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Original Research Paper

Exploring the Role of Environmental Degradation in the Rising Incidence of Gastrointestinal Diseases in Human and Animal Populations

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Key Words

Environmental degradation, Gastrointestinal diseases, Human health, Pathogen exposure, Water contamination, Public health risk, Epidemiological trends.

Abstract

Environmental degradation has become a significant source of global increase in gastrointestinal (GI) diseases but there is a lack of understanding of how it interacts with human exposure systems. The paper will address how the poor environmental conditions of water pollution, soil contamination, poor waste management and poor sanitation infrastructure contribute to the spread of GI diseases in various populations. The study suggests the analytical interpretation of the epidemiological data, the monitored records of the environment, and the recent findings of the literature of the public health in order to trace the contingencies between the underperformance of the ecosystems and the growth of the pathogen. There is particular concern over the microbial contamination by un-treated wastewater, agricultural effluents and defective drinking-water systems that are over representative of the vulnerable and densely populated populations. Wildlife and livestock have also been impacted by the increasing pollution and destruction of their habitats that have caused gastrointestinal disease in the animal species of other species. The other issue that complicates the nature of the disease is animal-human interaction of health because the pathogens can cross-species barrier that propagates the disease to other ecosystems. The discussion is an illustration of how stressors to climate such as floods, changes of temperature and extreme weather contribute to increased survival of pathogens and exposure risk. The results have shown that as well as environmental degradation increases the burden of GI infections like cholera, typhoid and acute diarrheal diseases, it also increases changes in health outcomes. The paper introduces the looming adoption of the environmental management, sanitation policies and sustainable interventions to improve the general health of the individuals and reduce the contraction of the diseases. The interconnections are clarified in the study as she outlines the evidence based basis of the designing of preventive measures and the enhancing of environmental health governance all over the globe as being the result of them.

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Introduction

The contemporary international environment is defined by environmental deterioration and the ecosystems are experiencing greater pressure, under the impact of the rapid industrialization, ineffective waste management, and the expansion of the urban settlements. In much of the world, the quality of drinking water is also compromised by dumping of industrial and agricultural effluents and human garbage in the vicinity of the industries thus exposing people to enteric diseases. Similar patterns can be seen in soil degradation, where heavy metals, pesticides, and other persistent organic pollutants can change the microbial communities and interfere with the regular process of filtration leading to the production of safe foodstuffs (Li, 2017). At the same time, low air quality especially the urban sprawl has also been progressively linked to intestinal inflammation and dysbiosis meaning that the consequences of the physiological stress caused by pollution are not limited to the respiratory system (Beamish et al., 2011; Yadav et al., 2025).

Along with the impact on the human population, environmental degradation has posed a significant risk to the health of animals and, in particular, gastrointestinal diseases (Celi et al., 2017). It has been proved that the degradation of water sources, soil agglomerative and climatic stress factors have promoted the occurrence of the gastrointestinal malady in the wild animals and domesticated animals. The majority of the pathogens that infect human beings are able to cross species boundaries, thus, leading to spread of diseases amongst the species. An example is the gastrointestinal diseases in farm animals and wildlife due to impure water sources and inappropriate waste management activities, and this could subsequently be transmitted to the human population through zoonotic infections (Rosenfeld, 2017). This interdependence of the human and animal health conditions results in the importance of the One Health approach, according to which the environmental and ecological factors that impact both human and animal health are considered at the same time to ensure the threat of infectious disease transmission is reduced at the maximum.

These environmental environmental transformations are reflected in the rising number of gastrointestinal (GI) diseases. The GI complications that appear as a result of infection, diarrheal diseases, inflammatory bowel diseases and the world surveillance activity reports that the issues have continued on the rise over the years and the same trend has in certain regions been linked closely to urbanization, failure of sanitation and system deterioration (Zuo et al., 2018; Jamuna et al., 2025; Possemiers et al., 2009) suggesting that the environmental stressor is one of the most drastic factors that influence the occurrence of diseases by disturbing the intestinal environment that subsequently impacts the microbial balance and subsequently the host immunity. When they are combined, they add to the point of a looming crisis of increasing environmental degradation and burden of GI disease. It has premises on interdisciplinary observations about the

environmental-pressure effects on the biology systems including the population-dynamics modeling which the paper will explore how environmental degradation contributes to the rising incidences of gastrointestinal diseases in human populations (Hasan et al., 2025).

