

## Environment and Human Health: Beyond Disciplinary Confinement

<sup>1</sup>Nisha Kumari

<sup>2</sup>Anubhuti Dubey

*The human health results from the interplay of lifestyle, genetic, psychological, and other factors. In addition, humans are exposed to numerous environmental factors that affect their physical and mental health. In the present piece of work, the impact of environmental exposure on mental and physical health is understood in the broadest sense. The environment has direct and indirect effects on mental and physical health. High-rise housing and other constructions are detrimental to the psychological well-being of people. Residential overcrowding, these high-density areas, and noisy exterior noise sources increase psychological distress and may contribute to the development of mental and physical disorders. Air pollutants with a pungent odor amplify negative effects, and environmental pollutants have also been linked to behavioral disturbances. Lack of adequate daylight is reliably associated with melancholic dispositions and increased depressive symptoms. Consequently, environmental factors continue to negatively impact both mental and physical health. The environment has the potential to encourage or inhibit human interaction. Along with this, individuals' personal control, social support, relationships, and restoration from tension and fatigue may all be affected by various aspects and properties of the built environment. Even during the COVID-19 pandemic, when work from home had become commonplace, environmental factors had a significant impact on the health outcomes of individuals. Hence, this article is trying to shed light on the environmental factors that affect the physical and mental health of its users in more than one way and what can be done to make it less stressful, safer, and better by improving the tangible environment.*

**Keywords:** built environment, health outcomes, residential crowding, personal control, social support

### Introduction

Human health is closely related to the health of the environment. Human health emerges from a complex interaction of lifestyle, inherent, psychological, and other factors. It also involves several environmental exposures. In the present piece of work, the impact of environmental exposure on mental and physical health is understood in the broadest sense, encompassing

natural environments such as parks, bodies of water, weather, social environmental exposures like capital and cohesion, and built environmental exposures, e.g., urbanicity, intersection density, and land use mix. All species rely on their environs for the energy and resources necessary for survival: clean air, drinkable water, nutritious food, and safe habitats. For most of human history, advancements in the availability of these essentials resulted in increased longevity. Agriculture, sanitation, water treatment, and hygiene advancements have had a considerably higher impact on human health than medical technological advancements. People are living in such places without knowing or realizing their effects. The environment is one of the key determinants of human health, and the COVID-19 pandemic has highlighted its relevance.

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<sup>1</sup>Assistant Professor, Department of Psychology, St. Joseph's College for Women, Gorakhpur, Uttar Pradesh, India -273001. **Email id-** [singhnisha916@gmail.com](mailto:singhnisha916@gmail.com) (Corresponding Author)

<sup>2</sup>Professor & Head, Department of Psychology, Deen Dayal Upadhyay Gorakhpur University, Gorakhpur, Uttar Pradesh, India -273009.

For instance, the main issues include dimensional standards, indoor air quality, safety, accessibility, neighborhoods, and area characteristics. In the most economically developed countries, people spend up to 90% of their lifetime indoors (Goromosov, 1968; De Martino, 2001; Brasche & Bischof, 2005), while in developing countries, considerable levels of indoor pollution make housing unsafe, with a remarkable impact on the health of inhabitants (Capasso et al., 2017; Bruce et al., 2000; Hood, 2005). The environment has direct and indirect effects on humans that might trigger both physical and mental health.

While the environment is necessary for human survival, it can also be a source of disease. Inadequate access to basic requirements might be a key cause of human health detrimental. Some of the illnesses caused by the environmental toxins includes cancer, cardiovascular disease, diabetes, asthma, chronic obstructive pulmonary disease (COPD), obesity, accidents on the job, arthritis, parkinson's disease, malaria, dysentery, depression to name a few. Environmental risks might be physical in nature, such as pollution, poisonous chemicals, and food contamination, or social in nature, such as hazardous jobs, substandard housing, urban sprawl, and poverty. Infectious disorders such as schistosomiasis, diarrhoea, cholera, meningitis, and gastritis are caused by contaminated drinking water and inadequate sanitation and hygiene. Approximately, over two billion people lacked access to even the most basic sanitation.

The rapid and devastating change in the environment threatens a series of health effects that go far beyond infectious diseases to include nutrition, noncommunicable diseases, mental health, and displacement. Even activities that promote health and prolong human life can have a negative impact on the environment. For instance, food production contributes to environmental degradation through the use of pesticides and fertilizers, soil salinization, livestock waste, carbon emissions from food processing and transportation, deforestation, and overfishing. Additionally, health care institutions have a negative impact on the environment. Hospitals consume a lot of electricity and fossil fuels, and they generate a lot of medical waste. To prevent certain diseases, it may be necessary to cause environmental damage. For instance, malaria was eradicated in the 1940s and 1950s in the United States and other industrialized nations as a result of draining marshes and spraying DDT to kill

mosquitoes. Reduced mortality from poverty or sickness can result in overpopulation, which places a variety of strains on the environment—increasing reliance on fossil fuels, clearing land, generating pollution and trash, and so on. In addition, one of the aspects of the environment that may affect human health is the building environment. Conceptually, the man-made environment or built environment includes all of the constructed environments in which people live and work (Dreary, 2004). It also includes building designs and interior architecture that can have a long-term effect on humans emotions, excitement, and performance (Butterworth, 2000). The understanding of psychology behind human-environment relationships could be useful to uncover the connection as well as the disconnection between individuals and the environment, and it indicates how different locations and their specifications affect human behavior, help in behavior change, and cause compatibility with the environment.

