

The Effects of Poor Waste Management on Health and Socio-economy among Residents in Gombe Metropolis

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ABSTRACT

Waste generation has significantly increased in Gombe state due to indiscriminate dumping of refuse in our environment and this has negative effects on health of the populace. In most municipal areas in Gombe state of Nigeria, poor waste management has become a threat to humans, animals and the environment due to the general increase of waste generation. Hence, the need to understand the causes of poor waste disposal and its harmful effects or implication on health among residents of Gombe Metropolis in Gombe state of Nigeria. (2015-2024). the research employed a survey methodology. The information collected from the research indicates that the inappropriate disposal of municipal trash has severe and hazardous consequences on the environment and humans survivals. Environmental risks, health threats, ozone layer depletion, flooding, unsightly environmental conditions, and human injuries were recognized as consequences of inadequate garbage management. Findings also revealed that, ineffective solid waste management in Gombe Metropolis is characterized by improper disposal, inefficient collection methods, laziness, ignorance and insufficient coverage of the collection system while reduction, reuse and recycling are some of the strategies that could be employed for an effective waste management. The report in conclusion presents succinct recommendations for government, experts, highway managers and the general public on the need to gird up for the challenge given by this threat

Key Words: Solid Waste Management, Health and Socio-economic Effects, Nigeria.

INTRODUCTION

The management of solid waste presents an escalating challenge for numerous swiftly urbanizing regions throughout Africa. The current estimation is that the proliferation of urban solid garbage is outpacing the rate of urbanisation. Global projections suggested that by 2002, 2.9 billion city dwellers produced approximately 0.64 kg of garbage per individual daily, and by 2012, this increased to 1.2 kg per individual daily with an urban population totalling 3 billion. It is anticipated that by 2025, around 4.3 billion city inhabitants will produce an average of 1.42 kg of waste daily (Hoorweg and Bhada-Tata, 2012). Solid waste is recognised for its impact on health, making solid waste management a critical concern for both environmental and public health. Nevertheless, although several causal relationships between trash exposure and health effects for certain waste categories are well-documented, others remain ambiguous or are not regarded as significant public health concerns. In instances where the causative relationships are established, the complete magnitude of the health burden resulting from exposure may remain uncertain.

The exponential growth of urban populations worldwide has placed immense pressure on environmental systems, particularly in the management of waste and by-product of human activity that, if left unaddressed,

poses severe threats to ecological balance, public health, and sustainable development. Environmental waste management and protection have thus emerged as fundamental pillars of sustainable urban planning, as cities

today generate staggering quantities of solid waste, exceeding 2 billion tons annually, with projections indicating a rise to 3.4 billion tons by 2050 (World Bank, 2020). This surge is largely attributed to rapid urbanization, industrialization, and changing consumption patterns, which collectively outpace the capacity of existing waste management infrastructure in both developed and developing nations.

The consequences of inadequate waste management are far-reaching and multidimensional. Environmental degradation stands as the most visible impact, with improper waste disposal leading to the contamination of air, soil, and water resources. Landfills, frequently the principal disposal option in poorly managed systems, produce methane a greenhouse gas 25 times more potent than carbon dioxide contributing considerably to global climate change (IPCC, 2021). Meanwhile, open dumping and burning of garbage emit harmful chemicals, including dioxins and heavy metals, which permeate ecosystems, disturb biodiversity, and enter the human food chain (United Nations Environment Programme, 2023). Public health is equally compromised, as uncollected waste fosters the proliferation of disease vectors like rodents and mosquitoes, increasing urban populations' susceptibility to outbreaks of cholera, and respiratory illnesses (WHO, 2022).

Waste generation has significantly increased in Gombe state due to indiscriminate dumping of refuse in our environment, which in turn has negative effects on health of the populace. Hence,

the need to understand the effect of poor waste disposal on people's health within the study area. Effective waste management is vital for public health, as inadequate waste management elevates morbidity and mortality rates in several manners. In most municipal areas in the study area, poor waste management has become a threat to humans, animals and the environment due to the general increase in waste generations, which necessitate proper management system of waste to protect the environment from its harmful effects (Ifeoluwa, 2019).

Statement of the Problem

One of the most significant challenges confronting humanity today is waste management. In both urban and rural settings, the disposal of waste presents the most pressing environmental issue. The speed at which waste is produced exceeds the pace of its removal. This raises questions about the underlying causes of this environmentally detrimental behaviour. Is it due to the mindset or attitudes of individuals, the absence of centralised waste disposal sites, a conscious effort to contaminate the environment, or the inability of relevant authorities to manage the volume of waste generated.