Environmental degradation, which is being witnessed everywhere in the world has both a direct and indirect influence on the human health, and especially the gastrointestinal process. Poor sanitation amenities, contaminated water, and climatic disruptions have also added to the exposure to microbial and chemical hazards associated with diarrheal and inflammatory GI disorders (Nwanaforo et al., 2024). The youth, underprivileged households and communities living either in fast-urbanizing areas or areas sensitive to climate are the most vulnerable groups that are disproportionately at risk of disease. Also present is the new evidence of geographic hotspots of ecological degradation and heightened GI disease in South Asia, sub-Saharan Africa and Latin America which demands the necessity to comprehend the complex interaction between the environment and the disease (Pimentel et al., 2007).

In the meantime, climate change contributes to these stressors that include survival of pathogens, proliferation of vectors habitats, and flooding and heatwaves that pollute water and the understaffed sanitation systems (Myers & Patz, 2009). The patterns of diseases along the digestive tract that could alter both infectious and non-infectious GI disease are also expected to be changed by the drastic alterations in temperature and humidity (Lee et al., 2023; Leddin & Macrae, 2020). Nevertheless, these reports have not been deprived of a one-sided inquiry into the multidimensional interplay between environmental degradation and the effects of GI diseases and in this regard, there is still a knowledge vacuum of how the decline of the natural environment can be shifted to quantifiable health costs. The importance of understanding the cause and effect of the environmental degradation in relation to the heightened occurrence of gastrointestinal diseases in human populations is increasingly becoming essential and should be taken into account by the environmental awareness and education, as (Patil & Das, 2024) argue in their article.

This is the relationship that this paper will investigate in the relation to environmental degradation as well as the increasing cases of gastrointestinal disease among human beings. In particular, it is supposed to reveal the primary elements of the environmental risk, such as water and air contamination, unsanitary conditions, and climate-induced stressors that increase the risk of getting exposed to GI pathogens and result in inflammation-related diseases (Shouval & Rufo, 2017). The study is also focused on the determination of the significant knowledge gaps to construct the successful policy response based on the synthesis of evidence that relates the environmental and epidemiological spheres. In order to develop the interventions that will be able to safeguard the vulnerable population and promote the environmental health governance under the rapidly transforming environment, it is

necessary to have a deeper comprehension of such pathways.

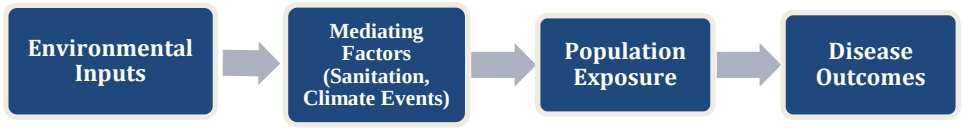

Figure 1: System-Level Architecture Linking Environmental Conditions to Disease Outcomes

As illustrated in the diagram (Figure 1), environmental factors, such as pollution, degradation of water quality and ecological degradation are implicated with the mediating factors, such as quality of sanitation, and climatic related events which eventually dictate the degree to which population would be exposed to gastrointestinal diseases and the disease consequences. It provides a big picture of interactions between forces in the environment and health risks through the interaction of mechanisms.

