Impact of Solid Waste on Human Health: A Case Study of Luck now City

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Abstract- **Growth in population growth and progress in urbanization is one of the main aspects in increasing solid waste which leads to health effects due to improper disposal of waste and the awareness within a community. In urban areas, residents which live near to solid waste in dumpsites face many problems due to incomplete disposal of solid waste. The study was carried out in municipal area to investigate type and the quantity of solid waste disposal, possible health effects due to solid waste disposal, method of solid waste disposal, components of solid waste. As a result there is need for increasing use of recycling and composting, need to properly manage and relocate the dumpsite to a safe distance from all human settlements.**

Index Terms- **Municipal Waste, Disposal System, Environment, Habitants, Bio-Waste, Hazards, Solid waste management, waste site, Sewage Treatment, Landfill, Public Health, dump site, by-products, generated waste, Decomposition procedure.**

INTRODUCTION

The rapid urbanization in the developing countries, uncontrolled and unplanned, has brought a serious environmental degradation. In the process of 'waste management' —The generation of waste and the collection, processing, transport and disposal of waste—is important for both the health of the public and aesthetic and environmental reasons. Management of waste is a very challenging and demanding undertaking in our country. Municipal Solid Waste (MSW) are getting disposed in open areas and many illegal dump sites which lack of monitoring and proper environmental pollution control , causes all types of pollution and solid wastes is a serious health hazard and lead to the spread of infectious diseases which create potential risks to human health. The unattended wastes lying around attract flies, rats, rodents and other creatures that, in turn, spread diseases such as dengue fever and cholera , respiratory, gastrointestinal, and several other kind of infectious diseases. The negative effects of Solid Waste are health deterioration, accidents, flood occurrences, foul dour and environmental pressures.

Air pollution is caused by uncontrolled burning of MSW and improper incineration.

The untreated leachate and decomposition of organic wastes in landfills pollutes surrounding soil and water bodies .Pollution from plastic bags is solid waste cause unexpected environmental hazards. Block gutters and drains are blocked by this waste, resulting in storm water problems. Livestock consume plastic which can cause death. Agricultural welds decreases soil productivity due to presence of non-biodegradable plastic bags. The main aim of this study is find out the various diseases due to solid waste in the study area and to determine the environmental and health impact of solid waste disposal.

What is meant by waste?

Solid waste are of following parameters on the basis of their characters - by their sources , by the types of wastes produced ,by generation rates and composition. The solid wastes are of different type depending on their source such as- Industrial, Institutional, Construction and demolition, Municipal services.

Waste can be classified as either controlled waste or non-controlled waste. Agricultural waste includes mainly slurry and farmyard manure with significant residues like straw, cereal and etc. Wastes are defined as hazardous because of the inherent characteristics (e.g. Toxic, explosive, Reactive, Ignitability, Corrosive)- Toxicity: waste which are harmful or fatal when ingested or absorb; Reactive: when heated they cause explosions and toxic fumes, these are unstable in nature; Ignitability: this is waste that can create fires under certain condition, e.g. waste oils and solvents ; Corrosive: In this wastes include

bases or acids that corrode metal containers, e.g. tanks..

Definition of Waste and Waste Management
"Waste" means any substance or object which the holder discards or intends or is required to discard. "Waste management" means the collection, recovery and disposal of wasteland transport including the supervision of such operations and the after-care of disposal sites, and including actions taken as a dealer or broker".

Definition of Municipal Waste
"Municipal waste is collected and treated by, or for municipalities. It covers waste from households, including bulky waste, similar waste from commerce and trade, institutions and small businesses, yard and garden, street sweepings, and market cleansing.

SOLID WASTE TREATMENT

The major methods of waste management are:

- Sewage treatment—It is a process of treating sewage to produce a non-toxic liquid effluent.
- Incineration—a process of controlled combustion designed to recover energy and reduce the volume of waste going to disposal by 85-90 %.
- Recycling—the recovery of materials from products after they have been used by consumers.
- Landfill—the dumping and deposition of waste in a specially scientifically designated area, which in nowadays sites consists of a pre-constructed 'cell' with an impermeable layer and helps to minimize emissions. In this process methane gas is produced.
- Gasification — It is a process in which partial combustion of Municipal Solid Waste is carried out in the presence of oxygen.

