International Journal of Advance and Innovative Research
Volume 12, Issue 2: April - June 2025
ISSN 2394 - 7780

ARTIFICIAL INTELLIGENCE (AI) AND ENVIRONMENT, HEALTH AND DISASTER MANAGEMENT

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SUMMARY
Artificial Intelligence (AI) is revolutionizing fields including environmental conservation, healthcare and disaster management. AI-Driven Solutions Realtime Data Analysis, Offers predictive modelling and automation that increase efficiency and effectiveness in addressing global challenges.

Animate and inanimate as well as material and non-material etc. found around human beings. External factors are environment. Although air, water and land are the main elements of the environment, as per the modern concept, social and economic conditions are also included in it.

The World Health Organization has termed environmental sanitation as the control of many factors in the physical environment that adversely affect human health and growth. This is what is called environmental health these days.

Abnormal or adverse events occur due to sudden changes in geographical conditions or abnormal behaviour of human beings and their impact on the then situation and surrounding people and the society has to suffer the consequences for a long time. Drunk conditions are called disasters.

Disaster Management Disaster management is the process of surveying the post-disaster situation to restore the situation and overcome the current situation.

This paper explores AI applications in these three critical areas, highlighting their benefits, challenges and future prospects.

Keywords: *Artificial Intelligence Environment, Health and Disaster Management*

INTRODUCTION
The integration of AI in various domains has led to significant advancements in data analysis, decision making and automation. This paper examines the role of AI in environmental protection, healthcare and disaster response, Emphasizes its ability to mitigate challenges and enhance human well-being.

RESEARCH OBJECTIVES
1. Studying the effects of disasters on health and environment with the help of artificial intelligence.
2. In a disaster, all the problems and consequences arising on health and environment are explored with the help of artificial intelligence.
3. Medical studies with the help of artificial intelligence on what are the appropriate components of disaster management, health and environment.
4. Why is artificial intelligence important for disaster management, health and environment? To evaluate this.
5. Prevention of all health and environmental issues arising in disasters with the help of artificial intelligence.

HYPOTHESIS
1. There are many problems that arise on the environment and health due to the side effects of sudden natural and man-made disasters. Artificial intelligence is the right choice for this.
2. The adverse impact of health and environmental problems on human life due to disasters can be avoided with the help of artificial intelligence.

RESEARCH METHODS
While conducting the research, is any information available so far regarding the problem that each researcher has taken up for research? Searches for it and uses those sources. He mainly reviews three methods of sources.

a) **Direct Sources:** Home visits, interviews, narratives/lectures, counselling, observation, during school and college visits, medical rooms, surveys, group discussions, parades, rallies, street plays, rod shows, puppet shows, plays etc.

b) **Indirect sources:** encyclopaedias, abstracts, indexes, research papers, journals, periodicals, books, government and non-government monthly reports, posters, banners, information books etc.

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c) **Electronic Source:** Internet. Air (Radio), Door darshan, Mega Phone etc.

LITERATURE REVIEW

- **Climate Change Prediction:** AI algorithms analyse weather patterns and predict extreme weather conditions, helping policymakers design mitigation strategies.
- **Pollution monitoring:** AI-driven sensors and satellite imagery detect air and water pollution, allowing for timely intervention.
- **Smart agriculture:** AI optimizes irrigation, pesticide use and crop yield forecasting, reducing environmental degradation.
- **Medical imaging and diagnostics:** AI-powered tools analyse medical scans to detect diseases like cancer at an early stage.
- **Drug discovery:** AI accelerates pharmaceutical research by efficiently identifying potential drug candidates.
- AI in disaster management enhances disaster preparedness, response and recovery through predictive analytics and automated response systems.
- **Early Warning System:** AI processes real-time data from satellites and sensors to predict earthquakes, cyclones and floods.
- **Disaster Response Coordination:** AI-powered robots and drones help in search and rescue operations in disaster-stricken areas.
- **Damage assessment**: AI analyses satellite images to assess the impact of a disaster and efficiently plan relief efforts.
- **Resource Allocation:** AI optimizes delivery of emergency supplies and medical aid to affected areas.

Future Prospects The future of AI in environmental protection, healthcare and disaster management looks promising. Advances in AI ethics, explainable AI and improved data security measures will increase its adoption and effectiveness. Expanding AI's potential to address global challenges requires collaboration between governments, technology industries, and researchers.

DATA ANALYSIS

1. Environment
Animate and inanimate as well as material and non-material etc. found around human beings. External factors are environment.

There are three interrelated components of environment. It was like –

(1) **Physical:** water, air, land, houses, waste radiation etc.

(2**) Biological -** Plants and animals like bacteria, viruses, insects, rodents etc.