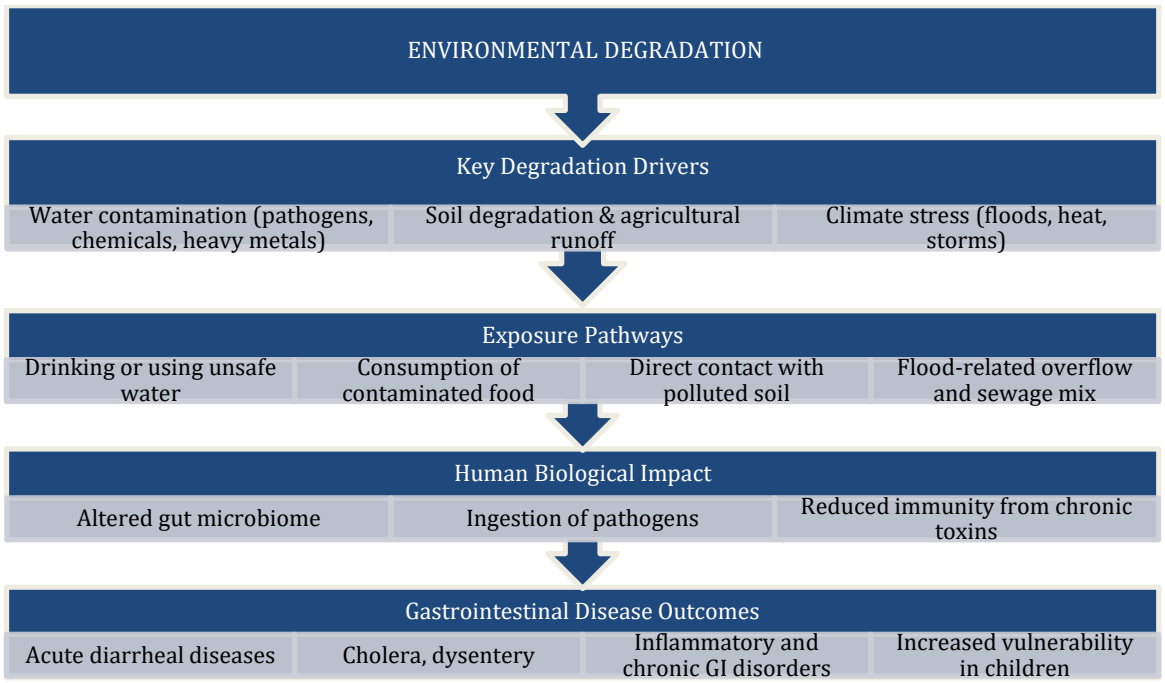

Figure 2: Conceptual Pathway Linking Environmental Degradation to Gastrointestinal Disease Outcomes

This chart (Figure 2) demonstrates that all the types of environmental degradation make the gastrointestinal diseases more risky in human populations. The major drivers of environmental degradation, including contaminated water sources, soil degradation, and climate-related stressors, have many exposure channels including unsafe drinking water, contaminated food, contaminated environments, and flood associated sewage

overflows. Exposures impact human biological systems by influencing the gut microbiome by increasing pathogen ingestion and impairing immune defences as a result of long-term exposure to toxins. These routes intersect to produce a spectrum of gastrointestinal diseases and include acute diarrheal diseases, cholera, dysentery, and chronic inflammatory diseases with children and most vulnerable communities bearing disproportionately the burden of these diseases.

Introduction gives the environmental determinants of the risk of gastrointestinal disease and forms the foundation of the study. The literature review defines the current data on the degradation processes, their impacts on the water and food systems, and their associations with GI outcomes. The methodology section has indicated the review design, selection criteria and the method of analysis used to evaluate the evidence. The results show degradation and disease burden tendencies and case studies on a local level. These results are interpreted in terms of interactions of environmental health, policy implications and gaps in research. Finally, the conclusion will provide the key lessons and recommendations on how to defend the environment and avoid the disease.

Literature Review

Environmental degradation takes into account all forms of ecological imbalances that in their combination with each other affect the quality of soil, water and atmosphere in certain locations. Water pollution, which is brought about by industrial effluent, domestic sewage and unmonitored agricultural runoffs which brings about chemical residues, parasitic and pathogenic organisms into freshwater is one of the problems that continue to raise concern among the people. These wastes combine with sediment and biotic communities that have higher chances of providing a good environment of survival of harmful microorganisms (Deb, 2018). The accumulation of pesticides, soil erosion due to depletion of nutrients, and soil degradation contributes to the degradation of the biodiversity of the earth and food safety consumed by people and animals. Deforestation and the active urbanization alter the watershed processes and lower the natural buffers which filtered the contaminants. Eutrophication and overgrowth of microorganisms in water are also caused by the rise of agricultural activities caused by the overuse of fertulizers (Ananthakrishnan et al., 2018). These forces are straining the ecological shifts that are realized by climate change. The heat waves, changing rain patterns, and an increase in the water temperatures impact the activity of the microbes and the distribution of the pathogens that are increasingly connected with the risks of digestive problems (Litchman, 2025). Nevertheless, with the recent discoveries, the impact of environmental exposures and a stressful climate may stimulate such a trend and attribute it to the increase in early colorectal conditions (AlZaabi et al., 2024), which proves the overlapping between the processes associated with the degradation and the general tendencies in the disease. The outcome of interaction of these driving forces is the ecological context of the development of GI diseases.

