

Environmental Health and Sanitation

Lukkumanul Hakkim. S

PhD Research Scholar, Annamalai University, Chidambaram, Tamil Nadu, India

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ABSTRACT

This paper deals with environmental health and sanitation. It outlines the concept of sanitation and environmental health. This paper makes a special note on concept and principles of environmental health in community health promotion and environmental intervention models. This paper examines the human interaction with the environment and its associated factors. This paper concludes with some interesting findings.

KEYWORDS: Environmental health, Sanitation, Personal hygiene, Hygiene promotion, Healthy Behaviours

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Introduction

Hygiene generally refers to the set of practices associated with the preservation of health and healthy living. The focus is mainly on personal hygiene that looks at cleanliness of the hair, body, hands, fingers, feet and clothing, and menstrual hygiene. Improvements in personal knowledge, skill and practice that modify an individual's behaviour towards healthy practice are the focus of hygiene promotion. Safe hygiene practice includes a broad range of healthy behaviours, such as hand washing before eating and after cleaning a child's bottom, and safe faeces disposal. The hygiene education should aim at transferring knowledge and understanding of hygiene and associated health risks in order to help people change their behaviour to use better hygiene practices. Sanitation means the prevention of human contact with wastes, for hygienic purposes. It also means promoting health through the prevention of human contact with the hazards associated with the lack of healthy food, clean water and healthful housing, the control of vectors and a clean environment. It focuses on management of waste produced by human activities.

Concept of Sanitation

There are different types of sanitation relating to particular situations, such as: Basic sanitation: refers to the management of human faeces at the household level. It means access to a toilet or latrine, Onsite sanitation: the collection and treatment of waste at the place where it is deposited.

Food sanitation: refers to the hygienic measures for ensuring food safety. Food hygiene is similar to food sanitation, Housing sanitation: refers to safeguarding the home environment.

Environmental sanitation: the control of environmental factors that form links in disease transmission. This category includes solid waste management, water and wastewater treatment, industrial waste treatment and noise and pollution control. Ecological sanitation: the concept of recycling the nutrients from human and animal wastes to the environment.

Environmental Health

Environmental health is broader than hygiene and sanitation; it encompasses hygiene, sanitation and many other aspects of the environment. It also involves studying the environmental factors that affect health. The World Health Organization's definition is as follows: Environmental health addresses all the physical, chemical, and biological factors external to a person, and all the related factors impacting behaviours. It encompasses the assessment and control of those environmental factors that can potentially affect health. Key phrases in this definition are environmental factors and potentially affect health.

Components of Environmental Health

Description	Concerns
Personal hygiene	Hygiene of body and clothing
Water supply	Adequacy, safety (chemical, bacteriological, physical) of water for domestic, drinking and recreational use
Human waste disposal	Proper excreta disposal and liquid waste management
Solid waste management	Proper application of storage, collection, disposal of waste. Waste production and recycling
Vector control	Control of mammals (such as rats) and arthropods (insects such as flies and other creatures such as mites) that transmit disease
Food hygiene	Food safety and wholesomeness in its production, storage, preparation, distribution and sale, until consumption
Healthful housing	Physiological needs, protection against disease and accidents, psychological and social comforts in residential and recreational areas
Institutional hygiene	Communal hygiene in schools, prisons, health facilities, refugee camps, detention homes and settlement areas
Water pollution	Sources, characteristics, impact and mitigation
Occupational hygiene	Hygiene and safety in the workplace

Concepts and Principles in Hygiene and Environmental Health

Diarrhoea, is a symptom of many common diseases, as a means to understand the concept of disease transmission, the role of environmental health and the framework for hygienic improvements.

Environmental Health and Disease Transmission

The description of diarrhoea transmission represents a good way to understand the pathways of disease through the environment and how environmental health and hygiene can help prevent disease transmission.