The high rate of morbidity and mortality has been linked to poor waste management in Nigeria, particularly in residents of Gombe Metropolis in Gombe state of Nigeria. The implications of poor waste management on health are contamination of air, water and food which could lead to diseases both communicable and Non communicable. When surface and underground water is contaminated, disease like Typhoid, Cholera, Hepatitis A, and Malaria may occur. Sharp objects especially from hospitals may lead to Injuries and infections such as Hepatitis B Virus and HIV especially among Children and Scavengers.

Other diseases such as Anthrax and Brucellosis may result as a result of disposing dead animals in the environment. Poor waste disposal may attract rodents such as Rats the vectors of diseases like Lassa fever and Plague. The health consequences of this crisis are particularly alarming, with waste-related diseases now accounting for 22% of all hospital admissions in the city (World Health Organization Nigeria, 2023).

Medical records show cholera outbreaks have increased threefold since 2021, with epidemiological studies directly linking 78% of cases to poor waste management practices in affected communities (Nigeria Centre for Disease Control (NCDC 2023). Respiratory infections caused by the common practice of waste burning affect 43% of residents in high-density neighbourhoods, creating a persistent public health emergency (Bashir et al., 2024).

Objectives of the Study

The main objective of this study shall be to evaluate Poor Waste Management: Implication on Health among residents of Gombe Metropolis in Gombe state of Nigeria. The specific objectives of the study are:

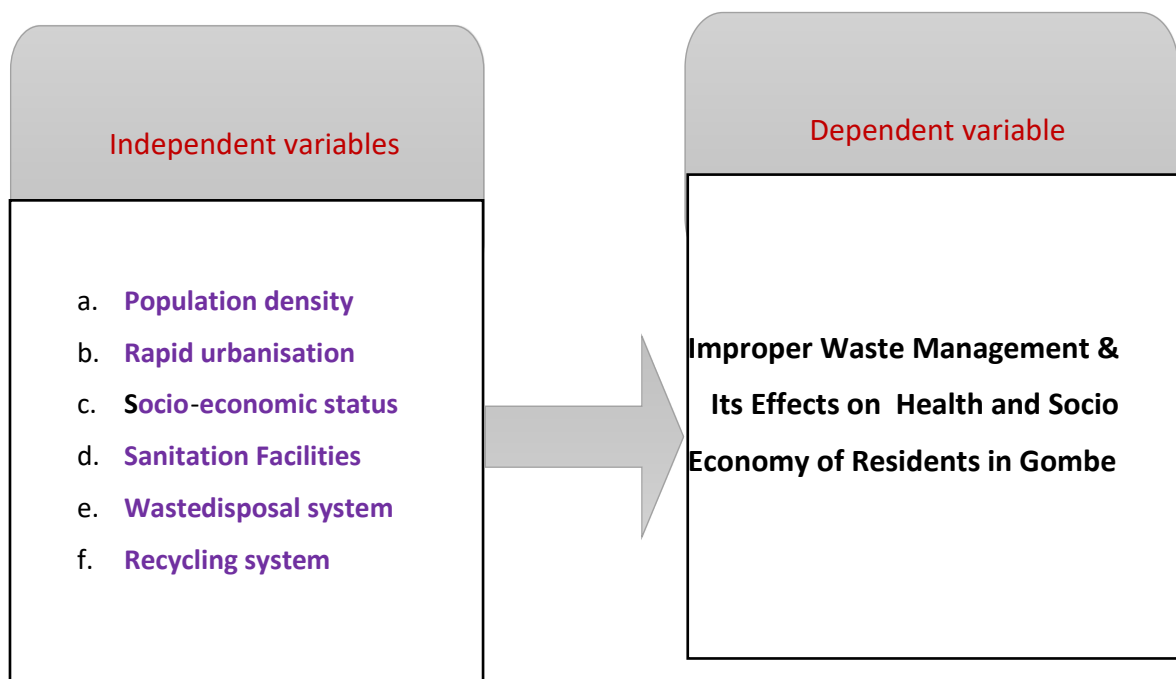
- To identify the methods of waste disposal among residents of Gombe Metropolis.
- To assess the trend of diseases associated with poor solid waste management among residents of Gombe Metropolis.
- To identify the effects of poor waste disposal among residents of Gombe Metropolis.

Research Question

The following research questions shall anchor and guide the study:

- What are the methods of waste disposal among residents of Gombe Metropolis?
- What are the trends of diseases associated with poor solid waste management among residents of Gombe Metropolis?
- What are effects of poor waste disposal among residents of Gombe Metropolis?