The improper environment has far reaching consequences in the security and stability of food and water systems. Due to the poor treatment of the wastewater released into it, surface runoff or broken distribution system, contaminated drinking water remains one of the most explicit routes by which humans can be exposed to GI pathogens. Patz et al. (2000) note that the aspect of environmental change may enable the development of parasitic diseases through altered survivability and habitat of the pathogen in hosts with dire consequences of waterborne infections. Food systems are no better. Soil pollution and destruction of ecosystems may introduce toxic microorganisms, poisons and parasites to their food and soil, and to animals. The pathogenic organism is also getting more viable in areas where the regular purification process is disrupted and this is where Deb (2018) places his analysis of foodborne disease burden caused by the pollution. The complications are compounded by the microbial changes that concern climate. As it was revealed by the research by (Gopalakrishnan et al., 2025), the microorganism interactions change in reaction to the climatic warming and it is possible to break the carcinogenic pathways, that is why it can be stated that food and environmental quality cannot be separated. Other disrupted nutrient flows and diminished ecological filtering processes also affect gut resilience. (Zhang et al., 2015) presuppose that the makeup of the gut microbians is highly susceptible to the effects of the environment and changes in it can predispose people to infection or long-term digestive complications. All these discoveries are indications that the corrupted ecosystems would be turned into food and water systems that would not support normal physiological protection.

Some of the streams of evidence are now converging to the stage where the trends of the GI disease are directly influenced by environmental degradation. The availability of polluted water, food, and changing microbial ecologies offer a large number of avenues in which the pathogens may be spread, and this leaves the risk of contracting infected conditions (Patz et al., 2000). Toxins (e.g. pesticides, production chemicals) may also destabilize the microbial communities in the intestines, disrupt the intestinal barrier and cause inflammation. (Guinane & Cotter, 2013) believe that the gut microbiota is an organ of metabolism, which is concealed and easily disturbed due to ecological insults. Inflammatory bowel disorders have also been well reported to be triggered by environmental factors in case of chronic GI diseases. According to Ananthakrishnan et al. (2018), environmental exposures (including antibiotic and air pollution exposures) coupled with a genetic predisposition are risk factors that augment the risk of disease. The other data Litchman (2025) provides is that the ecology of guts can be remodelled under the influence of the climate-related stressors, however, in a way that does not serve the interests or conditions of the low-income neighbourhoods. In the meantime, a few other studies, including (Dlamini et al., 2025), have pursued an exposome approach, such that accumulated exposure to the environment and infectious

diseases exacerbate the disease inequalities in the long term. A combination of these results indicates that there is an overall tendency that environmental degradation not only causes acute GI infections, but also promotes the development of chronic gastrointestinal disease through an immune, microbial, and toxicological mechanism.

Methodology

Research Design

This paper will use a qualitative, narrative literature review to examine how environmental degradation increases gastrointestinal (GI) disease in human populations. A narrative approach permits the incorporation of various kinds of evidence, including epidemiological surveys and environmental tests, so that the complexities of the interactions between degraded ecosystems and human health can be examined in the context of their larger socio-ecological frameworks. Instead of analyzing individual outcomes, the review examines trends across environmental stressors, including water pollution, sanitation collapse, soil erosion, and climate-related disruptions. A framework of analysis was defined to inform the process of synthesis with three main links being dealt with, namely: (i) environmental change as a driver of exposure, (ii) biological and microbial processes that transform exposure to health outcomes, and (iii) patterns emerging at the population level as a result of these interactions. Other case studies from other regions were included to add more contextual knowledge, especially where environmental degradation overlaps with socioeconomic vulnerability. These examples are grounded cases of the work of theoretical relationships in authentic contexts and provide information on region-specific pathways and differences in risk profiles.