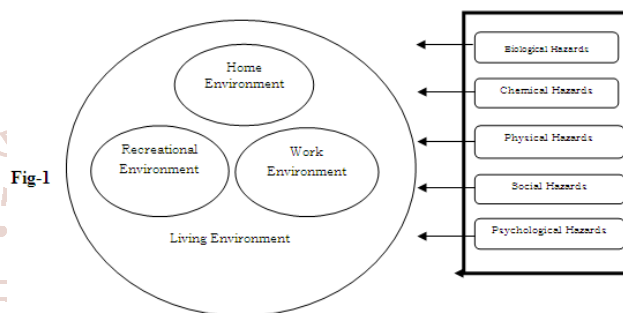


Fig-1

Table 1 Possible environmental health interventions for diarrhoea

Intervention strategies	Activities
Intervention at the source (where the diarrhoea infection comes from)	Avoid open defecation, install a latrine, always use a latrine to bury faeces and urine
Intervention in the environment (how the diarrhoea infection is transmitted)	Use safe drinking water, Hand washing, Vector control and management, Proper refuse and liquid waste management, Provision of food safety and Healthful housing
Intervention at the host (the person who might become infected)	Hygiene promotion through hygiene education and community mobilization Vaccination (if available) Healthy living

The place of Environmental Health in the Community

Our living environment is composed of home, work and recreational centres where people spend their time. Water, air and food are our concern. The provision of environmental health services extends to all these aspects of our lives. It is important to know the different parts of your kebele so that you can promote better hygiene in all areas.

Environmental Intervention Models

It could be noted that more than 80% of communicable diseases in India are believed to be preventable using environmental health interventions. Generally, there are two intervention models: the clinical intervention model, which looks at treating the sick person, and the public health model, including environmental health, which looks at how to stop people getting sick in the first place by providing a healthy environment. This is indicated in figure 2.

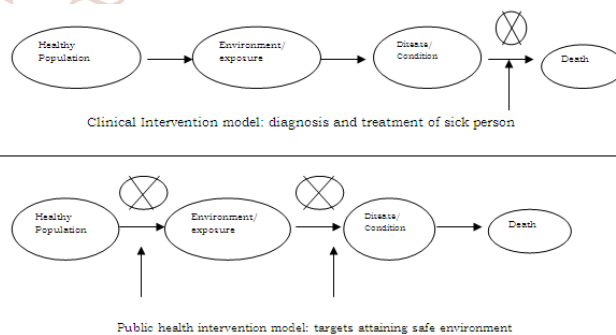


Figure 2 Health intervention models for the prevention and control of communicable diseases. The clinical intervention model focuses on the treatment of patients, while the public health intervention model concentrates on the maintenance of health through education and keeping the environment safe. The red arrows indicate the points of intervention. If we look at these two models in a wider context, then there are additional factors that must be considered. These include having helpful local policies, appropriate community level organisations, sanitation legislation, developing sanitation technology options and poverty alleviation efforts. Political will in policy development in health and environmental

health, designing the hygiene and sanitation legal frameworks and long-term socio-economic developments, are aspects of the government's responsibilities. As a Health Extension Practitioner, you have an important role in the prevention of environmental hazards that affect the health of the public.

Environmental Risk Factors

The environmental conditions and practices that facilitate the carrying of such infectious agents into our bodies are termed environmental risk factors. A good example is drinking water, which can be contaminated by human faecal matter that contains these infectious agents and it results in diarrhoeal diseases. There are other ways that infectious agents can get into our bodies; for example, the air we breathe can be contaminated by droplets that come out of a patient's lungs when they breathe or cough. TB and pneumonia are droplet-related infections that are transmitted in this way. There are also diseases and conditions that are not caused by pathogenic organisms, but are caused by other environmental risk factors, which may be due to chemicals or physical hazards such as noise. Major environmental risks and examples of the diseases and conditions that are related to these risks. Major environmental risk factors with related diseases and conditions Human interaction with the environment

Environmental risk factors	Related diseases and conditions
Contaminated water, lack of latrines, poor hand washing, inappropriate solid waste management, open defecation, vector infestation	Diarrhoeal diseases, trachoma, schistosomiasis, ascariasis, trichuriasis, hookworm, typhoid fever, relapsing fever
Indoor air pollution	Chronic obstructive pulmonary disease, lower respiratory infections, lung cancer
Outdoor/ambient air pollution	Respiratory infections, cardiovascular diseases, lung cancer
General environmental hazards (climate, mosquitoes, nutrition)	Diarrhoeal diseases, malnutrition, malaria and other vector-borne diseases; heat exhaustion
Environmental hazards in workplaces (excess noise, heat, dust, chemicals)	Injuries, hearing loss, cancer, asthma, back pain, chronic obstructive pulmonary disease

Urbanisation and Industrialisation

Urbanisation and industrialisation bring rural people into urban centres that may not be ready to handle the additional sanitary needs. India is at the stage of rapid development with priorities in agriculture and industry. Currently small-scale industries that bridge agriculture and industrialisation are booming. Large-scale industries, such as textiles, food and cement, are growing. The need to improve and expand social infrastructures such as water supply, waste management and health services is obvious in order to handle the needs of the growing urban centres.