Figure 1.1 Conceptual Frameworks



This Conceptual framework is constructed on pertinent literature that has demonstrated a correlation between solid waste management's impact on the health quality and socioeconomic status of residents, along with various elements affecting these circumstances in Gombe.

Conceptual Review

The Concept of Environmental Protection

Environmental protection refers to the policies, practices, and initiatives aimed at preserving natural resources and reducing environmental degradation caused by human activities. It involves efforts to mitigate pollution, conserve biodiversity, and promote sustainable practices to maintain ecological balance (Mensah, 2020).

Environmental protection measures include air and water pollution control, forest conservation, climate change mitigation, and waste management policies. Regulatory frameworks, such as the Paris Agreement on climate change and local environmental laws, ensure that industrial activities and urbanization do not compromise the health of ecosystems (Bamgbose et al., 2021).

We can therefore opine that, environmental protection is a comprehensive and multidimensional concept that encompasses policies, strategies, and actions designed to safeguard the natural environment from degradation resulting from human activities. It encompasses initiatives aimed at diminishing pollution, preserving natural resources, alleviating climate change, and fostering sustainable development to guarantee the enduring health and stability of ecosystems and human communities. Effective environmental protection requires a collaborative approach among governments, industries, and individuals, alongside the implementation of robust regulatory frameworks and technological advancements.

The Concept of Waste Management

Waste is defined as any garbage, rubbish, or other material that has been discharged as a result of residential, commercial, industrial, mining or agricultural activity. Consequently, we might assert that waste, refuse, debris, litter, or garbage, contingent upon the nature of the material or local vernacular, fundamentally constitutes an unwelcome or undesirable entity. It could comprise the undesirable byproducts resulting from a production process (domestic, industrial, commercial, mining, or agricultural activities) or from communal and residential undertakings. The substance can be disposed of, collected, preserved, or processed (physically, chemically, or biologically) before being destroyed or repurposed. It is likewise employed to characterise something utilised ineffectively or improperly.

Trash management encompasses the entire procedure of managing trash from its inception to its final disposal. It encompasses the gathering, conveyance, treatment, and disposal of refuse. The objective of waste management is to minimise the volume of refuse directed to landfills. To rephrase, it might be articulated that it constitutes a procedure of gathering, conveying, and discarding refuse. It additionally encompasses overseeing and controlling the waste management procedure. The principal objective of pre-incident waste management planning is to equip a community to proficiently handle garbage, debris, and materials produced by a homeland security event, including minimising the potential waste generated initially. The primary aim of the Division is to advocate for the secure handling and use of hazardous materials, encompassing toxic chemicals and dangerous waste, to prevent harm to health and the ecosystem.

From the above submissions, we can therefore conclude that, waste management refers to the entire process of handling discarded materials from their point of origin to their final disposal. This encompasses the organised gathering, conveyance, treatment, recycling, and oversight of diverse waste categories to reduce ecological and

health repercussions. garbage management refers to the systematic approach of averting, gathering, sorting, conveying, processing, and disposing of garbage to reduce ecological consequences and adhere to legal standards. In road transportation, it encompasses all items including spent oil, tires, batteries, packing, pallets, spill residues and general depot refuse. An effective waste management system guarantees the secure handling of materials, precise tracking, and the diversion from landfills through reuse and recycling whenever feasible. Different waste management methods include:

Recycling: Recycling is an essential component of a circular economy as it entails the transformation of resources that would typically be discarded into new products.

Incineration: Waste incineration entails the combustion of hazardous substances at sufficiently elevated temperatures to eliminate pollutants. This approach decreases the volume of waste deposited in landfills, yielding beneficial effects.

Waste-to-energy: This procedure incinerates non-hazardous garbage instead of disposing of it in a landfill. It serves as a viable substitute for landfills because to the energy produced during combustion. This method allows for the transformation of waste into electrical energy and/or steam power.

Landfill: A landfill is an area designated for the disposal of solid refuse. This technique frequently pollutes land and aquifers. It is fundamentally opposed to the principle of a circular economy since landfill waste is neither repurposed nor reintegrated into the lifecycle. Coastal landfills can still exacerbate ocean plastic pollution, as lightweight materials may be carried off by strong winds or heavy rainfall into rivers and ultimately the sea.

Anaerobic digestion: One notably advantageous technique for waste management is anaerobic digestion, a process in which microbes degrade organic substances, including food waste and animal dung, devoid of oxygen.