Although some environmental factors, e.g., air pollution and green space, have already received broad attention, others have received very little, resulting in a tentative and partly inconclusive understanding of the relationship between the environment and physical and mental health. Focusing on human health and the environment is a need as well as an important part of the changing paradigm. So, the environment was, is, and will remain a central theme for individuals' health worldwide. With each passing day, we must strengthen our knowledge to ensure the best and healthiest living conditions for the entire population. Because there is still a strong need to study and work on the relationships between the environment and human health, not just to evaluate the current situation in different contexts, but also to be able to validate new solutions aimed at improving the health standards of the environment and making them suitable and affordable for a larger portion of the human population. By doing a little exercise, this paper has tried to present some of the key factors connecting the environment and human health.

### **Exposure to urbanization**

These days, urbanization and people's departure from nature and its stuff have caused enormous damage to human beings. Influx to the cities and the construction of high-rise buildings and complexes caused the loss of natural spaces that were considered to be more stressful factors for human health (Brown & Morgue, 2007). According to Gifford (2007), people lack control over their environment due to new

development and construction works that lead to the existence of various problems in designing the engineering systems of buildings. These upgrades endanger individuals mental health and also cause congestion and social isolation, which ultimately have led to some problems regarding psychosomatic disorders and healthy interactions. Many people think that living in urban areas makes them more stressed or depressed, but this is not always true. Research shows that the average population who live in urban areas is healthier than the average population who live in rural areas because big cities have more educational, economic, and healthcare opportunities (Dye, 2008). However, in the case of some others, the opposite is true when it comes to mental health. Psychiatric problems are 34% more common in cities when individuals' fast lives, increasing demands, and psychosocial factors are taken into account (Peen, Schoevers, Beekman, & Dekker, 2010). Van et al. (2010) found that in cases of psychiatric problems, there is an incidence rate ratio of 1.92 in male city residents, while an incidence rate ratio of 1.34 has been shown in female city residents when compared to their rural counterparts. They further suggest that even in high-income countries, there is strong evidence that people who live in cities for their first 15 years of life have a 2.75-fold higher risk of developing psychosis than people who live in rural areas.

#### **Inadequate housing and human health**

Housing is another key factor contributing to human health. The pandemic, where working from home has been becoming a part of individuals lives, has had a large impact on people's health outcomes, even at all ages. The COVID-19 pandemic strongly highlighted housing issues in terms of health. Because of the complexity and wideness of its related aspects, "housing and health" as a subject has been approached especially for the lower socioeconomic parts of different societies (Nazaroff et al., 2021).

The available scientific evidence showed a strong relationship between social and economic conditions, although it is often very difficult to assess their independent effects (Ranson, 2005). Several studies have demonstrated the large potential for better human health through improvement of the living environment (Thomson et al., 2001; Taylor, 2018; Thomson et al., 2013). These results offer useful indications for the development of good practices to upgrade the

characteristics of the built environment and make them available for all (World Health Organization, 2019; Bonnefoy, 2007). At the same time, a clear and updated regulatory system is a critical factor in ensuring public health protection (Capasso et al., 2017; Braubach, 2011; Braubach et al., 2014; Morawska et al., 2021; Signorelli et al., 2016). High-rise housing and other constructions pose some major issues for human health and are detrimental to the psychological well-being of people. The broken window theory given by Wilson et al. (1982) says that the environment has a powerful impact on human health and well-being (Cohen et al., 2002). In order to achieve desired results in terms of health, innovative strategies that can match together different aspects (technical building, urban, social, legal, and political) should be elaborated and implemented, as well as the factors that cause health detriments, which must be discussed, experimented with, and evaluated to achieve things on the local, national, and international levels.

#### **Factors that increase the risk of disease**

Pollution of any kind has the potential to increase the risk of disease. Some of them are listed as microbes found in the air, water, and soil; contaminants in food (e. g., droughts, heat waves); natural catastrophes (e. g., hurricanes, earthquakes, floods); pesticides and other noxious substances; parasites and pests; and radiation, all of which increase the vulnerability to catch diseases of both short-term and long-term nature. Moreover, it is not difficult to encounter examples of environmental exposure to contamination due to human negligence. Thus, it would not be wrong to say that environmental contamination is one of the biggest problems that is causing heavy and irreparable damage to our environment and, directly or indirectly, to human health. The advanced and extraordinary economic growth that we are experiencing brings with it a huge responsibility that cannot be left behind. These advancements are able to compromise the future of upcoming generations.

