

Critical Evaluation of Childhood Exposure to Various Environmental Pollutants

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Abstract

This study has been carried out to illustrate and assess childhood exposure to environmental pollutants and evaluate the associated impact on children's health. Children are more susceptible to pollutants and toxicants of the environment and protecting their health should be a priority. Climate change, increased pollution and other environmental issues have pushed children to become the most endangered group to be affected. Children are habitual to unhealthy practices and putting anything in their mouth and identification of the main issues or pollutants affecting children's health is highly required. Additionally, children breathe more air, drink more water, eat anything they find nearby, and constantly increase their biological growth. In this study, secondary qualitative data has been collected by exploring online journals, websites and newspaper articles. The collected data has been evaluated and interpreted by conducting a thematic analysis and the results suggest that children stand as the most vulnerable group severely impacted by environmental pollutants such as air pollution and water or soil pollution. Governments and the United Nations have taken several initiatives to reduce environmental impacts on children. Several programs have been to improve children's environmental health and implement the Sustainable Development Goals. It has been observed that ensuring environmental sustainability can reduce the crucial impact and improve children's health.

Keywords: Children, Health, Environment, Hygiene, Immunity, Pollutants.

Background

Children stand among the most endangered groups due to their unhealthy habits and lesser knowledge about harmful substances. In addition, children have several types of unhealthy habits such as putting anything in their mouth and they eat almost every object they find nearby. Their biological growth is constantly evolving and due to this, children drink more water and breathe more air. The immunity system of children is also undeveloped and vulnerable to any kind of harmful object. Air pollution and smoking have been identified to have a major impact on children's health and can develop obesity [1]. Excessive use of pesticides, harmful waste and air pollution poses major impacts on children's health as they are habituated to crawling on the floor and putting anything to their mouth.

These practices impact the emotional, psychological and mental health of children and even can cause death.

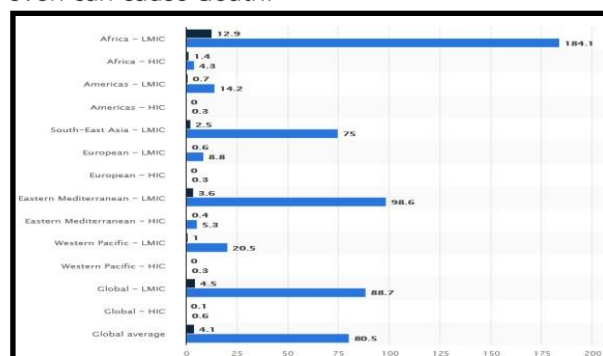


Figure (1): Child death rate due to air pollution worldwide in 2016
(Source: 2)

Increasing environmental issues and climate

changes affect children's health and mental development. On the other hand, household pollution has been identified to pose a major impact on children's health more than climate change and industrial pollution. In 2016, 100,000 children from South-East Asia regions died due to air pollution [2]. This indicates the vulnerable condition of childhood exposure to environmental contaminants and associated impacts. Air pollution has been identified to have a major impact on children's health, while other significant environmental threats are harmful chemicals and waste, e-waste, poor sanitation, infected water and climate change. These factors pose a crucial impact on children's health and even lead to severe physical challenges and death.

Significance of the study

The following study has been focused on addressing childhood exposure to environmental contaminants and provided significant evidence. All potential environmental issues and pollutants impacting children's health and well-being have been explored and their potential impacts have been addressed. In addition, this research has also provided effective recommendations for preventing the impact on children's health by reducing the environmental pollution. Thus, this study has signified the potential impact on children's environmental health along with the importance of protecting children's health. In addition, the harmful impacts of several types of environmental issues and hazards, and the urgent requirement for improving sustainability, especially decreasing household pollution have been evaluated in this study. Hence, it can be stated that this research has provided significant insights into childhood exposure to environmental contaminants.

Operational definitions

Environmental pollutants

Environmental pollutants or EP involve compounds that influence several types of changes within the environment and even change the climate. The major pollutants are pesticides, fungicides and herbicides used in agriculture and there are several more types of pollutants are available.

Exposure

Exposure is referred to as experiencing something and childhood exposure associated with environmental pollutants involves experiencing or impacting by the pollutants.

Aim of the study

The aim of this study is to evaluate and identify childhood exposure to environmental pollutants, assess potential impact and develop suitable recommendations to prevent the impact.

Objectives

- To assess childhood exposure to environmental pollutants

- To identify and evaluate the potential impact of environmental pollutants on children's health
- To recommend strategic solutions to reduce environmental pollution and prevent its impact on children

Evaluation of children's environmental health

Infants are among the endangered groups to be impacted due to any low or high environmental impacts due to their developing nature and lack of proper immunity. In addition, children drink more water, eat more food and breathe more than adults as per their size and they are also habituated to putting anything to their mouth. Children's and women's environmental health is more vulnerable than adults' as and high environmental impacts have been identified to develop issues such as cardiovascular disease, diabetes and "liver enzyme abnormalities" [3]. The infant period is regarded to be the time of rapid development and growth and during this time, children face several types of issues regarding the surrounding environment.