Table 1.1 The Sources and Types of Solid Wastes

Source	Waste Generator	Types of Solid Wastes
Residential	Single and multifamily dwellings	Ashes, food waste, plastics, paper, leather, metals, yard waste, woods, glass, waste o hazardous household, special wastes (e.g. consumer electronic, batteries, tyres, bulky items and white goods)
Industrial	Producing, both light and heavy, construction sites, fabrication, power, and chemical.	Foods waste, household waste, ashes, hazardous wastes, special waste, construction and demolition materials
Commercial	Shops, restaurants, hotels, office buildings, markets, and so on.	Paper, glass, metals, special waste, food waste, woods, plastics, cardboard and hazardous wastes, cardboard

Institutional	Schools, prisons, hospitals, and government buildings	Same as commercial.
Construction and demolition	Sites for new construction, road repairs, renovations, and building demolition.	Wood, concrete, steel, dirt, and so on
Municipal services	Cleaning of streets, landscaping, parks, beaches, and other areas, as well as water and waste water treatment plants	General waste, street sweeping, tree trimming, landscape, recreational areas, sludge, wastes from packs and beaches.
Process (manufacturing etc.)	Power material, refineries, chemical plants, mineral extraction, heavy and light manufacturing.	Waste, scrap materials, and off-spec products and industrial processes.
Agriculture	Orchards, crops, vineyards, feed lots, dairies, and farms.	Agricultural waste, food waste, and hazardous waste (e.g., pesticides).

Source: (Researcher's Design 2026).

METHODOLOGY

This study adopted a descriptive cross-sectional survey design to examine the effects of poor waste management on the health and socio-economic conditions of residents in Gombe Metropolis, Gombe State, Nigeria. The survey design was considered appropriate because it enabled the collection of primary data from residents regarding their experiences, perceptions, and practices relating to waste management and its associated health and socio-economic implications.

The study was conducted in Gombe Metropolis, the administrative and commercial centre of Gombe State, Nigeria. The metropolis has experienced rapid urbanization and population growth over the past decade, resulting in increased municipal solid waste generation and significant challenges in waste collection, disposal, and environmental sanitation. The study focused on residents living within the metropolis because they are directly exposed to the environmental and public health consequences of poor waste management.

The target population comprised adult residents (18 years and above) who had resided in Gombe Metropolis for at least one year. A sample of 384 respondents was determined using Cochran's (1977) sample size formula for large populations. A multistage sampling technique was employed, whereby major residential communities were purposively selected, households were selected through systematic random sampling, and one eligible respondent was randomly selected from each household.

Data were collected between March and April 2026 using a structured questionnaire developed from previous studies on municipal solid waste management and environmental health. The questionnaire contained two sections. Section A elicited respondents' demographic characteristics, while Section B consisted of statements measuring waste management practices, health effects, environmental consequences, and socio-economic impacts using a five-point Likert scale ranging from Strongly Agree (5) to Strongly Disagree (1).

To enrich and validate the survey findings, three Focus Group Discussion (FGD) sessions involving 24 purposively selected participants (eight participants per group) were conducted. Participants included community leaders, environmental sanitation officers, traders, youth representatives, and women leaders who possessed considerable knowledge of waste management practices within the metropolis. Each discussion lasted

approximately 60–90 minutes and explored participants' experiences regarding the causes of poor waste management, its health implications, environmental effects, and possible mitigation strategies. The discussions were audio-recorded with participants' consent and later transcribed for analysis.

The questionnaire was subjected to face and content validity by experts in environmental management and public health. Reliability was assessed through a pilot study involving residents outside the selected study communities using Cronbach's alpha, which produced a reliability coefficient above the acceptable threshold of 0.70, indicating satisfactory internal consistency.

Quantitative data obtained from the questionnaire were coded and analyzed using the Statistical Package for the Social Sciences (SPSS) Version 26. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize respondents' characteristics and responses. Multiple regression analysis was employed to examine the effects of poor waste management practices on residents' health and socio-economic conditions at a 5% level of significance. Qualitative data obtained from the Focus Group Discussions were analyzed using thematic content analysis, whereby transcripts were coded into themes that complemented and explained the quantitative findings.

Ethical approval was obtained from the appropriate institutional authority before data collection. Participation was voluntary, informed consent was obtained from all respondents and FGD participants, and confidentiality and anonymity were maintained throughout the study.

EMPIRICAL LITERATURE REVIEWS

To attain a comprehensive understanding of Poor Waste Management: Health Implications for the inhabitants of Gombe Metropolis in Gombe State, Nigeria, numerous studies have addressed this problem. Consequently, multiple empirical research efforts have been undertaken.

