HEALTH AND ENVIRONMENT

DR. SHAMSUL AZAHARI ZAINAL BADARI
DEPARTMENT OF RESOURCE MANAGEMENT AND CONSUMER STUDIES
FACULTY OF HUMAN ECOLOGY, UPM
By the end of this lecture, student can:

- Define what is health and environmental health
- Determine the determinants of health
- Explain the Health Model
- Associate the ecology and human health
DEFINITION

• Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 1946)

• Environmental health is one aspect of public health that is concerned with those forms of life, substances, forces, and conditions in the surroundings of man that may exert an influence on man’s health and well-being.
DETERMINANTS OF HEALTH

• Hereditary or biological factors
• Medical care
• Lifestyle
• Environment
DETERMINANTS OF HEALTH

- **Hereditary or biological factors**
  - Human biology controlled by genetics
  - A person may healthy but have inherited condition
    - Hemophilia, diabetes, mental retardation, lack of resistance to diseases
    - Research shows evidence traits inherited from mother and father can influence person becomes addicted to alcohol or drug

- **Medical care**
  - Receive medical care during lifetime can determine our health
  - Examples:
    - child develops streptococcal infection – does not get medical care – might develop a rheumatic heart condition
  - Two main aspects of health care:
    - Technology – Sophisticated equipment
    - Medical self help – self examination of the skin, breast, mouth, eyes, nails.
Incomplete penetrance of hereditary cancer

- Affected (cancer)
- Unaffected (normal)
- Unaffected carrier (no cancer)

This diagram shows a 50% penetrance of cancer.

Diagrammatic representation of penetrance (Adapted from the National Cancer Institute and the American Society of Clinical Oncology)
DETERMINANTS OF HEALTH

• Lifestyle
  © Contributing to health status
  © A person has an excellent body but eats poorly, inactive, smokers, drinks heavily may develops health problems quickly.
  © Lifestyle may be the easiest to control but require much effort

• Environment
  © Affects people’s health more strongly than any of other determinants.
  © Environment encompasses
    • Physical
    • Biological
    • Social
  © Many diseases related to diseases-
    ® Food poisoning
    ® Typhoid fever
HEALTH MODEL

- Ecological Model
- Social Ecological Model
- WHO Model
- Holistic Model
ECOLOGICAL MODEL

Suitable to explain communicable diseases

- Based on the concept of ecological balance between:
  - Host
  - Agent
  - Environment

- Ecological balance can be disturb:
  - Environment change
  - Ratio human with high susceptibility increase in the population.
  - Number of agents increase

- Drug, sanitation, immunization can be used to achieve ecological balance
SOCIAL ECOLOGICAL MODEL

- Developed by Morris.
- Upgrading from Ecological Model.
- Replace agents (communicable diseases) with individual factors (non-communicable disease).
- Suitable to explain non-communicable disease.
- Proposed: No specific etiological agents related to specific disease.
- Behavioral factors are the most important factors compared to environmental factors that contribute to diseases.
- Transitional countries.
SOCIAL ECOLOGICAL MODEL

Genetic

HOST FACTORS

EXPERIENCE

ENVIRONMENT FACTORS

INDIVIDUAL BEHAVIORAL FACTORS

Physical

Social
WHO MODEL

# Continuation from social ecological model

# Holistic aspect (physical, mental and social)

# Interrelated between body, mind and spiritual

# Combination between modern medication and traditional from east and west.
HOLISTIC MODEL

Pathways to WELLNESS...

**Physical**
- being active
- eating well
- getting enough sleep
- being safe and secure

**Intellectual**
- sharing knowledge & experiences
- mastering new skills
- expanding knowledge
- being curious

**Spiritual**
- finding meaning in life
- appreciating life, joy and beauty
- practicing your faith
- celebrating cultural identity

**Emotional**
- being self aware
- having a positive outlook
- managing feelings well
- accepting yourself
- having good coping skills

**Occupational**
- engaging in rewarding activities
- making good use of time
- having satisfying work
- being a volunteer
- being creative

**Social**
- caring for and about others
- being connected

**Giving and receiving support**
- giving and receiving support

**Being an active member of the community**
- being an active member of the community

**Wellness**
HOLISTIC MODEL

@ Health consist of four (5) dimensions
  # Physical
  # Intellectual
  # Emotional
  # Spiritual
  # Occupational

@ Proposed: Diverse risk factors of disease can contribute to various types of diseases.

@ Occurs in developed countries.
ENVIRONMENTAL HEALTH MODEL (BLUM, H.L, 1981)
ECOLOGY AND HUMAN HEALTH

• Term ecology derived from the Greek word: 
  # oikos – house or home.

• Ecology is the study of an organism’s house.

• Many definitions of ecology, however have a common theme.
  ‘ that ecology is the study of organisms and their environment’

• Environment includes both animate and inanimate factors
ECOSYSTEM CONCEPT

• Basic functional unit include biotic element and interaction with their environment (abiotic element)

• Ecosystem consist of two (2) types:
  # Natural ecosystem- earth, terrestrials, aquatic
  # Human made ecosystem- agriculture, aquaculture, monoculture

• Ecosystem elements
  # Biotic: autotroph, heterotroph
  # Abiotic: organics substance, inorganic substance, climate
THANK YOU