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Environmental and health implications of improper waste management in urban areas

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Abstract

The accelerated population growth around the world has given rise to something 'disturbing' in the urban dwellers. While astounding cities promise employment and opportunities, they do not seem to be able to keep up with the magnifying concern of waste management. This research looks at the implications of poor waste management on the demography as well as on the environment's state and public health. Investigating the relationship between waste management and the corporation's various QHSE (Quality, Health, Safety, Environment) policies provides an insight into reasonable and just answers to disposal scenarios. It has been determined that the careless act of waste needs proper management; otherwise, it does not remain a nuisance; it destroys the overall quality of air, water sources as well as the health of the most defenseless groups. This paper calls out for urgent measures and actions and aims to foster discussion and change around approaching the future of waste management and sustainability in a meaningful way that serves all of humanity and our planet.

Keywords: Urbanization; Waste Management; Environmental Health; Qhse Policies; Sustainability

1. Introduction

Urbanization is one of the largest changes of the modern age. With people continually moving from villages to cities in search of better opportunities, the structure of society is constantly changing. The figure is so impressive that it underlines the speed of evolution: the United Nations predicts that by 2050 nearly 68% of the world's population will live in urban centers. However, such growth raises a crucial question: how to manage waste increasing day by day in overpopulated urban areas? Ineffective management of waste has turned out to be one of the most protruding environmental and public health challenges affecting millions. A stroll in any metropolitan city reveals an undeniable fact: overfilled garbage containers, unlawful dumping grounds, and waste scattered on streets and in parks. This situation not only undermines the beauty of our urban formations but also creates serious threats to public health and to the environment. The most vulnerable—usually those who lack resources to acquire a better quality-life sometimes—are most often the ones who get badly affected due to poor waste management.

This paper attempts to discuss the long-winded deliberation between waste management practices and their consequences on the environment and public health. The purpose here is to demonstrate feasible approaches that different communities may adopt to reclaim their urban spaces and move toward a sustainable future under the framework of Quality, Health, Safety, and Environmental (QHSE) guidelines.

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2. Materials and Methods

This study is committed to a rigorous methodology: combining an extensive review of the literature with real-world case studies to determine the condition of waste management within urban contexts. The relevant data were assembled from community surveys, academic journal articles, and reports produced by governmental and non-governmental organizations. This blended source approach granted us a comprehensive insight into the intricacies of waste management.

We also put a lot of effort into thinking about the ethical implications and community perspectives as we conducted our research. Our engagement with local residents and stakeholders allowed us to capture their voices in the conversation and ensure that we do not marginalize the lived experiences of those most affected by these issues. We obtained informed consent for any primary data collected, and our methods adhered to institutional ethical guidelines.

3. Results and Discussion

3.1. Environmental Implications

The environmental effects of mismanaged waste are very deep and wide, hence forming a chain of not easily solved problems that affect the ecosystems of the earth.

3.1.1. Soil Contamination

One of the most dangerous effects of waste is that it gets into the soil. In this case, soil contamination represents all the urban neglect: a once-productive piece of land fills with industrial waste and hazardous materials, thus endangering local farming and providing viable agricultural produce. Studies indicate that leachate from landfills which contains all types of dangerous chemical substances seeps into the soil and contaminates subsoil aquifers thereby adversely affecting not only plants but also animals in that particular habitat (Niazi et al., 2016). For families who depend on these lands for their living, faith in their food source falls under a vicious cycle leading to poverty and malnutrition.

3.1.2. Water Pollution

Water flowing through urban regions transforms into toxic carrying streams. Community water bodies that were previously public gathering points become dangerous to public health because of poor waste disposal methods. Water contamination in these resources diminishes biodiversity among aquatic life and simultaneously endangers nearby human populations with health risks. The healthcare systems face heavy burden because polluted water sources can result in diseases that trigger epidemic outbreaks and lead to enduring health problems (WHO, 2018). Preventable waterborne diseases infect children which causes their potential development to suffer from environmental negligence.