Shamaki and Shehu (2017) assessed the solid waste management strategies in Sokoto State, located in North-Western Nigeria, and specifically in Sokoto. The study's data was derived from two main and supplementary sources. A structured questionnaire was administered to one hundred twenty families to collect primary data, while ministerial documents served as the secondary data source. The information was examined employing descriptive statistics and the chi-square test for association. The findings indicated that 55.8% of the waste generated in the city originates from residential sources, 32.5% from commercial entities, and 11.7% from agricultural origins within the research region. The majority of participants (81.7%) indicated that they collect refuse in waste receptacles, which are frequently discarded at local drainage or disposal locations.

Suleiman (2019) assessed the impact of solid waste management in the Daura Township of Katsina State, northern Nigeria. Two field visits to the town employed a direct observational method to achieve the objective. Furthermore, a survey was administered to participants selected for the research, and the Zonal Officer of the waste management agency overseeing Daura town was interviewed. Notable discoveries encompass the following: certain residents fail to collaborate with the Agency to facilitate effective waste management; refuse is permitted to amass prior to the deployment of vehicles and equipment for collection; and 22.82% of participants discarded their waste at designated locations.

David et al. (2020) investigated the repercussions of insufficient solid waste management practices in various developing countries. This research sought to understand the perceptions and sentiments of the general populace on local garbage management practices. Ogun State has five local government units. The results indicated that critical factors such as age, income, and educational level influenced individuals' attitudes, actions, and perceptions regarding solid waste management. A majority of residents (54.4%) contend that sanitation services are prohibitively costly and need to be managed by local and state authorities, while approximately 36.6% of the populace in the selected local governments resorts to disposing of their solid waste in open dumps.

Chukwueloka, Uzor, and Chukwurah (2021) assessed the influence of solid waste management regulations on public health in Nigeria. The study aimed to ascertain the impact of solid waste management strategies on the proliferation of epidemics. This study utilised secondary data sources employing an ex-post facto design. The investigator determined that SWMP influences the dissemination of outbreaks and that its implementation has mitigated the problem of drainage obstructions.

Chukwuebuka et al. (2022) assessed the material and financial potential of the produced municipal solid garbage, together with the daily and yearly generation rates in prominent Nigerian cities. The average mix of municipal solid waste (MSW) for 22 cities consisted of paper (13%), glass and metal (3% each), textiles (2%), miscellaneous materials (14%), plastics (9%), and organics (56%). The valorisation of municipal solid waste in Nigeria faces numerous challenges, including insufficient waste management, unawareness of the informal garbage sector, and a scarcity of financial resources. Consequently, the establishment of suitable and effective policies and decision-making procedures is essential.

Jazat, Akande, and Ogunbode (2023) recognised the associated challenges in solid waste management by distributing 1,400 structured questionnaires to gather information from participants in Nigeria. Descriptive and inferential statistics were employed to examine the gathered data. The findings revealed an increase in solid waste disposal in the two regions, influenced by home size and stakeholder income. Solid wastes commonly identified in the study areas include food remnants, foliage, paper products, textiles, leather goods, hair extensions, nylon materials, plastics, metals, and cans. These objects often culminate in polluting the landfill surroundings.

An examination of various empirical literature throughout Nigeria and its vicinity reveals that solid waste impacts both the quality of life for individuals and the surrounding environment. The conspicuous deficiency in the literature is the absence of research investigating the impact of solid waste on residents' quality of life in Gombe town, especially given the rise in solid waste owing to the migration of internally displaced individuals from adjacent states, stemming from the Boko Haram insurgency. This has resulted in a notable rise in the city's population and a jump in the amount of rubbish produced. Consequently, this research focused on the origins and consequences of trash produced in the metropolitan area. This research will fill the existing vacuum in the literature by performing a survey and comprehensive literature analysis to assess the impact of inadequate solid waste disposal on quality of life and provide recommendations for alleviating these impacts. This will contribute to the existing body of empirical literature.

DISCUSSION

This section centered on the effect of poor handling of waste and its implication on people in the study area.. It is upsetting to see someone defecating in daylight on the side of the road, or to see a man throwing waste on the street. The implications base on our focused group discussion is very serious on the environment, the economy and the health status of the people if not efficiently managed.