(3) **Safe and hygienic water:** Safe and hygienic water is a basic human need. Unsafe water is a major cause of ill health in India and other developing countries. It is said that more than 50% of diseases in India will be reduced by providing potable water alone. Hence adequate supply of safe drinking water is a basic social health service. International organizations have declared the decade since 1980 as the "Decade of Water". A.D. Supply of safe water for all by 1990 is a World Health Organization declaration. A.D. It is an important factor in achieving the goal of Health for All by 2000.

Safe and healthy water means -
(1) Water which is free from pathogenic organisms,

(2) That which is palatable,

(3) Which is for domestic use.

How do you get water?
There are mainly three sources of water.

(1) Rain

(2) Ground water

ISSN 2394 - 7780

(a) Artificial lakes

(b) Rivers, streams

(3) Ground water

(a) Shallow wells

(b) Deep wells

Water borne diseases:

Drinking contaminated water, eating foods made with contaminated water or using such water for personal hygiene can cause many diseases. Water-related diseases include traditional diseases caused by contaminated water. The incidence of such diseases is very high in the developing countries and among them, wasting diseases are the biggest problem. Various water borne diseases can be classified as follows.

a) Biological -
b) Chemical

a) Biological -
(1) Due to presence of infectious organisms in water:

(i) Caused by viruses – 'A' Jaundice, 'E' Jaundice, Polio, Rotavirus infection in infants

(ii) Caused by bacteria – typhoid, paratyphoid, bacterial dysentery, etc. coli, cholera

b) Chemical -
A variety of chemicals used in factories and farms are beginning to find their way into public water supply and distribution systems. Such pollutants include detergent solutions, cyanides, heavy metals, minerals, organic acids, nitrogenous substances, bleaching agents, pigments, sulphides, ammonia as well as toxic and biocidal organic substances. Chemical substances directly or in water fish etc. can indirectly affect human health by slowly accumulating in the body.

(c) **Cardiovascular Diseases -** Heavy water has been shown to protect against cardiovascular diseases.

(d) Inadequate use of water for sanitation causes diseases such as shigellosis, ringworm, eye infections, scabies and roundworm infections.

(e) Insects breeding in or near water carrying germs transmit winter fever, elephantiasis, onchocerciasis, African trypanosomiasis and mango virus diseases.

Water pollution is inevitable due to the development of modern technology. The main problem at present is how to maintain the level of this pollution so that it does not affect human health and social development.

2. Air:
Air is an important element in human environment. Air is the reason for life on earth. Apart from providing the oxygen necessary for life, air performs many functions. Human body is cooled by exposure to air. The functions of hearing and smelling are also done with the help of air. Some animals can also move far with the wind. Therefore, from the point of view of health, the air we breathe must be very pure.

Elements of air -
Air is a simple mixture of many gases. There are gases like argon, neon, krypton, xenon and helium. These gases are called inert gases.

How the balance of elements in air is maintained -
Generally, the proportions of all elements in air are always maintained. The reasons for this are –

(1) Wind disperses impurities and reduces their concentration in the air. Due to the wind, impurities do not accumulate in one place.

(2) Sunlight Animals die due to sunlight and atmospheric temperature. Also other impurities are oxidized.

(3) Rain - Rain absorbs the gases from the atmosphere and the floating impurities fall to the ground. During production, plants absorb carbon dioxide and release oxygen gas during the day, while at night the process is reversed, when plants release carbon dioxide and absorb carbon dioxide.

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AIR POLLUTION

When harmful substances accumulate in large quantities in the air around a person's home, it is said that air pollution has occurred. Air pollution is an important issue facing the whole world in the present time.

MAJOR SOURCES OF AIR POLLUTION ARE

(a) **Motor Vehicles / Automatic Vehicles:** Motor vehicles are a major source of bio-pollution in all urban areas. These vehicles release hydrocarbons, carbon monoxide, lead, oxides of nitrogen and particulate matter into the air. In high sunlight, some of these hydrocarbons and oxides of nitrogen are converted into photochemical pollutants with a permanent sense of oxidizing in the atmosphere. In addition, diesel engines, when used improperly, release black smoke and harmful fumes into the atmosphere.

(b) **Industries -** Many types of pollutants are released into the atmosphere from industries. Fuels are burnt to produce heat and power which produces smoke, sulphur oxides, nitrogen oxides and ash etc. These industries release high-temperature pollutants into the air at high speeds through tall chimneys.

(c) **Domestic sources -** Burning of coal, wood or oil produces smoke, dust, sulphur dioxide and nitrogen oxides etc.

(d) The most direct and important source of bio pollution is tobacco smoke, which affects non-smokers themselves (indirect smoking).

(e) **Other miscellaneous sources -** These include waste incineration, kilns, pesticide spraying or other natural sources (such as windblown dust, fungi, bacteria) and nuclear power programs etc. All these lead to bio-pollution.

3. NOISE

The wrong sound in the wrong place at the wrong time is noise. The term “noise pollution” has been coined to highlight the health effects of noise on society.

Source of sound -

There are many sources of sound such as –

1) Domestic transistors, radios etc.

2) Automatic vehicles, railways etc.

