A Study on the Different Aspects of Environment Component and Its Effect on Human Health

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Abstract:

This paper provides a review of the literature on environmental aspects and focusing on impacts of air pollution, water pollution and soil pollution on human health. The environment influences human health in many ways such as through exposures to physical, chemical and biological risk factors. It also changes in the behaviour of human life cycle factors in many ways. According to the WHO, 16 million deaths occur annually due to exposure of several types of toxic pollutant emits in the air, water or soil and degrades its quality.

Key words: Lung cancer, Asthma, Chronic bronchitis, Emphysema

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Introduction:

Man is causing all round damage to atmosphere, water, land, to the various elements of environment and to the ecosystem itself. Humans interact with the environment components such as air, water, soil constantly in various ways. These interactions affect quality of life, health life cycle human metabolism and many other disparities. Every minute, five children in developing countries die from malaria or diarrhoea. Every hour, 100 children die as a result of exposure to indoor smoke from solid fuels. Every day, nearly 1,800 people in developing cities die as a result of exposure to urban air pollution. Every month, nearly 19,000 people in developing countries die from unintentional poisoning [1,2]. Environmental health consists of preventing or controlling disease, injury, and disability related to the

interactions between people and their environment. The physical hazards include those relating to health effects of electromagnetic radiation and ionising radiation. The influence they can exert on our health is very complex and may be modulated by our genetic make up, psychological factors and by our perceptions of the risks that they present. Maintaining a healthy environment is central to increasing quality of life and years of healthy life.

Air:

Our atmosphere on global as well as regional scale is heavily polluted due to heavy emissions of air pollutants in the atmosphere. The build-up of green house gases will lead to significant changes in the weather patterns in the near future leading to global warming [3]. Air pollution can harm us when it accumulates in the air in high concentrations at lower levels of atmosphere. Millions of local people live in areas where urban smog, particle pollution, and toxic pollutants pose serious health concerns.

People exposed to high levels of toxic or harmful air pollutants may develop following experience such as Irritation of the Eyes, Nose, and Throat, Wheezing, Coughing, Chest tightness and Breathing difficulties such as asthma. In addition, long-term exposure to air pollution can cause cancer, damage to the immune system, neurological disorders, reproductive failure, and difficulties in respiratory systems. In extreme cases, it can even cause death [4].

Tobacco smoke as an environmental hazard then represents the biggest airborne chemical risk to health, whether measured in terms of death rates such as Lung cancer, Asthma, Chronic bronchitis, Emphysema (lung condition that causes shortness of breath), Aortic disease, Coronary heart disease, Arrhythmia etc.

Incineration of various air pollutants can also generate hazardous substances such as cancer producing elements and nitrogen dioxide generated by gas fires or gas cookers can contribute to an increased respiratory morbidity of those living in the houses [5].

Certain modern building materials may liberate toxic gases or vapours such as formaldehyde at low concentration but which might provoke mild respiratory and other symptoms in some occupants [2]. Many allergens such as grass pollen grains, or faecal material from house dust mites may cause attacks of asthma or hay fever [6].

Water:

Paper and pulp mills consume large volumes of water and discharge liquid and solid waste products into the water bodies. The liquid waste is usually high in biological oxygen demand, suspended solids, and chlorinated organic compounds such as dioxins. The storage and transport of the resulting solid waste may also contaminate surface waters.

Sugar mills are associated with effluent characterized by biological oxygen demand and suspended solids, and the effluent is high in ammonium content. In addition, the sugarcane rinse liquid may contain pesticide residues.

Leather tanneries produce a significant amount of solid waste, including hide, hair, and sludge. The wastewater contains chromium, acids, sulfides, and chlorides.

Textile and dye industries emit a liquid effluent that contains toxic residues from the cleaning of equipment.

Waste from petrochemical manufacturing plants contains suspended solids, oils and grease, phenols, and benzene. Solid waste generated by petrochemical processes contains spent caustic and other hazardous chemicals implicated in cancer [1].

The use of nitrogen as fertilizers will be a problem in local areas where agriculture is increasingly rapidly. These fertilizers increase the concentration of nitrates in groundwater, leading to high nitrate levels in underground drinking water sources, which can cause methemoglobinemia, (blue baby syndrome) in very young children. [7] .

Contact with unsafe drinking or bathing water can impose serious risks (both acute and delayed) to human health. There are several diseases that spread through contaminated water in India, the most common being Typhoid, Cholera, Shigella, Dysentery, Malaria, Amoebiasis, Giardia and Hepatitis A [8]. The common symptom among all of them is diarrhoea. Microbe contamination of groundwater due to sewage outfalls and high concentration of nutrients in marine and coastal waters due to agricultural runoff are among the most serious threats. The organic material that is discharged with municipal waste into the watercourses uses substantial oxygen for biological degradation thereby upsetting the ecological balance of rivers and lakes.

Sewage also carries microbial pathogens that are the cause of the spread of water borne diseases. It produces harmful effect on neurological function and it leads to ataxia. These cause changes in DNA structure and leads to cancer in human beings

[9]. Water tanks containing lead may increase the burden of this metal in the water, while water softeners may increase its sodium content. Benzene and other petrochemicals can cause cancer even at low exposure levels [10].

Recreational water which is heavily contaminated with pathogens, notably coliform bacteria has been shown to be associated with an increased risk of gastrointestinal and other infectious illness.

Animals:

Not only humans but animals too are affected by air pollution levels which can adversely affect their lungs, trigger asthma and cause chronic obstructive pulmonary disease. Air pollution also increases risk of acute cardiovascular and development of coronary artery disease in animals [11]. Several cases of fauna being affected by the toxic pollution have been reported across different types of veterinary hospitals. The pollution that animals inhale accumulates in their cell or tissues, causing damage to their important organs that weakens their immune systems and makes them more vulnerable to many diseases birth defects, reproductive failure, skin disease in animals [12]. The various type of air pollutants accumulate in sediments and may biomagnify in tissues of animals at the top of the food chain to concentrations many times higher than in the water or air.

Soil:

Soil pollution occurs when soil contains chemicals that are toxic for humans beings and other living things. The chemicals may be foreign to the local area, or they may be naturally occurring materials that pollute the soil by being present in dangerously high amounts [13]. Soil pollution can have a number of harmful effects on human health such as tetanus, anthrax, botulism, gastrointestinal, wound, skin, and respiratory tract diseases. The harmful effects of soil pollution may come from direct contact with polluted soil or from contact with other resources, such as water, that have come in direct contact with the polluted soil [14].

Conclusion:

The main conclusion from the literature review is that a large number of air pollutant, water pollutant and toxic chemicals that may be released into the air or water or soil can cause adverse health effects. Poor air, water or soil quality has its greatest impact on local people whose health status is already at risk.

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