Table 1.2 Health Effects of Improper Waste Management among residents in Gombe

Disease causing agent	Disease	Impact on Health Status
Bacteria	Shigellosis	Irritable bowel syndrome (IBS) and diarrhea.
Bacteria	Typhoid	Fever that lasts from a few days to several weeks, ranging from mild to severe.
Bacteria	Cholera	Intestinal infection that can result in watery diarrhea and dehydration.
Bacteria	Diarrheal disease	Dehydration, which can be fatal, can be caused by frequent watery

		faces.
Viruses	Hepatitis A	A liver infection that causes pain, diarrhea, and jaundice.
Viruses	Polio	Can result in permanent or temporary weakness of muscle, as well as death in some cases.
Viruses	Amoebiasis	Mild to severe diarrhea and liver damage can result from infection that can occur up to several years after exposure to the protozoa.
Protozoa	Giardiasis	The small intestine is infected. It usually manifests as chronic diarrhea, abdominal cramps, gas production, and frequent loose, pale, and greasy stools, but it can also manifest as a variety of other intestinal symptoms.
Parasitic worms	Ascariasis (round worm)	This infection affects one out of every four people on the planet, and it can cause malnutrition, weight loss, and anemia.
Parasitic worms	Hookworm infection	Two types of nematodes that live in the small intestine and feed on blood, causing anemia.
Parasitic worms	Tapeworm infection	A worm that lives in the intestine and can cause malnutrition and anemia if not treated. This is usually spread by eating worm-infested or worm-egg-infested food that hasn't been properly cooked.
Parasitic worms	Bilharzia schistosomiasis	Diarrhea and blood in the urine and faces are symptoms of schistosoma disease, which is caused by the schistosoma worm. It can harm the liver and kidneys in the long run.

Source: (Research Survey 2026)

Table 2.2 depicts a variety of diseases and their negative impact on community health as a result of poor waste management. When solid wastes are improperly disposed of, they can cause fish death as well as human diseases such as dysentery, diarrhea, cholera, liver damage, abdominal cramps, anemia, and kidney damage, among others. If toxic waste is consumed by animals, it can be extremely dangerous to their health, and it can be even more dangerous if the waste is dumped in water bodies. They pose a serious threat to aquatic life. Animals have also died as a result of poor solid waste management (especially domestic animals).

The death of animals such as cattle results in poverty, while the death of animals such as dogs results in home insecurity. It has also contributed to the spread of diseases in the sense that when wastes such as broken bottles and other items are dumped anywhere; they collect water (when it rains) and become a breeding ground for mosquitos. When human waste is dumped improperly, diseases spread because flies carry the germs from the stool. It can also result in human harm. For instance, if a person is walking and steps on broken bottles, nails, or even pins (sharp objects), he or shemay sustain an injury that results in bleeding (mostly, these waste shape objects are infected with germs) Rats, flies, mosquitoes, cockroaches, pigs, birds, and other vectors that can transmit human and animal diseases to humans are attracted to biodegradable organic materials. In the transformational processes, they also emit greenhouse gases (mostly methane and carbon dioxide). On a volume basis, methane is estimated to be approximately 20 times more harmful than carbon dioxide, making it a major contributor to climate change (Salam, 2016). Broken glasses and other sharp objects are frequently found in waste, making it potentially dangerous to those who interact with it. Solid wastes, when improperly disposed of, can also be an environmental hazard with socio-economic consequences, as shown in the table 3 below:

Table 1.3 Environmental and Socio-economic Effects of Poor Waste Management among residents in Gombe

Type	Effects
Contamination of surface	Debris that enters aquatic environments adversely affects the chemical makeup of the water. This affects all aquatic environments. Contaminated water can also pose a threat to

water	animals that consume it.
Contamination of soil	Vegetation can be adversely affected by toxic substances that infiltrate the soil (pollutants) as they uptake the contamination via their root systems. Humans could experience health repercussions by ingesting flora and fauna that have interacted with contaminated soils.
Land and air pollution	Contaminants inhaled into the lungs can disseminate throughout the body, while inadequate waste management can lead to terrestrial and atmospheric pollution, with respiratory issues and many adverse health consequences. Atmospheric contamination can lead to the development of acid rain, detrimental to agricultural productivity as it hastens the depletion of soil fertility from the earth's surface.
Leachate	Leachate is a liquid generated when water percolates through polluted regions. It generates an extremely noxious chemical amalgamation that may lead to the infiltration of dangerous compounds into surface water, groundwater, or soil.
Economy	All individuals require to inhabit and explore pristine, hygienic, and salubrious surroundings. Substandard hygiene, imprudence, and littering deter reputable individuals, investors, and tourists. The quality of life in these cities is often subpar.
Reduces IGR	Recycling produces internally generated revenue (IGR) for municipalities that neglect investment in recycling and effective waste management. They also forfeit job prospects linked to recycling, composting, and partnerships with relevant industries.
Global warming	Most of this waste can be extremely harmful to the environment. When these wastes are improperly dumped into the atmosphere, they can deplete the ozone layer and cause diseases like cancer. Thus, global warming is becoming a problem.

Source: (Research survey, 2026).

