Hilla University College

Nursing Department

Family and Community Health Nursing

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Lecture – 13 –

The Environmental Health

Defines Environmental Health (WHO, 2013)

• "all the physical, chemical, and biological factors external to a person and all the related factors impacting behaviors. It encompasses the assessment and control of those environmental factors that can potentially affect health. It is targeted towards preventing disease and creating health-supportive environments."

Environmental health experts believe that the purpose of environmental health **is to assure the conditions of human health and provide healthy environments for people to live, work, and play.**

• This can be accomplished through risk assessment, prevention, and intervention.

· Efforts are made to reduce and eliminate contaminant threats to human health from air, water, food, and the built environment.

· Maintaining a healthy environment is vitally important to promoting the health of populations.

· Health environment improves the quality of life and increases years of healthy living.

· Research shows that the environmental changes of the past period have influenced the status of public health.

.Globally, environmental factors contribute to nearly 25% of all mortality and morbidity (WHO, 2006).

• Since the beginning of the twenty-first century, it has become clear that the world must address the environmental difficulties, including

1. The extinction of some species,

2. Diminishing rain forests,

3. The increase of toxic waste dumps,

4. Progressive destruction of the ozone layer,

5. Shortage of landfill sites,

6. Consequences of climate change

7. Threats of terrorism,

8. Development of deadly chemical and ballistic weapons,

9. Poor quality of pesticides and herbicides,

10. Oceanic contamination through toxic dumping and petroleum spills,

11. Overcrowding of urban areas, and

12. Traffic congestion.

Areas of Environmental Health

Seven areas of environmental health:

1. The built environment

2. Work-related exposures

3. Outdoor air quality

4. Healthy homes

5. Water quality

6. Food safety

7. Waste management

PROBLEMS	DEFINITION	AREA
• Drunk driving • Secondhand smoke •Noise exposure •Urban crowding	Buildings , spaces , and products that are created or modified by people , including homes , schools , workplaces ,	The built environment

• Technological hazards	parks / recreation areas , greenways , business areas , and transportation systems .	
• Asbestos exposure • Agricultural accidents • Excessive exposure to x – rays	Occupational exposure to environmental hazards that can cause illness or injury .	Work related exposures
•Gaseous pollutants • Greenhouse effect • Destruction of the ozone layer • Aerial spraying of herbicides and pesticides • Acid rain • Nuclear facility emissions	The protectiveness of the atmospheric layers , the risks of severe weather , and the purity of the air for breathing purposes .	Outdoor air quality
• Homelessness • Rodent and insect infestation • Presence of lead - based paint • Sick building syndrome • Unsafe neighborhoods • Radon gas seepage in homes and schools	The availability , safety , structural strength , cleanliness , and location of shelter , including public facilities and family homes . This includes indoor air quality .	Healthy homes
• Contamination of drinking supply by human waste • Oil spills in the world's waterways • Pesticide or herbicide infiltration of groundwater • Aquifer contamination by industrial pollutants • Heavy metal poisoning of fish	The availability of and accessibility to a clean water supply , the mineral content levels , pollution by toxic chemicals , and the presence of pathogenic microorganisms .	Water quality
• Malnutrition • Bacterial food poisoning • Food adulteration • Disruption of food chains by ecosystem destruction • Carcinogenic chemical food additives	The availability , relative costs , variety , safety , and health of animal and plant food sources .	Food safety
• Use of nonbiodegradable plastics • Poorly designed solid - waste dumps •Inadequate sewage systems Transport and storage of hazardous waste . • Illegal industrial dumping • Radioactive hazardous wastes	The management of waste materials resulting from industrial processes , human consumption , and efforts to minimize waste production .	Waste management

Ecologic Perspective:

· An ecosystem is a community of living organisms and their interrelated physical and chemical environment. Within an ecosystem, any manipulation of one element or organism may have hazardous effects on the rest of the system.

• **Habitat** includes aspects of the environment in which people live, including housing, workplaces, communication systems, flora, fauna, climate, topography, services, and economic and political structures of societies and local communities.

• **Population factors** include the characteristics of the population (age, gender, and genetic predisposition).

· **Behavioral factors** include health-related beliefs and behaviors, which are shaped by a range of social and economic factors.

• **Habitat:** the natural home or environment of an animal, plant, or other organism.

· **Population factors:** Population growth is based on four fundamental factors: birth rate, death rate, immigration, and emigration.

· **Behavioral Factors:** health related beliefs and behavior (Like; Psychological, Social, Cultural, Personal, Economic).

Major Global Environmental Concerns:

►**Global environmental concerns now face the world, including**:-

o Overpopulation.

o Ozone depletion.

o Global warming, deforestation, wetlands destruction, desertification.

o Energy depletion.

►Overpopulation:

· Human population took hundreds of thousands of years to reach 1billion in the 1800s and until 1960 to reach 3 billion. Less than 50 years later, it has more than doubled to 6.7 billion. Now, the number has reached 8 billion.

· Every 11 years, the world gains 1 billion people. Assuming that overall fertility rates continue to decline as they have since the 1970s.

· by 2050 there may still be well in excess of 9.2 billion inhabitants of Earth.

· in Germany, Italy, Russia, and Spain for instance, their populations will decrease by anywhere from 2% to 10 % by the year 2025.