"Gene-environment interaction" is a major cause of health conflicts in children and protecting children's environmental health is a vital need. Moreover, children's behavioural and mental difficulties have been identified to consist of a correlation with exposure associated with their environment [4]. Environmental risks are major causes of infant death in recent years, and it has been observed that decreasing environmental issues by improving sustainability can improve children's environmental health. Children are majorly influenced by their surrounding environment and lack knowledge of good habits. Environmental threats pose a high impact on children's health and in 2012, approximately 1.7 million infants under the age of five died due to environmental issues [5]. Children's development and progress are majorly influenced by their surrounding environment, which is a major cause of increasing child death due to environmental issues. Additionally, inadequate water, poor sanitation, hygiene issues, the impact of chemicals and hazardous waste, especially household waste and air pollution are the main risk factors for children [21].

Environmental issues affecting children's health.

Infants consist of a rapidly developing nature and increase their biological development over a long time and are vulnerable to any low or high impact from the environment. There are numerous types of environmental issues that can affect children's health and progress, including air pollution, soil and water pollution, poor sanitation, radiation, harmful waste and climate change. It has been observed that parenting stress and "environmental risk factors" pose a high impact on children's emotional and mental progress [6]. Air pollution and radiation are major causes of children's physical distress and

improper development and can also lead to death. On the other hand, a significant number of children's death has been observed to be the reason for household air pollution.

Rapid environmental changes, including climate change and increasing pollution, also impact highly on the mental and physical progress of children's development. Another emerging threat to children's health is e-waste and chemical waste and children are habituated to touching and putting anything in their mouths. Due to these practices, they are mostly affected by hazards and environmental risk factors. On the other hand, infants mostly remain indoors and lack extra indulgence with the outer world [7]. Lacking proper immunisation is also a cause of children's vulnerability to environmental impacts and poor sanitation and hygiene also cause severe damage to children's health.

1. Methods

The research method is a highly essential key tool to lead any specific research process and extract the right information to sustain the research paper for a long-term issue. Selecting every single tool is vital to conducting further processes in the correct order.

Research Approach

The researcher has selected an "inductive research approach" to lead this paper as it allows flexibility and also supports the new formation of data. It serves the research process with the strength that the researcher can assume what might happen in the future [8]. Accompanied by observing and measuring the potential outcomes, this research approach is helpful in detecting themes while evaluating the raw data.

Research Philosophy

In this research paper, the researcher has found an "interpretivism research philosophy" as helpful as it allows proper understanding between researcher and subject during the research process. Due to collecting data, this philosophy helped in reconstructing and made acknowledging the data in better way.

Research Design

Research design is a vital part of research that ensures project time schedules with better documentation. The researcher has chosen an "exploratory research design" as it low cost and able to make the research process understandable at an early stage [9]. It has basically served the formula of previously un-researched subjects to reveal new facts based on issues.

Data Collection tool

In this study, the researcher has found a "secondary qualitative data collection tool" is useful to collect relevant data and information. It has been collected by exploring online journals, websites, and newspaper articles [10]. The articles have been

selected between 2018 and 2022 to get recent data. On the contrary, all the dissertation articles have been rejected as they could mislead the research process by providing wrong information. Since these resources remain already existed, it has saved both time and money for the researcher.

Data Analysis tool

After the process of the collection of data, the collected data has been evaluated and interpreted by conducting a "thematic analysis" process. It has been chosen because it does not require any specific technological and theoretical knowledge. It allows a more approachable texture of evaluation that could be understandable by readers [11]. As it is capable of describing the content and outcome in a better way, the researcher has experienced its benefits. Moreover, all the research tools have helped the researcher find out authentic information related to the research topic.

2. Results

Theme 1: Various environmental pollutants and their impact on children's mental and emotional progress

With the rapid changes in the global environment, numerous environmental contaminants have raised developing high threats to environmental sustainability and health. These pollutants include harmful chemicals, waste, inadequate water, radiation and climate change. Apart from this, these pollutants pose a major impact on children's progress and can develop conflicts in cognitive progress [12]. On the other hand, a common household waste is lead, which has been identified to hinder the development of intelligence and cognitive progress. These pollutants can also increase behavioural difficulties and can develop a mental disorder that eventually creates a barrier to learning and development. Environmental contaminants are also responsible for immature child death and increasing mental disorders among children.

Theme 2: Importance of protecting children's health.

Children are regarded to be the future of society and regarding this, protecting their health is highly required. In addition, protecting their mental and psychological health from environmental pollutants is crucial as affected health can lead them toward living with mental distress or disorder and improper physical progress while being adults. Environmental pollutants cause a significant rate of child death every year and are mainly due to household air pollution and regarding this, reducing the pollution level is vital. The immunisation system and mental progress of children remain in progressive condition due to which they touch and put everything in their mouth including household waste, pesticides and even chemicals. Considering these aspects, it can

be stated that children are among the most endangered groups to be impacted by environmental pollutants and protecting their health is highly required for the development and progress of society. It has been identified that children's emotional progress is more endangered by "traumatic events" than adults' [13]. Trauma and associated aspects can pose a crucial impact and protecting children's health is vital for the progress and growth of society.