From the above table, we can observe that, when these pollutants are discharged into atmosphere in an inappropriate manner, they can damage the ozone layer and causes disease such as cancer. As a result, of global warming has emerged as serious issues. Acid rain can arise as a result of the air pollution, and it is hazardous to crop life because it speed up the removal of nutrients from the soil. It has an effect on damaged as well (Ogwueleka, 2003).

Poor domestic management of waste also contributes to an unappealing environmental scenario. This may have an impact on the tourism industry, as tourists may be less inclined to visit the country. Businesses have suffered as a result of the lack of patronage caused by the refuse. Customers cannot stand the stench, so businessmen and women had to find another location to conduct their operations. Uncontrolled dumping of solid waste can result in land waste, with large areas of land being used as waste dumping grounds. Later on, the residents of the area neglect these same plots of land.

Solid waste mismanagement has an impact on productivity and other infrastructure. Disease spread, overall environment pollution (odour, noise, smoke, dust; soil, water) poor solid waste management poses a number of serious dangers including greenhouse gas emissions, effects on other infrastructure, and physical chemical, fire, and explosion. Direct contact with sharps and / or infected sharps, usage of some hazardous chemical/ solution, explosion and fire risk associated with certain solvents, were among the physical and chemical hazards (NOUN, 2016). The social ramifications are massive. Poor waste management has attributed to the pollution of the environment, resulting in an unsightly situation. People who live near the garbage, for example, will be perceived as dirty even if they are not. Due to the presence of the refuse, they may be hesitant to invite friends to their home.

Soil contamination may adversely affect terrestrial ecosystems, diminishing the conservation and aesthetic value of the area. Marshal (1995) asserts that open dumpsites constitute a significant environmental issue, especially regarding the quality of the air inhaled by individuals. Landfills release a foul stench and smoke that adversely affects the health of nearby residents. Salam (2016) posits that dumpsites can serve as a source of

airborne chemical pollutants due to the off-site dispersal of gases and particles, as well as compounds attached to dust, especially while the site is in active operation. Soil pollution and groundwater issues can lead to direct exposure or indoor air contamination, exemplified by volatile organic compounds into local basements and the ingestion of home-cultivated produce. Salam (2016) stated that an organic compound was detected in the ambient atmosphere of residences adjacent to the landfill. Numerous community health surveys have revealed a diverse array of health difficulties, encompassing respiratory symptoms, skin, nasal, and ocular irritation, gastrointestinal complications, psychiatric disorders, and allergies.

Canines and felines consistently serve as feeding grounds for refuse sites near urban neighborhoods (Dolk, 1997). These animals, in conjunction with rats, transmit illnesses to adjacent homes. As per Ugwu (2000), inadequately handled waste, especially excreta and various liquid and solid refuse from residences and the community, is a significant health hazard and has the potential to disseminate diseases. The paper indicates that neglected refuse lures flies, rodents, and various other organisms, which then disseminate illnesses. Typically, it is the organic waste that breaks down and releases an unpleasant smell. Individuals residing in proximity to the landfill are impacted by the noxious smell, illustrating that landfills have significant repercussions for local inhabitants. Agricultural and industrial byproducts may present significant health hazards. In addition to that, combining industrial and municipal hazardous wastes might subject individuals to chemical and radioactive dangers. Neglected solid waste can impede storm water drainage, leading to the formation of stagnant water bodies that may become breeding grounds for diseases. Refuse discarded adjacent to a water source might also pollute the aquatic environment or subterranean water reserves. Directly discharging untreated garbage into oceans, rivers, and lakes leads to the accumulation of hazardous compounds in the food chain through the plants and animals that ingest them (Medina, 2002).

CONCLUSION

The logical and sequential presentation indicates that inadequate waste management not only diminishes the visual appeal of the environment but also negatively impacts the health and socio-economic conditions of the inhabitants; thus, residents should assist the waste management authority, as they play a crucial role in waste disposal and management, as evidenced by the study. The disposition of individuals regarding waste management will significantly influence the attainment of a more favourable and healthier environment for all.

RECOMMENDATIONS

Awareness Creation: The government ought to utilise mass media to promote awareness on the advantages of proper environmental cleanliness and the dangers linked to inadequate waste management methods. Considering that a "healthy nation equates to a wealthy nation," reduced waste correlates with improved resident health.

Policy instruments: Region and Jurisdiction Authorities have implemented several policy tools to regulate trash and achieve their objectives of minimising landfill disposal, including:

- Regulations governing waste management to oversee the collection, transportation, and disposal of refuse.
- Market-oriented mechanisms: to incentivise alterations in waste generation and disposal practices among families and businesses (including landfill taxes, pre-paid disposal and recycling charges, deposit-refund systems, and financial incentives).
- Extended producer responsibility and product stewardship initiatives to foster collective accountability between the sector and the community.
- Government dissemination of information and procurement strategies to tackle issues related to insufficient knowledge regarding waste management alternatives, to encourage behavioural changes

among consumers and businesses, and to implement procurement policies that stimulate demand for specific resource-efficient products.