Besides this, climate change is one more factor posing several threats to human health and well-being, as it has been linked to an increase in things like floods, fires, and superstorms, all of which could have a big impact on human survival. It is emerging as a serious concern worldwide (Kovats & Haines, 2005; Cifuentes et al., 2001; Stern, 2007). According to the findings of Ebiet *al.* (2006), climate variability and

change are expected to increase morbidity and mortality risks from climate-sensitive health outcomes such as extreme heat events, floods, droughts, and fires.

Another example of how the environment might affect individuals' well-being is poor industrial manufacturing. It is obvious that many of the elements needed to improve industries and technology, like heavy metals or even some types of plastic, can also be harmful to the environment and, consequently, to humans, causing major medical problems. In short, industries that are careless in their functioning, manufacturing, constructive works, and waste disposal practices may pollute the natural world, which can have a harmful effect on physical and mental health. Therefore, it is important for everyone to be concerned with environmental health; otherwise, the adverse effects of environmental factors would be toxic for both the current generation and the upcoming one. In fact, a lesser-known reality is that changes in the environment could change disease patterns and make communities more vulnerable to new diseases.

#### **Impact of environmental as a public health issue**

As it is well known, environmental effects are not just for a single person's well-being but also concern the well-being of individuals' families, close ones, neighborhoods, and many others. If people do not maintain hygiene and clean up their homes, schools, and workplaces, their families and neighbors might not be in as good a condition as they usually want them to be. Pollution and litter, for example, can keep people from going outside for exercise and fun, which makes society more likely to get sick. Infrastructure and other parts of the built environment could also have an impact on the health of the people living there. Some of the incidents that can take place are in areas with poorly maintained roads that have a higher chance of having a car accident that results in someone getting hurt, and people who live there can get sick more often if there is not enough sanitation infrastructure. Moreover, poor environmental quality may have the biggest and worst impact on people who already have a history of poor health conditions. Vulnerable people are more likely to be affected by an environmental risk factor than the general population. This could be related to how old or sick they are, how their genes work, or any other reason. Some people have a genetic mutation that makes them more likely to get cancer as a result of passive smoking. Most people, on the other hand, are more vulnerable to at least one environmental risk

factor than the rest of us are. Similarly, the effects of lead, mercury, and some pesticides can be more dangerous for children than for adults. Therefore, it is essential to think about children and vulnerable groups when making and enforcing environmental health rules. It is very obvious that when environmental regulations are meant to protect the normal people in the population, they may not be able to protect vulnerable subpopulations properly. Giving everyone extra protections would be too costly and impossible. Therefore, protections must be carefully and smartly rationed, and the people at risk from a given environmental risk factor must be very specific.

#### **Management of advantages and disadvantages of environs**

A major concern at the interface of human health and the environment is related to the management of benefits and dangers. Rapid environmental change with advantageous and disadvantageous implications for human health is all around us. For instance, pesticides are critical for raising crop yields, but they can also pose risks to human health and the environment. Alternatives to pesticide use entail health trade-offs. Stopping all pesticide use would have a significant impact on agricultural output, resulting in food shortages and rising food costs, hence increasing starvation in some regions of the world. Human health authorities can choose to regulate pesticide use in order to maximize food production while limiting environmental and human health damage. While energy production and consumption contribute to human survival, they can also pose risks to human health and the environment, including air and water pollution, oil spills, and habitat destruction. Additionally, no subject necessitates a greater degree of caution in weighing benefits and hazards than global warming. A sizable portion of global climate change is attributable to human-caused greenhouse gas emissions. Environmental change is predicted to wreak havoc on the environment and human health, yet extreme reductions in greenhouse gas emissions could have a negative impact on the global, national, and local economies, resulting in a general fall in human health and health care. For example, significantly increasing taxes on fossil fuels might promote improved fuel economy and reduce carbon dioxide emissions, but it would also raise the cost of transportation, resulting in widespread inflation and diminished consumer spending power. In a true sense, fairness and equilibrium come up when people

think about how to manage benefits and hazards. The government and developers should try to think twice or three times before making decisions about where to put a factory, a power plant, a trash disposal, or how to make sure that workers are safe at work. When it comes to health, it is also expected that people who will be harmed by environmental risks should be able to express their concerns. As a general observation, it has been seen that people living in industrial areas are more likely to be exposed to harmful environmental conditions. Wastes from such industries and factories include lead, mercury, and other toxic chemicals in the air and water that can harm people and their health.