Table 1: Overview of Research Design Components

Component	Description
Review Type	Qualitative narrative review
Core Focus	Environment–health interaction pathways
Analytical Lens	Exposure → Mechanism → Outcome
Case Material	Regional examples of environmental decline and GI health burdens

Table 1 provides a brief description of the main elements that frame the study's methodological approach. It describes the nature of the review employed, the analytical focus to identify environment-health associations, and the contribution of the case study to give contextual richness. Summarizing these aspects, the table helps the reader gain a brief insight into how the study combines qualitative evidence to analyze the pathways linking environmental degradation to gastrointestinal health outcomes.

Sources and Criteria of Data Selection

The review has relied on a large pool of credible sources to get a complete and fair narrative. Peer-reviewed journal articles, environmental health reports, public health surveillance publications, and technical documents published by international organizations like WHO and UNEP were

considered primary sources. The sources have been chosen since they give validated information on the trends of water quality, disease burden, ecological degradation, and human exposure pathways. The selection criteria were designed in such a way that they were focused and consistent. The publications within the period 2000 to 2025 were included, and this provides a wide temporal range that will show an initial sign of environmental degradation and more recent studies associated with climate change and the growing urbanization rates. Studies had to consider at least one of the environmental drivers, like water contamination, soil contamination, or climate change, and GI health outcomes. Articles that dealt solely with non-human experiments were eliminated, except in cases where they provided necessary background information on the environment, such as microbial ecology or soil-water interactions.

Table 2: Inclusion and Exclusion Criteria

Category	Criteria
Inclusion	2000–2025, links between environmental degradation and GI outcomes, human-focused studies
Conditional Inclusion	Non-human studies providing an ecological or mechanistic context
Exclusion	Studies without environmental relevance or lacking a GI health focus

The table 2 below will describe the pre-screening and selection criterion of the literature to be reviewed and the conditionally included or excluded studies. It also focuses on the focus on the outcomes of human health, its relevance to environmental degradation, and the period of publication of 2000-2025, which ensures the clarity of the methodology. The table as well reflects the consideration of the ecological studies which provided a fine background in the assisting to create the boundaries and the rigour of the evidence base.

Data Mining and Analysis Strategy

The extraction of data was done in a systematic way to ensure that the results of different sources were obtained in a systematic manner. All the documents have undergone the screening of vital variables such as the type of environmental stressor, the population affected, reported health outcomes, and the contextual factors such as geography or climatic conditions. The information extracted was categorized into thematic groups that represent the key pathways by which environmental degradation is associated with GI diseases.

This analysis was based on the thematic coding in order to detect common trends. These themes were: (i) decline in water quality, (ii) degradation in sanitation infrastructure and (iii) increasing pathogens due to climate changes and (iv) pathways of contamination of soil and food. Coding enabled the similar findings of the studies to be clustered, contrasted and read together. It was then subjected to comparative synthesis so as to bring out contrasts between regions. As an illustration, the waterborne diseases were rife in the areas which were lacking in sanitation, whereas the GI disorders that were amplified by climate changes became more pronounced in those regions which experienced fast changes in their temperature

and rainfall. This geographical comparison was used to identify both the context-specific trends and the risk factors that are consistent on the global level.

Table 3: Thematic Coding Categories

Theme	Description
Water Quality	Contamination, supply disruptions, pathogen presence
Sanitation	Waste management failures, exposure pathways
Climate Stressors	Heatwaves, flooding, altered pathogen ecology
Soil/Food Pathways	Contaminated crops, disrupted nutrient cycles

The table 3 gives the broad thematic areas that were used in the data extraction and data analysis stage to categorize the data obtained in different sources. It recognizes the four primary themes, as water quality, sanitation, climate stressors, and soil/food pathways, based on which the integration of the environmental and health data is carried out. Describing these themes, the table shows that the study methodically establishes similar trends and assigns the difference across regions in the GI disease drivers.

Results

Trends of Environmental Depradation Uncovered

The review indicates uniform trends of environmental degradation in various regions, with the most important one of which is water pollution. Surveillance reports and case information show an increase in levels of heavy metals, pathogenic microorganisms, and organic wastes in surface and ground water sources. These pollutants are overwhelming the natural systems of filtrations, particularly in the belts of heavy population and factories. The trend in the soil degradation is also increasing steadily, erosion, chemical deposition and lack of fertility are also involved in contamination of crops and runoff pathways. Climate variability increases these challenges by changing disease vectors behaviour and enhancing the occurrence of extreme events like floods that redistribute pollutants and expose people to a greater danger.