Development as a Means of Interaction

Any development requires an interaction with the environment. The obvious advantages are in terms of

providing cloth, creating job opportunities and contributing to the growth of the national economy. The disadvantage is when the factory produces environmental risks. The factory uses energy, raw materials and human labour for its process of producing cloth. It generates pollutants in the form of solid waste, liquid waste, air polluting substances and noise. Such wastes can pollute the air we breathe, our food, water and soil. The poor management of these wastes results in human exposure that may subsequently affect human health as well as the environment.

It could be observed from the diagram 3 that the two arrows lying between 'human activities' and 'ambient environment' indicate the relationship between them, i.e. that development requires resources from the environment forward arrow and, as a result, waste could be generated as a by-product backward arrow. In fact, there are three possible types of interaction: humans can affect the environment, the environment can affect humans, and humans and the environment can co-exist where they sustain each other.

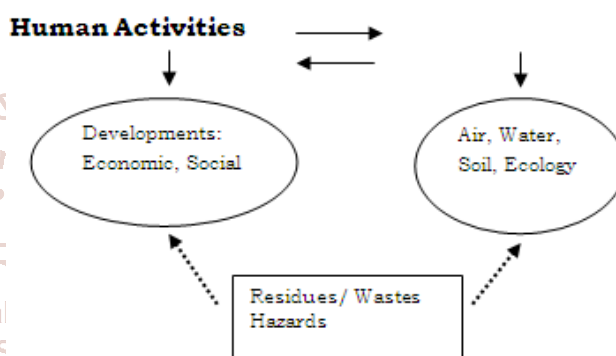


Fig-3- Human-environment interaction model

The Role of Environmental Health in Public Health

Environmental health is a part of public health where the primary goal is preventing disease and promoting people's health. Environmental health is associated with recognising, assessing, understanding and controlling the impacts of people on their environment and the impacts of the environment on the public. The role of the environmental health worker, therefore, includes the following functions of public health:

Improving human health and protecting it from environmental hazards, Developing liaison between the community and the local authority, and between the local and higher levels of administration, Acting independently to provide advice on environmental health matters; designing and developing plans of action for environmental health, Initiating and implementing health/hygiene, sanitation and environmental programmes to promote understanding of environmental health principles, Enforcing environmental legislation, Monitoring and evaluating environmental health activities, programmes and projects.

Environmental Health Planning

Environmental health planning refers to a systematic process by which goals are established, facts are gathered and analysed, alternative proposals and programmes are considered and compared, resources are measured, priorities are established, and strategies and activities are designed to meet the established goals or objectives within a specified period of time.

Identifying the Needs and Gaps

This is essentially an inventory related to environmental health in the local context. One can use various tools in order to identify these problems. Environmental health survey: This is a systematic survey using a questionnaire. The questionnaire contains basic indicators of environmental health such as latrine availability, source of drinking water, waste disposal systems, cleanliness of the community, etc. There is a need to do some statistical analysis to refine basic indicators of environmental health for the local context. One must be careful when designing a survey as it requires time, expertise and resources. We can plan it in coordination with the woreda environmental health worker.

Rapid/quick assessment: This is the usual method that helps you gain a quick overview of the range of problems. The usual data collection tools that you can use for this are focused or group discussion, physical observation with checklists and interviewing people.

Priority setting

It is difficult to handle all identified problems due to resource limitations. There is a need to know in advance the available resources. Resources can be mobilised from government, community, private organisations and NGOs. Do not rely too much on governmental resources as there are always limitations. Mobilising community resources is the best option that could be sustained. Priorities are then made on the basis of the depth and severity of the problem, the feasibility and the degree of community concern and willingness to be involved in the resource mobilisation.

Conclusion

It could be seen clearly from the above discussion that promotion of environment health and sanitation is very essential to promote the health and wellbeing of the human population. Many intervention strategies are required to promote environmental health and hygiene. In this content, there is a need of environmental health planning to identify the gaps in environmental health and sanitation knowledge.

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