· countries such as Nigeria, Zambia, and Jordan have high fertility rates, and it is likely that their populations will increase by 30% to 60% over the same period .

• What do these statistics and trends mean for the health of populations and the ecosystem?

Government's Role:

►►**Governing a country has a responsibility to** ;

o Provide a well-formed infrastructure of health and safety services for its population;

o Economic development that provides employment,

o Housing, and services;

o Political strength to provide stability to the nation.

o Many countries with unstable political systems are unable to deal effectively with overpopulation issues.

Nurse's Role: Include :

(a) Teaching families that birth spacing improves child and maternal survival.

(b) Preventing high-risk pregnancies, such as those among teens and adult women.

(c) preventing the growing epidemic of HIV/AIDS;

(d Providing family planning education to prevent worldwide deaths from unsafe abortions.

(e) Providing prenatal care—because healthy mothers equal healthy children.

►►Ozone Depletion:

· Its global warning, its trapping of heat radiation from earth surface that increase the overall temperature of the world, it caused by carbon dioxide & other gases that enter the atmosphere through depleted ozone layer & become trapped and effect on health.

Government's Role:

• Set standards for air quality and industrial emissions and delegated funds to assist in pollution control programs.

• public health efforts are needed to help identify pollution sources and related health hazards.

• Reduce sulfur in gasoline.

• Reduce use more energy.

• Consider transportation alternative

Nurse's Role:

 Cigarette smoke are common indoor pollutants that can have ill effects on nonsmokers as well as smokers.

 Infants and other exposed persons are at risk.

 Carbon monoxide poisoning may result from stove and boiler emissions or from car drain in a garage.

 Nurses can assist with the prevention or elimination of these health hazards by ensuring that the indoor environment is well ventilated (oxygenated) and heating equipment properly maintained.

►►Deforestation, Wetlands Destruction, and Desertification:

· **Deforestation** is the clearing of tropical and temperate forests for cropland, cattle grazing, or urbanization.

· **Wetlands** are natural inland bodies of shallow water. Benefit of Wetlands; it's water purification, flood control, carbon sink and shoreline stability.

· **Desertification** refers to the conversion of fertile land into desert, which is unable to support crop growth or wildlife.

· Any natural or manmade process that changes life-supporting regions into land for other use or into unproductive wastelands upsets the ecosystem of the area.

· The destruction of forests and the upturning of Earth for urban sprawl uncovers organisms hidden for eons, to which humans and animals are then exposed

Government's Role:

· Make decisions that save the wetlands and forests.

Nurse's Role:

· Community health nurses can make a difference in this area. Perhaps no other person knows a community more intimately than the community health nurse. This role gives a valid voice of concern at the local level.

· By using leadership and collaborative skills

►►Energy Depletion:

• Most of the energy sources we use today are not renewable. Wood has been used for thousands of years and was our first fuel.

· Natural gas for heat and fuel can be a highly efficient energy source.

· Nuclear energy has been used for at least 50 years.

Government's Role:

• Renewable sources of energy need to be discovered.

• A global effort to increase awareness and additional technology to use these energy sources.

♣Collaborative Strategies to Promote Environmental Health:

1. Learn about possible environmental health threats

2. Assess clients' environment and detect health hazards

3. Assist with the implementation of programs

4. Educate consumers and assist them to practice preventive measures.

5. Apply environmentally related research findings and participate in nursing research.

6. Take action to correct situations in which health hazards exist.

7. Plan collaboratively with citizens and other professionals to devise protective and preventive strategies.

8. Take action to promote the development of policies and legislation that enhance consumer protection and promote a healthier environment.

9. Assist with and promote program evaluation to determine the effectiveness of environmental health efforts.

Factors Affecting of the Population:(Types of pollution)

1. Air pollution is now recognized as one of the most hazardous sources of chemical contamination.

• It is especially prevalent in highly industrialized and urbanized areas where concentrations of motor vehicles and industry produce large volumes of gaseous pollutants

• Outdoor air pollution contributes to cardiovascular and respiratory diseases and is believed responsible for nearly 1 million lung cancer deaths yearly.

• With respect to children, infant mortality in the first year of life, bronchitis, asthma, and reduced lung development are additional health threats

2. Dust, Gases:

• It contains numerous types of chemical irritant and poisons.

• Coal miners have developed black lung from inhalation dust.

3.Acid Rain:

· Air pollutants such as sulfur dioxide from power plant emissions or nitrogen oxides from motor vehicle combine with rain water, snow to produce sulfuric &nitric acid which change the biology of water, it kills small forms of life.

4. Water Pollution:

• Water can be contaminated and made unsafe for drinking in many different ways.

• Water may be infected with bacteria or parasites that cause disease. Giardia lamblia is a parasite that enters the water supply.

· Toxic substances, such as pesticides, are introduced by humans into water systems and structure another form of water pollution.

· Pollutants may upset the ecosystem, affecting natural organisms that help purify water systems.

5. Soil pollution:

• Soil contamination or soil pollution is caused by the presence of (humanmade) chemicals or other alteration in the natural soil environment. It is typically caused by industrial activity, agricultural chemicals, or improper disposal of waste. Contamination is correlated with the degree of industrialization and intensity of chemical usage.

“ Thank you for listen “