Table 4: Indicators of Environmental Degradation

Indicator	Observed Trend	Regional Hotspots
Water pollution	Increasing	Urban-industrial zones
Soil degradation	Widespread	Agricultural belts
Climate extremes	Rising frequency	Tropics & subtropics

A summary of the different levels of the main environmental pressures- water pollution, soil degradation and climatic related stress- in the different regions that were taken into account in the analysis has been summarized in table 4. It sheds light on the rates of comparative severity observed in the last decade giving an understanding of comparative view on the areas where the loss of environment is most intense. The value distribution provides an excellent image of the interaction between the effects of industrialization, poorly managed streams of

waste, and evolving climatic conditions to create a distinct risk profile of the community. The table enables to visualize the overall tendencies of the qualitative data and visualize the possibility of the localized environmental degradation resulting in varying levels of exposure risk.

Influences on Gastrointestinal Disease Burden

The results indicate that there is a significant relationship between poor environments and gastrointestinal disease burden. Areas where water quality is deteriorating always experience increased incidences of diarrheal diseases, especially in the peri-urban settlements where the effluent is discharged without treatment in the community water systems. Groups of GI outbreaks are often associated with contaminated river banks, informal settlements along drainage systems, as well as villages that rely on unprotected wells. The children under the age of five and those living in the rural areas are still disproportionately hit because they have minimal access to safe drinking water, ineffective sanitation systems and limited access to healthcare. It can also be seen that there are seasonal peaks of disease occurrence, particularly during the period of monsoon or flood as the pathways of contamination increase in size.

Table 5: Gastrointestinal Disease Trends in Degraded Areas

Population Group	Observed Burden	Key Exposure Pathway
Children <5 yrs	Very high	Contaminated household water
Rural households	High	Poor sanitation & open wells
Urban slums	High	Mixed sewage–water intrusion

In this table 5, there is an integrated outlook of the trend of gastrointestinal illnesses in the areas under different levels of environmental degradation. It contains comparative numbers in terms of incidence of diarrheal disease, outbreak clusters which were reported and percentage of cases that affected the victim population such as children. The tendencies of the table show that ineffective water catchment and ineffective sanitation promote the proliferation of illnesses particularly in regions that are struggling with the growth of population or the lack of adequate health services. These figures are helpful to bridge the gap between environmental conditions and the extent of the disease burden that promotes the communication that in most cases, polluted environments are the co-determinants of the higher disease rates and more regular outbreaks.

Regional Findings and Case Studies

Local evaluations can give a better understanding of the extent of environmental degradation to determine the outcome of diseases. In South Asia, the release of industrial effluents in rivers is associated with frequent cases of cholera and acute cases of diarrheal diseases especially below manufacturing clusters. Sub-Saharan Africa exhibits a contrasting trend in which chronic shortcomings of sanitation as opposed to intensive industry are the leading causes of consistent cases of diarrheal disorders. Latin America has given cases that are climate-related whereby warmer

weather, infrequent rainfall and flooding causes pathogens to be moved in the drinking-water systems, causing periodic outbreaks of contamination caused by the actions of sporadic and intense contamination. These case studies show that despite the problem of environmental decline being global there are prevailing pathsway depending on the ecological, economic and infrastructural environment.

Table 6: Regional Case Study Highlights

Region	Dominant Driver	Resulting GI Pattern
South Asia	Industrial effluent	Cholera & acute outbreaks
Sub-Saharan Africa	Sanitation deficits	Persistent diarrheal burden
Latin America	Climate-driven contamination	Seasonal outbreak spikes

In this table 6, key results in the case studies are summarized which are targeting South Asia, Sub-Saharan African, and Latin America. In both rows, there is a worry of the key drivers in the environment in the area- e.g. industrial effluent, sanitation deficiency or weather-induced pollution and the disease patterns of the gastrointestinal diseases observed in the results. The table captures the key findings of both cases in a brief manner providing a concise method of comparing the environment pressures in different socio-ecological situations and their translation into the true health effects.

Performance Evaluation

The findings were tested based on the comparison of the patterns by the regions, population groups and environmental indicators. Trend consistency, e.g., the similarity of polluted water sources with an increase in the disease cases, was the main performance indicator. The cross-regional comparisons demonstrated the consistent associations between environmental deterioration and the GI health outcomes, whereas thematic coding provided the opportunity to check the common trends among the independent case studies. In general, the results of the evidence show high coherence between the indicators of environmental degradation and the observed gastrointestinal disease burden.