Theme 3: Initiatives taken by governments and international organisations.

Considering the imperative requirement to protect children's health and future from environmental pollutants, governments and international humanitarian organisations have taken several initiatives. The "World Health Organisation" or WHO has been focused on improving "children's environmental health" and regarding this, the organisation has arranged programs and upgraded information-sharing practices with volunteers and policymakers. Additionally, the organisation has arranged a "rapid assessment" named "National Children's Environmental Health Profile" for collecting information on environmental risks and children's health [14]. In the UK, one of the major issues affecting children's health is air pollution. In this regard, the government has implemented the "Clean Air Strategy" to tackle this issue by reducing air pollution [15]. WHO collaborates with the governments of various nations and develops effective policies based on accurate and reliable information. Additionally, the "risk assessment programs" are thoroughly dependent on the input acquired through government ministries and humanitarian organisations.

3. Discussion

In the present study, a secondary qualitative data collection method has been used and the outcomes have been interpreted by conducting a thematic analysis. Several types of "environmental pollutants" have been identified that affect "children's health" and progress. Children consist of a developing biological system and immunisation system, which have made them vulnerable to resisting any minimal impact of their surrounding environment. Technological advancement, globalisation and changing global climate have formed several types of pollutants that have a direct impact on child's health, such as radiation, hazardous waste and chemicals, e-waste, air pollution and pesticides. Interaction between air pollution and immature genes can cause "childhood asthma" [16]. In addition, the pollutants have been observed to have a vital impact on the psychological and cognitive progress of children. Increasing mental disorders and behavioural conflicts among children are also due to increasing air pollution and household pollution. It has been observed that children are habituated to putting

every available object in their mouth, touching everything and drinking, eat breathe more than adults. Infants are of a constantly developing nature and involve several types of unhealthy habits and activities due to their immature mental and psychological progress. On the other hand, the severe impact of "environmental pollutants" on pregnant women can also disrupt "child development" [17]. Due to a lack of a properly developed immunisation system, infants are vulnerable to any harmful substances in their surrounding environment, including household waste, pollution and lead usage. Additionally, the infected or psychologically disabled child grows up with the same disabilities which can create barriers to social progress. Hence, reducing pollution and protecting children's health is severely required for society.

Governments of several nations and international humanitarian organisations have taken various interventions to reduce pollution in order to protect "children's environmental health". The United Nations developed a "Joint Framework Initiative on Children, Youth and Climate Change" in 2010 for ensuring a "low-carbon and climate resilient future" for every child [18]. Moreover, the United Nations has been focused on protecting the environment and reducing pollution by improving collaboration, while the WHO has arranged a "risk assessment" program for identifying and assessing the context of "children's environmental health" by accessing data from various governments. These international humanitarian organisations have established collaboration with governments of different nations, especially where pollution is high in order to develop suitable policies, arrange programs and protect "children's environmental health".

4. Conclusion

In the following study, the context of childhood exposure due to "environmental pollutants" has been explored and the potential impact on children's health has been assessed. A secondary data collection method has been used and the findings reveal that the emergence of technology, climate change and globalisation has increased pollution levels to a significant extent and children are vulnerable to any kind of injuries due to their immature immunisation system. Infants constantly increase their biological growth and household air pollution has been identified to pose the most crucial impact on children's health. "Gene-air pollution interaction" can cause severe cognitive and behavioural difficulties and ultimately impacts their emotional, psychological and physical development.

WHO, the United Nations and governments have arranged several types of programs and taken interventions to protect children's environmental health. The World Health Organisation has arranged a risk assessment program to collect data by exploring data provided by government ministries.

Protecting “children’s health” has become a social requirement as environmental exposure and trauma can have an impact on their adolescents also and ultimately limit social progress. Thus, this study has provided effective and accurate insights into the impacts of “environmental contaminants” on “children’s health and exposure. Reducing pollution and increasing environmental sustainability is highly required as air pollution has become the cause of a high rate of children’s death every year.

5. Recommendation

Infants are among the most vulnerable groups to be affected by pollutants and other environmental issues and regarding this, protecting their health is vital. Parents have to dispose of household waste in a safer place out of reach of children and keep harmful chemicals and pesticides away [19]. Storing toxic objects in tightly closed containers can be effective along with placing them in high places. Infants spend most of their time in the home and get highly impacted by household pollution. In this context, parents have to ensure stopping smoking within the home as well as keeping the home safe and sanitised. On the other hand, the government has to develop an efficient and flexible voluntary system for providing required health supplements in case of chemical poisoning. Eliminating the use of polluted and poor quality water and “contaminated fish” are other initiatives that parents can take in order to ensure the protection of children’s health. Keeping children within the home and protecting them from going into the sun or areas having toxic air can protect them from air pollution. In addition, parents have to ensure the availability of fresh air in the home in order to avoid suffocation for the child.

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