### **Environmental health optimization**

Maintaining a healthy environment is very important for people to live longer and have a better quality of life. Environmental optimization can easily prevent environmental health problems, which may account for more than two thirds of deaths. Similarly, people can cut down on their chances of getting diseases and chemicals that hurt the body by improving the environment. Although, in the case of environmental effects, there is no exact estimation of the environmental contribution to the development of death and disease, It cannot be precisely determined, but according to the World Health Organization (WHO), thirteen million deaths annually are attributable to environmental factors (WHO, 2009). According to this estimation, WHO further reports that 24% of the global disease burden and 23% of all deaths are attributable to environmental causes. These estimations also suggest that due to differences in risky environmental exposure and access to health care, the environmental burden of diseases is 15 times higher in developing countries than in developed countries.

Still, all environmental initiatives are good, but they may have a huge impact on people who are already vulnerable. Governments spend billions of dollars trying to improve the health and disease prevention of their natives. These funds help with biomedical research, food and drug safety, environmental and occupational health rules, disaster preparedness, public health, a healthy educational climate, sanitation, and water treatment programs, as well as many other things. In the case of medical diagnosis and treatment, the majority of health care resources must be spent on such things. It would be better to spend some of these resources on environmental protection and public health because prevention is generally more affordable than

treatment. So, environmental health must be taken into account when allocating different resources as an outcome of development and manufacturing.

### **Emerging concerns**

In the present era, many factors are combined as an outcome of new advancements in science, technology, business, and pharmacy, increasing the surety that they will have mixed effects (e.g., both good and bad) on the environment and on people's health. When these factors are combined, they may cause some sort of mastery by humans over the built environment. Some of the issues that the world is facing are related to nanotechnology, plant and animal genetic engineering, antibiotic resistance, food safety issues, and the growing demand for biofuels. As well as chronic stress and abnormal brain development in sensitive people, these are also thought to be caused by a lot of negative factors in a fast-paced developmental era. There are also concerns about animal testing. Including these, many more new advancements will take place in the upcoming years.

Indeed, a few of the risk factors that were mentioned before can be linked to built-up stress. Public forums, such as community forums, academic conferences, and legislative debates, must be held in a way that is both fair and democratic. Environmental health professionals must keep working on how people interact with their environment and how these interactions can affect physical fitness, illness risk, and other aspects of human well-being. They may record all possible alternatives through which human interactions with the environment can affect these things. They must include people from a wide range of cultural, economic, and scientific backgrounds. It is also high time for researchers' groups to come together and work together. They must keep doing research on the relationship between human health and the environment. There is a need to develop more holistic and integrated approaches for enhancing environmental health science that incorporate important considerations of human biological and ecological health and achieve a better understanding of these interrelationships. The systematic views of the ecologist must be adopted as a new paradigm for environmental health.

### **Conclusion**

The subsequent health risk caused by environmental degradation is a major concern. Environment and health are intimately linked, and the degradation of the environment poses a significant threat to human health

worldwide. The harmful consequences of environmental degradation are already being felt and could grow significantly worse over the next 50 years (Millennium Ecosystem Assessment, 2005). The present paper addresses some major challenges imposed by environmental hazards. This paper provides substantial evidence of a strong association between exposure to environmental hazards and health risks by raising major issues articulated by a few previous papers. It also reveals significant values associated with longevity and health quality in both the developed and developing worlds, justifying the need for policy interventions. Enhancing air quality, access to improved sources of drinking and bathing water, sanitation, clean energy, and securing adequate ways to construct the built environment are found to be associated with significant benefits for human health and well-being. Significant benefits are also found to be associated with minimizing exposure to environmental risk factors. However, climate change mitigation can also contribute significantly to the achievement of public health benefits.

Innovative strategies of intervention are necessary when considering the different ways to connect human health with the environment. To achieve them effectively, goals need to be clearly stated. The

scientific examination of the impact of environmental factors is also of great importance in terms of improving individuals' quality of life and allowing them to achieve a health-promoting environment. The collectivistic view of health is compatible with medical science and epidemiology if approached from an ecological perspective. More comprehensive interdisciplinary research is required in order to understand how society can effectively intervene in terms of practical application. Doing this can allow humans to fully take advantage of the living environment so that it may have positive reflections on human health policies. There is a great need to take action in order to urge society to control environmental hazards and, at the same time, enhance the health benefits that the environment is able to provide us. Fiddicke et al. (2015) cited that Europe has recently generated human biomonitoring programs that will help to improve the environmental health of European dwellers by identifying critical exposures to chemicals and their sources and deriving risk reduction measures. The ecosystem health theory clearly suggests that a healthy ecosystem significantly contributes to the good health status of the human population (Tarocco et al., 2011). Therefore, it is necessary to think that all fields of science must be integrated in a multidisciplinary manner.

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