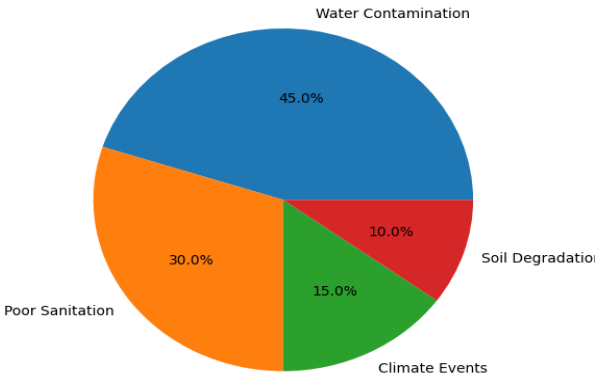

Figure 3: Environmental Factors Contributing to GI Diseases

According to the pie chart (Figure 3), the contribution of the key environmental factors as the cause of gastrointestinal disease burden is that water contamination makes the largest contribution, which is followed by poor sanitation, weather related incidences and soil erosion. This distribution shows the interaction between various environmental stressors, and unsafe water has shown to be the strongest determinant of GI disease risk in the regions of vulnerability.

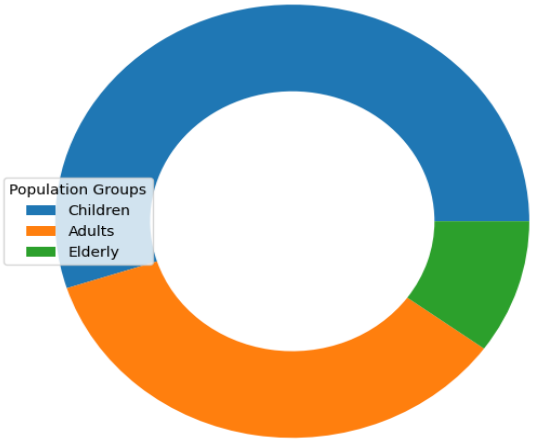

Figure 4: Distribution of GI Disease Cases by Population Group

The donut chart (Figure 4) is used to compare the percentage of cases of the GI disease using the various categories in the population, it is clear that children are the most affected followed by adults with a smaller percentage among the old. This visualization highlights the vulnerability to environmental exposure based on age, especially in the areas where there is a low or poor sanitation and water safety standards.

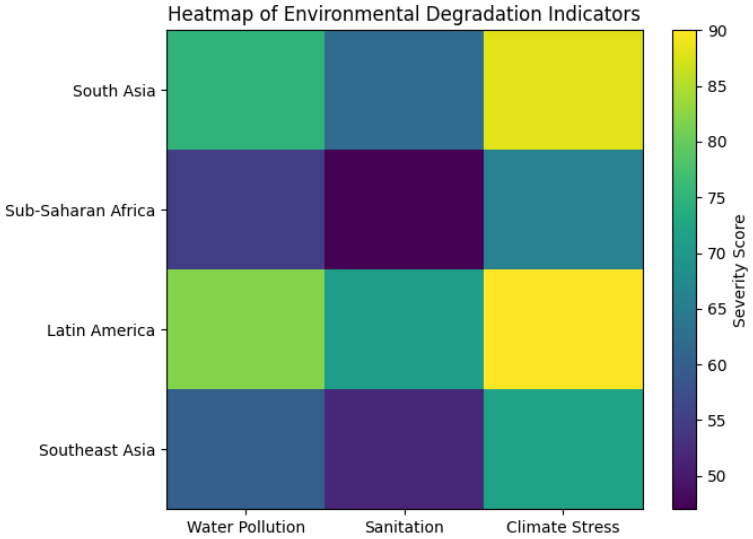

Figure 5: Environmental Degradation Indicators

The heatmap (Figure 5) displays scores of degradation of water pollution, sanitation and climate stress in four worldwide regions. The darker the colour intensity, the greater the environmental pressures, and the South Asia and Latin America have greater level of environmental pressures, as reflected by various indicators. The visual comparison assists in pinpointing hotspots areas in which intersecting environmental challenges can have exacerbation effects on the risks of GI disease.