3.1.3. Air Quality Deterioration

Open waste burning represents the major source of air pollution as an adverse consequence of insufficient waste management practices. The smoke emission from uncontrolled waste disposal leads to lung-related illnesses which worsen pre-existing conditions and may trigger fatal consequences (Lelieveld et al., 2015). City dwellers facing two challenges with clean air because they can neither purchase nor afford its cost. This includes families which have children and elderly members. The deteriorating air quality conditions create both health risks for people and diminish their quality of life so outdoor activities become linked with worry and distress.

3.1.4. Biodiversity Loss

Waste produces an unfavorable impact on biodiversity which exceeds all measurements. The poor management of waste eliminates habitats while forcing numerous species toward complete disappearance. Marine environments are highly contaminated with plastic waste which impacts different ocean species through their incorrect food preference behavior and their vulnerability to plastic entanglement (Jambeck et al., 2015). The loss of biodiversity generates destabilizing impacts across our ecosystems that our living systems need to sustain themselves.

3.2. Health Implications

Several human health risks arise due to poor waste management practices, which go beyond creating environmental damage to threaten public health and quality of life.

3.2.1. Vector-Borne Diseases

Waste accumulation creates breeding spaces for disease-carrying vectors, which include mosquitoes above all others. Malaria and dengue fever become more common in environments where waste materials are improperly disposed because the standing liquid creates suitable conditions for replication. The diseases from poor waste management practices affect most severely vulnerable populations especially those who live in areas without healthcare access (Sims et al., 2017; Manguin et al., 2016). Those who produce minimal pollution suffer the most severe impact from its consequences.

3.2.2. Waterborne Diseases

The consumption of toxic water by community members increases the chances of life-threatening illnesses such as cholera and dysentery which result in annual fatalities. The lack of sufficient sanitation provides additional health hazards to affected populations. According to the WHO (2014) proper disposal of waste remains vital for ensuring public health. The spread of waterborne illnesses disrupts both personal existence and multiple societies since it creates unstable economic environments and reduced productivity rates.

3.2.3. Mental Health Issues

The combination of waste and pollution in one's environment directly resulted in elevated stress and anxiety rates. The implementation of strategies which both improve community beauty and minimize waste releases can produce major mental health advantages (Mata et al., 2019). Cities which properly manage their waste effectively generate residents who exhibit increased life satisfaction measurements. Environmental areas contaminated by waste will produce feelings of abandonment and despair that damage social connections and reduce overall quality of life.

3.3. Role of QHSE Policies

Municipalities need to implement Quality Health Safety and Environment (QHSE) policies as mandatory frameworks which support proper waste management techniques. QHSE policies establish compelling guidelines that teach proper waste reduction methods as well as recycling strategies and disposal techniques. These policies are essential instruments for community development that people should view beyond their administrative nature to unlock their quality-improving benefits.

Well-designed public awareness programs which explain the significance of recycling combined with waste sorting enable residents to take direct action in ENVIRONMENT UPKEEP. Tangible changes will emerge from community-based partnerships when they receive both full local government support and active citizen involvement. The approach develops resident ownership together with the shared understanding of personal environmental responsibilities.

4. Conclusion

The analysis of defective waste disposal practices demonstrates how environmental damage crosses paths with health problems in human beings. The lack of proper waste management creates severe health problems which predominantly affect vulnerable populations living in urban areas. The research endorses swift population-based improvements through QHSE strategies which demonstrate the requirement for social unity to tackle this emergency.

Our efforts to create better urban environments follow two interrelated directions because environmental cleanup targets both waste control and life quality improvements for each city resident. Urban areas will evolve into economic centers alongside public health protectors and environmental sustainability guardians through deliberate integration of sustainability principles within urban infrastructure. Every one of us forms a component of connectedness since our behaviors alongside their effects spread further than our direct spaces.

Compliance with ethical standards

Disclosure of conflict of interest

The author of this research Kelvin Achi Mobosi declares he has no disclosed conflicts of interest pertaining to his work.

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