Disposals

Disposal Methods Used by Residents
The disposal methods of solid waste used by residents were very unsatisfactory. Educated people adopt better methods of waste disposal than illiterates. Uneducated people throw refuse on open land and drains. People likely those with higher education keep waste in bins or burn it. Majority of the respondents throw their waste on streets, drains, land. Few people deposit their waste in bins and bags which are transferred to the designated points for ultimate disposal.

Disposal of hospital and other medical waste requires special attention since this can create major health hazards. Hospitals, health care centres and medical laboratories generate waste such as bandages, discarded syringe needles, plasters, and infectious wastes are often disposed with the regular non-infectious waste.

- Landfills:- The most simple and economical measure is landfilling as far as natural decomposition occurs at the disposal site.
- Land treatment:- it is a process by which sludge from wastes is applied onto or assimilated into the soil surface.
- Landfill sites should be well lined and walled so that there is no leakage into the nearby ground water sources.
- Underground injection wells: - In this Solid waste are pressed into a steel and concrete shafts placed deep in the earth under pressure .

IMPACTS OF SOLID WASTE ON HUMAN HEALTH

There are negative impacts on both environment and public health due to improper waste management and illegal waste shipments. Negative impacts can be due to different handling and disposal activities resulting in soil, water and air pollution. Populations surrounded by the area of disposal have serious health problems which is caused due to untreated waste and inadequately disposed.

PUBLIC HEALTH EFFECTS

- Skeletal Muscular Systems – back pain
- Respiratory Abnormalities – bacterial upper respiratory tract infections (pharyngitis, laryngitis and rhinitis), chronic bronchitis and asthma
- Abdominal and Intestinal Problems – bacterial enteritis, helminthiasis, amoebiasis, liver cancer, kidney and renal failure

- Central Nervous System – impairment of neurological development, peripheral nerve damage and headaches
- Ear Infections – bacterial infections and otitis media
- Skin Disorders – fungal infection, allergic dermatitis, pruritis and skin cancer
- Dental Disorders - dental pain and dental carries
- Blood Disorders – Iron deficiency anemia
- Eye Infections – allergic conjunctivitis, bacterial eye infections
- Others – chicken pox, septic wounds and congenital abnormalities, malaria, cardiovascular diseases and lung cancer.

There are specific risks in handling wastes from hospitals and clinics. There are potential risks to environment and health from improper handling of solid wastes. Clinics, Disposal of hospital items and other bio-waste can create major health hazards even lead to death.

Dengue viruses have been recognized in recent decades as one of the most dreadful diseases worldwide. It is a life threatening disease, if a person is being infected more than once because of poor management of solid waste and sanitation condition.

Direct handling of waste can lead to various types of chronic and infectious diseases with the waste workers and rag pickers being the most vulnerable.

Incineration operators are at risk of chronic respiratory diseases, including cancers and bronchitis resulting from exposure to dust and hazardous compounds.

The hazardous waste can bring several severe health effects to residents due to its characteristics as, toxic, infectious and radioactive. Microbial pathogens are a potential source of hazard, particularly in composting and sewage treatment but also in landfill. Dust and the production of particulate matter are produced in landfill, composting processes, incineration and by road traffic involved in all waste management.

CONCLUSION

The focus of the study was on impact of waste due to non -scientific and non -engineering disposal.

The health effects connected to improper waste disposal are many and habitants living close to illegal dumpsites, open burning or illegally dumped waste are easily affected.

It was also noted that the extent of water and air pollution is worse in the raining season as a result of offensive and disease-carrying odor and ground water pollution.

The study therefore concludes that the dumpsite should be properly located and good management system must be there to minimize its effects on the environment and health.

The need for a consensus that everyone needs to act responsibly regarding waste disposal is a key for pro environmental behavior. To begin pro environmental behavior process the authorities and govt. must provide a functional waste disposal system.

The possibilities to establish a sustainable waste disposal system in a rural and urban area. Investigate possible solutions for achieving energy out of waste in a rural area. Finding sustainable ways to export waste from a rural area and use it as a energy source. Investigate and develop an action plan to implement the already existing legislation on waste disposal system. People must be awarded by health motivators about the effects of dumpsites on their health and environment.

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