Epidemiology

Introduction

- Epidemiology is a multi-disciplinary field that studies the origin and distribution of health problems, whether infectious diseases, chronic ailments, or problems resulting from unhealthy behaviors

Epidemiological Measures

- Case: An episode of a disorder, illness, or injury involving a person
- Prevalence: The total number of cases of a health disorder that exist at any given time
  - Point prevalence (the number of cases at a certain point in time, usually a particular day or week)

Epidemiological Measures

  - Period prevalence (the total number of cases during a specified period of time, usually a month or year)
  - Lifetime prevalence (the number of people who have had the health problem at least once during their lifetime)
- Incidence: Refers to the number of new cases of a specific health disorder occurring within a given population during a stated period of time

Epidemiological Measures

  - Distinguished from prevalence as the rate at which cases first appear, while prevalence is the rate at which all cases exist
- Crude rate: The number of persons (cases) who have the characteristics being measured during a specific unit of time
  - Examples: Birth rates and mortality rates

The Development of Epidemiology

- Epidemics only began to affect human populations as trade between regions increased and as humans began moving in greater proportions into cities
- Bubonic plague
  - Affected Europe between 1340 and 1750
  - Killed approximately one-third of the European population

The Development of Epidemiology

  - Transmission of the disease was not understood initially but social patterning in the distribution of the disease was observed
- John Snow's investigations into cholera outbreaks in London
  - He systematically mapped out cases of infection, interviewed victims, and traced their daily activities to a common source: contaminated well-pumps

The Development of Epidemiology

  - Provided the foundation of modern epidemiological methods
- Causal agents recognized today:
  - Biological agents - bacteria, viruses, or insects
  - Nutritional agents - fats and carbohydrates
  - Chemical agents - gases and toxic chemicals that pollute the air, water, and land
  - Physical agents - climate or vegetation

The Development of Epidemiology

  - Social agents - occupation, social class, location of residence, or lifestyle

- Social environment refers to actual living conditions, such as poverty or crowding, and also the norms, values, and attitudes that reflect a particular social and cultural context of living

The Development of Epidemiology

  - i.e., what a person does, who a person is, and where a person lives influences what health hazards are most likely to exist in that individual's life

- Stages in the field of epidemiology:
  - Sanitary era (early 19th century) - focus was largely on sewage and drainage systems, and the major preventive measure was the introduction of sanitation programs

The Development of Epidemiology

- Infectious disease era (late 19th to mid-20th century) - principal preventive approach was to break the chain of transmission between the agent and the host
- Chronic disease era (mid- to late 20th century) - focus was on controlling risk factors by modifying lifestyles, agents, or the environment

The Development of Epidemiology

- Eco-epidemiology (21st century) - preventive measures are multidisciplinary as scientists from many fields use their techniques to deal with a variety of health problems at the molecular, social behavioral, population, and global levels

Disease and Modernization

- The health profiles of industrialized societies are different from that of developing countries
- Modernizing countries experience:
  - Reduced mortality from infectious diseases and parasitic disorders
  - Declines in other diseases of the digestive and respiratory systems with a communicable component

Disease and Modernization

- Increases in life expectancy
- Declines in infant mortality
- Increases in mortality from heart disease, cancer, and other physical ailments associated with modern living

The Complexity of Modern Ills: Heart Disease

- Heart disease represents an example of the complexity of modern health problems
  - Multiple factors contribute to the risk of developing heart disease by pathways not yet fully understood
  - Significant risk factors include:
    - Sex (specifically male)
    - High blood pressure
    - Diabetes
    - Advancing age
    - Cigarette smoking
    - Obesity

The Complexity of Modern Ills: Obesity

- In 2013, the American Medical Association (AMA) officially recognized obesity as a disease
- People determined to be obese by the BMI may be otherwise healthy
  - And others measured as not obese may have a dangerous level of lower abdomen body fat and metabolic problems linked to excessive weight

Pandemics: HIV/AIDS and Influenza

- Infectious diseases are either returning or are newly emerging through the effects of globalization, urbanization, and global warming
- Pandemics are epidemics that affect people in many different countries and are the deadliest infectious threat to health in a globalizing world

Pandemics: HIV/AIDS – U.S.

- Primary mode of transmission (CDC 2007):
  - Among adult and adolescent males:
    - 64 percent of all cases reported were homosexual and bisexual men
    - 13 percent were IV drug users
    - 7 percent were homosexuals and IV drug users
    - 11 percent resulted from heterosexual contacts
    - 2 percent from other causes like blood transfusions

Pandemics: HIV/AIDS – U.S.

- Among adult and adolescent females:
  - 72 percent are from heterosexual contact with infected males
  - 25 percent are infected from IV drug use
  - 3 percent from other sources

Pandemics: HIV/AIDS – Worldwide

- Africa (33.3 million cases)
  - South of the Sahara the hardest hit
  - Primary mode of transmission: heterosexual contact
  - Migrant labor system plays a vital role in transmission, spreading disease from urban to rural areas
  - Women account for 60 percent of cases

Pandemics: HIV/AIDS – Worldwide

- Western Europe (850,000 cases) and Eastern Europe (1.4 million cases)
  - Primary mode of transmission: Homosexual activity and IV drug use
- Asia (South/Southeast Asia, 3.8 million cases; East Asia and China, 770,000 cases)
  - Primary mode of transmission: Heterosexual activity (especially through migrant labor systems and prostitution)

Pandemics: HIV/AIDS – Worldwide

- Latin America (2.0 million cases) and Caribbean (230,000 cases)
  - Originally spread through homosexual activity and IV drug use
  - Now spreading to women through bisexual activity by men

Pandemics: Influenza

- Past outbreaks, such as 1918 “Spanish flu,” have killed millions worldwide
- Recent outbreaks of H1N1 (“Swine flu”) and H5N1 (“Avian flu”) have the potential to become especially serious pandemics
- Predicting outbreaks of influenza and controlling the spread of infection remains challenging for epidemiologists