

## **ENVIRONMENTAL DETERMINANTS OF HEALTH**

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### **Contents**

1. Introduction
2. Domestic Environment
  - 2.1. Water and Sanitation
  - 2.2. Domestic Pests
  - 2.3. Food Contamination
  - 2.4. Air Pollution from Domestic Sources
  - 2.5. Tuberculosis
3. Local Environment
  - 3.1. Air Pollution
    - 3.1.1. Suspended Particulate Matter
    - 3.1.2. Air Pollutants
    - 3.1.3. Toxic Air Pollutants
  - 3.2. Hazardous Waste
    - 3.2.1. Plastics
    - 3.2.2. Asbestos
  - 3.3. Water Pollution
    - 3.3.1. Domestic Wastes and Sewage
    - 3.3.2. Industrial Wastes and Effluents
  - 3.4. Diseases Associated with Polluted Water
4. Global Factors
  - 4.1. Ozone Depletion
    - 4.1.1. The Ozone Hole
    - 4.1.2. Ozone Depletion
  - 4.2. Global Warming
    - 4.2.1. Causes of Global Warming
    - 4.2.2. Health Implications
  - 4.3. Acid Rain
    - 4.3.1. Global Menace of Acid Rain
    - 4.3.2. Health Hazards
5. Conclusion
- Glossary
- Bibliography
- Biographical Sketch

### **Summary**

Determinants are the factors that contribute to the start and spread of disease. With an increased awareness of environmental factors influencing the quality of life, epidemiologists now approach disease from a more holistic perspective considering the role of environmental determinants.

Environmental determinants are treated in this article at three levels: domestic, local, and global. Domestic is used to denote the home environment, local refers to the wider location of the region, and global the worldwide context.

The section on domestic determinants deals with such issues as water and sanitation, domestic pests, food contamination, and common pollutants that have influenced health conditions. The direct link between poor living conditions and the prevalence of disease is noted.

Local determinants deals with air pollution, water pollution, and the influence of hazardous wastes on health. Modern lifestyles contribute to polluting the environment and thereby causing increasing risks to health.

Global factors deal with ozone depletion, global warming, acid rain, and the health hazards that have resulted from these major disruptions to the environment. Escalating human activities are resulting in new forms of pollution, threatening human survival.

A plea is made for a paradigm shift in the thinking of health practitioners and policy makers in understanding health within this total picture in which life is enmeshed today. Environmental determinants play a key role in the health of human beings.

## **1. Introduction**

Ironically, the environment, which sustains life, has itself become a threat to human survival. Environment-related diseases are increasing and recent studies at various levels place environmental factors high on the list of determinants of health, particularly in the developing world. While in developed nations lifestyle factors contribute significantly towards health and disease, the poorer nations are badly affected by the deteriorating environment in which millions of people are forced to live. Epidemiological studies, the study of the determinants and the distribution of a disease, have in recent times helped underline the intricate link between environmental factors and the promotion of health.

What do we mean by the term “environment”? Normally, this term is used to speak of biological and natural surroundings. However, there is increasing evidence that social factors have a bearing on the environment, particularly with urban poverty and overpopulation and their influence on health conditions. Poor sanitation and contaminated water supplies, added to the overcrowding within pockets of the urban setting, continue to be the cause of millions of deaths. But people’s lifestyles also have to be considered. The urban social environment contains direct health factors such as alcohol and drug and sex abuse. These influences of the urban environment interrelate with environmental factors to cause various complications. Thus, the term environment

will need to be defined not just to include physical elements but social factors in each context as well.

The term “determinants” is used to indicate the factors contributing to the start and the spread of a disease. Although there are various interlinking determinants for the occurrence of any disease, the focus here is on environmental determinants. But, as seen earlier, environmental factors are not merely the physical characteristics of our surroundings; they are also the biological, social, and economic characteristics that contribute to human physical and mental health.

With a better understanding of the environmental determinants of infectious and parasitic diseases, epidemiologists are able to approach disease from a more holistic environmental perspective. Some classifications of diseases are beginning to present these in comprehensive forms, based on the environmental determinants. These classifications highlight transmission routes and control measures within given environmental contexts. Environmental determinants must become significant in efforts to implement control measures.

For the purposes of this article, environmental determinants will be categorized into three levels: domestic, local, and global. The domestic are factors affecting people within the home environment, whereas the local refer to the issues peculiar to a wider location—an urban or rural region. There is an unavoidable overlap between these two environments, but it is helpful to study them separately so that preventive measures can be employed at each level. By global determinants are meant those environmental changes worldwide that are having a major impact on health patterns. The implication of these issues on health is yet to be determined as some of the influences are long term. Despite these classifications of domestic, local, and global, it must be underlined again that there is an intricate interaction between all these factors and it is unrealistic to separate one neatly from the other.

Epidemiology is the study of the incidence, determinants, and distribution of disease in a community. Epidemiological studies have recently begun to take into account environmental determinants and disease causation and we note this in what is called the “epidemiological triad.” There is a dynamic relationship between the “agent” that transmits disease and the “host” that entertains on the one side, and the “environment” on the other. The host and the agent operate within a particular environment and, depending on the condition of that environment, disease spreads or is controlled. With environmental degradation, which is not confined to poorer countries, there are further complications. A dirty polluted environment in a slum certainly adds to the risk factors of disease, while the richer countries have pollution through the effects of acid rain and a depleted ozone layer, with even lifestyle factors playing an important part. Disease causation in any context is an intricate interplay between all these factors—the agent, the host, and the environment—and is referred to as the epidemiological triad.

One thing that has been confirmed in recent studies is the intricate link between health conditions and the state of the environment. In its conceptual framework, the development of an integrated approach linking environment and health will address three global objectives:

- (i) to control and promote compatible lifestyles and consumption patterns in rich groups and developed countries;
- (ii) to provide an environment with ability to promote health, through reducing physical, chemical, and biological hazards and assuring the necessary resources for an adequate health status for all; and
- (iii) to achieve for all individuals and organizations the consciousness of their own responsibility of health and of their environmental basis.

## 2. Domestic Environment

Determinants within the domestic environment are those environmental factors prevalent within homes that cause disease or promote health directly. It is hard to separate domestic from local determinants, as each is dependent on the other. For instance, sanitation is a local factor but depends on domestic use or misuse. Also, in identifying causes or risk factors, although certain emissions in the local environment or the global scenario may be said to be responsible, there are genetic as well as dietary factors that play a prominent role in bringing about certain diseases.

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### Biographical Sketch

**Ken Gnanakan** studied chemical engineering at Osmania University, Hyderabad, India, graduated in theological studies from London Bible College, and holds a Ph.D. from King's College, London

University. Dr. Gnanakan has been involved in ACTS Ministries, a nongovernmental organization in South India, working at grassroots level in health, environmental, and educational programs with schools, universities and governments and in grassroots slum and rural communities. Dr. Gnanakan holds the following positions: General Director, ACTS Ministries, India; President, International Council for Higher Education, Zurich, Switzerland; Chair, Program for Environmental Education in Schools, India; Editor, *PEAS Magazine*; and Consultant, Environment Programs in School of Health Science, Indira Gandhi National Open University.

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