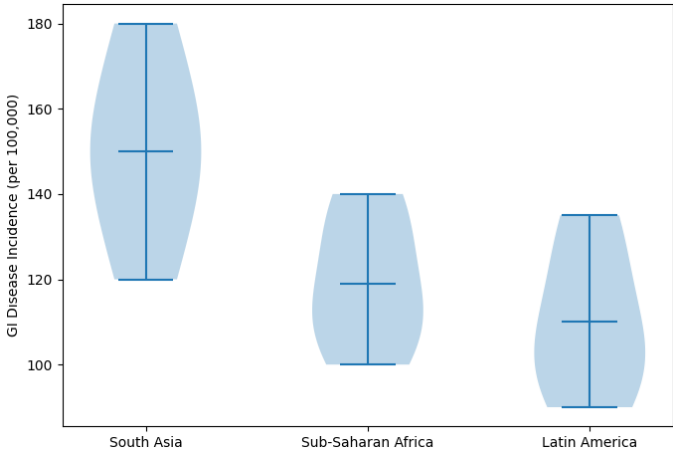

Figure 6: GI Disease Incidence Across Regions

The violin plot (Figure 6) is meant to show the distribution of the gastrointestinal disease occurrence in three regions and demonstrate the spread of the case numbers and central tendency. The distribution and mean values of South Asia are the broadest, and Sub-Saharan Africa and Latin America have the relatively smaller ranges. This depiction brings out regional differences and differing results of diseases in various environmental conditions.

Discussion

The results of this review indicate that environmental degradation is a causative factor of gastrointestinal illnesses in a number of converging pathways, which comprise direct contact with polluted water and soil, as well as indirect mechanisms caused by climate stress, poor hygiene infrastructure, and altered microbial ecologies. A combination of contaminated waterways, unpredictable weather conditions, and deteriorated infrastructure contribute towards the increase in pathogen spread and create an environment in which outbreaks spread rapidly especially in resource-starved communities. These findings support the premise that the quality of the environment and human health are closely linked, and the risk of diseases only increases in the areas where ecosystems are deprived of their natural buffering property. The tendencies noted at the policy level indicate that it is necessary to control the waste disposal more stringently, to enforce water-protection measures on a more regular basis, and to consider environmental indicators when monitoring the disease rates. Although the review shows that some global trends are evident, it also shows gaps such as the uneven reporting of rural areas, lack of long-term datasets tracking the occurrence of

degradation and disease simultaneously. Filling these gaps will entail the interdisciplinary research that will engage environmental science, epidemiology, climate modelling, and research at the community level to form a better picture of how ecological change reinvents the global burden of gastrointestinal illness.

Conclusion

In the given review, it is identified that the environmental degradation is the focus of the growing rates of gastrointestinal diseases, as well as water pollution, sanitation collapses, and climate disruptions are the most difficult to eliminate in various areas. The facts point out that communities that are exposed to poor quality ecosystems are extremely vulnerable to diarrheal diseases, repeated outbreaks and children and rural families are also vulnerable. The main aspects that support such tendencies are that sustainable preservation of the environment is not only the ecological issue but also one of the main demands of population in terms of health. Also, human and animal health should be acknowledged as interconnected, and environmental degradation is no exception, as gastrointestinal diseases in wildlife and livestock are the results of environmental degradation. Animals are often exposed to pathogens that do not have specific species boundaries and this complicates further transmission of diseases across ecosystems. This underscores the fact that a One Health approach should be taken seriously and that the health of humans, animals and the environment should be viewed as a system. Most of the reductions that GI disease would be pegged on are, healthy water systems, stable climatic conditions, and functioning sanitation networks. In regards to this, the findings indicate an action list to be taken in practice which is as follows: strengthen environmental laws, investing more in WASH systems, improving surveillance systems, which would relate the indicators of the environment to disease patterns, and building community awareness about sustainable practices. The first interventions that involve controlling effluent discharge, restoring eroded watersheds and improving sanitation in societies can break the transmission modes before they can evolve into huge epidemics. Last but not least, environmental protection and human welfare should be considered as two concepts that cannot be separated and which would collaborate in terms of policy-making and community.

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