Effects of noise:

These side effects are as follows –

1) Temporary and permanent deafness

2) Defect in speech

3) Inability to concentrate

4) Insomnia

5) Some changes occur in the body like increase in blood pressure.

4. DISPOSAL OF WASTE

Thrown waste is garbage. Waste materials generated from houses, roads, as well as commercial, industrial and agricultural activities are called solid waste. The waste generated in villages is called Litter.

SIDE EFFECTS ON THE PATIENT

Accumulated waste adversely affects human health. The reasons responsible for it are coin following.

1) Due to the presence of organic matter in the waste, it decomposes and produces fish.

2) Rodents, insects are attracted to garbage.

3) Pathogenic organisms present in waste can be re-introduced into human food via village dust.

For all these reasons, waste should be properly collected and disposed of in a healthy manner.

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METHODS OF WASTE DISPOSAL

1) Burning:
In this method waste is burnt. Hospital waste is likely to contain a large number of germs of infectious diseases, so it is best to incinerate this waste. ATs are used for this. If there are dust, soil, pieces of glass, leaves etc. in the air, there will be problems in combustion. Therefore, these substances should be further separated.

2) Controlled Tipping:
In this method, the waste is dumped in a trench 3 feet deep for a period of 3 to 6 months. During this time, the waste is decomposed and converted into fertilizer due to the action of organisms. After 3 to 6 months, the manure is taken out by digging a trench or pit. Later these trenches / ridges can be reused. In this method, a thin layer of soil is placed on top of the waste, so fish and rodents are not attracted to the waste. This method is most suitable for waste disposal if sufficient land is available.

(3) Composting:
In some towns and cities in India, waste and sewage are jointly disposed of through composting. In this method trenches of three feet depth are dug. In these pits, 6 inches and 2 inches thick layers of dirt and garbage are piled on top of each other. After the trench is filled in this way, the trench is finally filled with a layer of soil.

Bacterial action generates a lot of heat in this trench. Pathogens and other organisms die due to this heat. Gradually the temperature in the stone decreases. After 4 to 6 months, decomposition process is complete and high quality manure is produced. This method of disposal of waste and sludge is called "Hot Fermentation Process".

5. Different ways of spreading disease through faeces:
The following diseases occur if the waste is not disposed of properly. Typhoid, Paratyphoid, Diarrheal and Hagwon, Roundworm, Hookworm, Cholera, Polio, Jaundice.

About five crore people in India are infected with these diseases. Therefore proper disposal of sewage is an important function of environmental health services to improve public health.

How is disease spread through miles -
The faeces of a sick person or an infected person are the main source of infection. These faces contain pathogenic germs.

Ways to dispose of miles -
There are many methods of salvager planting, some of which can be used in areas where there is no system of carrying salvager, while others can be used in rural and urban areas , the classification or analysis of this method is given below.

- For camping and temporary use
(1) Sands with deep grooves

Importance of Research:
- AI can help disaster management by reducing logistical challenges.
- AI can help predict when and where natural disasters like floods may occur.
- AI can aid decision-making processes, enhance risk assessment and improve response strategies during crises.
- AI can help identify people in critical need through satellite images or social media posts.
- AI can help manage and interact with the public during disasters.
- Many diseases in India can be traced back to unhygienic environment. Unfit for drinking water, polluted land, scattered human excrement and garbage, dusty houses, insects and animals like rodents and gnats cause the environment to become unsanitary. Air pollution has become a serious problem in many cities. Increased mortality, under-one-year-old deaths, disease and poor health status are the consequences of poor environmental health. Therefore, it is very important to keep the environment clean for the health promotion of humans and society as well as for the prevention of diseases.

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LIMITATION OF THE RESEARCH

1. The information obtained from the research is limited to all urban and rural areas.
2. Due to different geographical conditions, different problems appear in each place. Due to the diversity of marine, urban and mountainous environments, the criteria and research may be different as disaster management plans with the help of artificial intelligence to maintain health and environment in each place.

IMPORTANT FINDINGS OF THE STUDY

Natural or man-made (man-made), disasters cause all sorts of serious problems with the environment and cause huge financial loss to living and non-living things and this huge irreparable loss causes a great loss to the country. But with the help of artificial intelligence, the causes and solution plans can be properly explored and the damage can be avoided. Therefore, artificial intelligence is a very important option.

RECOMMENDATIONS

1. Real-time detection of adverse health and environmental impacts of disasters in urban and rural areas with the help of artificial intelligence.
2. To explore the neglected causes of disasters affecting health and environment in urban and rural areas with the help of artificial intelligence.
3. To explore various schemes with artificial intelligence guided, operational systems to develop health and environment friendly aspects in urban and rural disasters.

CONCLUSION

Natural or artificial (man-made), natural or artificial (man-made), all sorts of serious problems arise with the environment, so artificial intelligence is a very important option.

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As per syllabus of Indian Nursing Council

Sixth Edition

BHANOT