REFERENCES

1. Bamgbose, O., Adewumi, J. R., & Olatunji, S. (2021). Environmental protection and sustainability: Challenges and prospects in Nigeria. *Environmental research & policy*, 6(1), 32-47.
2. Chukwuebuka, C. O., Chinelo, A. N., Nixon, N. N., Charles, C. A., & Juliet, C. I. (2022). Energy and material recovery potential from municipal solid wastes (MSW) in Nigeria: Challenges and opportunities. *Clean technologies and recycling*, 2(4), 282–307.
3. Chukwueloka, C. S., Uzor, O. A., & Chukwurah, D. C. (2021). Solid waste management policies and community health in Nigeria: An insight, *International Journal of Advances in Engineering and Management (IJAEM)*, 3(1), 606-615
4. David, O. O., Favour, B. Pius-I., & Sunday, O. J. (2020). Recycling article public perception of solid waste management practices in Nigeria: Ogun state experience, recycling; by CORE View metadata, citation and similar papers at core.ac.UK provided by Covenant University Repository.
5. Hoornweg D and Bhada-Tata P. (2012). What a waste: A global review of solid waste management. In: urban development series, knowledge papers. Washington: World Bank; 2012. Google Scholar
6. Jazat, J. P., Akande, J. A., & Ogunbode, T.O. (2023). State of solid waste disposal and suggested fixes for Iwo and Ibadan Metropolis, Nigeria. *Front. Sustain.* 3:1022519.
7. Medina, M. (2002). Globalisation, development and municipal solid waste management in third world cities. Tijuana, Mexico: El Colegio de Frontera Norte. <http://www.dnet.or/:d2002AwardsMedalsWinners/outstandinResearchDevelo>
8. Mensah, J. (2020). Sustainable development: Meaning, history, principles, pillars, and implications for human action. *Environment, development and sustainability*, 22(1), 297-316.
9. Mensah, J., & Boateng, P. (2022). Sustainable waste disposal practices: Innovations and challenges in the 21st century. *International journal of Environmental Science and Technology*, 19(4), 543-559.
10. Mishra, P., Pandey, C. M., Singh, U., Gupta, A., Sahu, C. & Keshri, A. (2019). Descriptive statistics and normality test for statistical data. *Annals of Cardiac Anaesthesia*. Vol. 22(1), 67-72
11. Ogundele, P. T., & Adewale, F. O. (2023). The role of composting in sustainable waste management: Case studies from sub-Saharan Africa. *African Journal of Waste and Environmental Science*, 11(2), 201-218.
12. National Environmental Management Authority. (2023). State of Nigerian cities environment report. Abuja: NEMA Publications.
13. Nigeria Centre for Disease Control. (2023). Annual epidemiological report 2023. Abuja: NCDC Publications.
14. Nigerian Institute of Waste Management. (2024). Best practices in municipal solid waste management. Lagos: NIWM Press.
15. Ogundele, P. T., & Adewale, F. O. (2023). The role of composting in sustainable waste management: Case studies from sub-Saharan Africa. *African Journal of Waste and Environmental Science*, 11(2), 201-218.
16. Shamaki, B., & Shehu, A.A. (2017). Assessment of solid waste management in Sokoto metropolis *Journal of Agriculture and Environment*, 13(2), 159-167.
17. Suleiman, I. L. (2019). Assessment of solid waste management in Daura township, Katsina State, *FUDMA Journal of Sciences (FJS)*, 3(2), 237 – 244.
18. United Nations Environment Programme. (2023). UNEP annual report 2023: Keeping the promise. Nairobi, Kenya: UNEP. Retrieved from <https://www.unep.org/resources/annual-report-2023>
19. United Nations Environment Programme (UNEP). (2023). Making peace with nature: A scientific blueprint to tackle the climate, biodiversity, and pollution emergencies. United Nations

-
20. World Bank. (2020). Solid waste management. Retrieved from <https://www.worldbank.org/en/topic/urbandevelopment/brief/solid-waste-management>
 21. World Health Organization Nigeria. (2023). Public health impacts of poor waste management in Nigerian cities. Abuja: WHO Nigeria Office.
 22. UNEP (2007). Developing integrated solid waste management plan training manual: ISWM Plan. UNEP. Guidelines for national waste management strategies: Moving from challenges to opportunities. Nairobi: United Nations Environment Programme.