

DOMESTIC SOLID WASTE MANAGEMENT IN NIGERIA: A PUBLIC HEALTH DILEMMA

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ABSTRACT

Urban cities worldwide continue to struggle to clear mounting heaps of municipal solid wastes caused by rapid population growth and urbanization, accelerated economic development, and industrialization. In addition, indiscriminate disposal of solid waste, as well as shortage of waste landfilling facilities constitute a threat to the environment and human health. Inappropriate solid waste management practices in developing countries constitute one of the major factors leading to declining environmental health conditions. Poor state of waste management was associated with inadequate facilities, poor funding, and poor implementation of policies as well as unhealthy lifestyle. The loss of interest by the local government administration in Nigeria to enforce environmental sanitation laws makes the attempt to manage all Municipal wastes difficult if not impossible. Public participation has been identified as the essential tool in solid waste management and regulation. Environmental health protection can be mitigated effectively through proper solid waste management and implementation of sustainable guidelines.

KEYWORDS

Waste disposal, Public Health intervention, Environmental Health, Waste Management

1. INTRODUCTION

Solid waste comprises all the wastes arising from human activities that are normally solid, discarded as useless or unwanted including industrial refuse, household, hospital and institutional garbage, street sweepings and construction waste [1]. The World Health Organization (WHO) defines Waste as “something which the owner no longer wants at a given time and space and which has no current or perceived market value”. This definition encompasses a wide range of methods used in grouping wastes. Human domestic activities generate considerable amount of solid waste which become more acute in the current technology- driven days. Although, procedures, methods and policies are directed towards reuse and recycle, practical implementation constitute another hurdle. Hence, solid waste management have been highlighted as a major environmental challenge globally [2].

Several ways for classification of solid waste are identified based on certain characteristics such as environmental risks, sources utility and physical property. In addition, further classification used human activities within the environment as basis for grouping solid waste into three categories; municipal, agricultural, and industrial. Major urban cities in Nigeria are struggling to clear mounting heaps of solid waste. Rapid migration to urban areas with consequential

population growth, accelerated economic growth, industrialization, and an improved citizens welfare led to an unprecedented production of municipal solid waste (MSW) containing durable/non-durable goods, containers and packaging waste, food waste and miscellaneous inorganic waste [3]. The resultant impact of an increased waste generation from various sources together with its indiscriminate disposal constitute a threat to the environment and human health. Production high and diverse solid waste have presented an important challenge to public health due to its high quantity as well as shortage of waste landfilling facilities.. Inappropriate solid waste management practices in developing countries constitute one of the major factors leading to declining environmental health conditions [4].

2. DOMESTIC WASTE MANAGEMENT AND ITS RELATED CONCERN

A proper waste management ensure the protection of the environment and human health [5]. Previous studies indicated increase in population with related concomitant urbanization dynamics and growth of conurbation will further exacerbate challenges [6]. Poor state of waste management was associated with inadequate facilities, poor funding, and poor implementation of policies as well as unhealthy lifestyle. However, environmental protection through reuse and recycling will ensure proper waste disposal and generation management for environmental safe [7].

Recently, developing countries have been overwhelmed with problems related to waste management due to lack of sustained efforts in terms of environmental awareness and education regarding greenhouse gas emissions effects. Many community members are usually illiterate and unaware of hazards associated with solid waste accumulation [8]. Inadequate solid waste disposal facilities and negative attitude towards the environment in many countries including Nigeria are commonly observed. Individual or group awareness and good attitudes towards waste generation and management were highlighted as crucial in the effort to respond to the waste management challenges [9].

Solid waste management aim to address issues related to waste generation control, storage, segregation, collection and transportation, processing and disposal of solid wastes (SW) in conformity with the best practices of public health, social, legal, political and environmental considerations. In Nigeria, the respective municipal councils collect, transport and dispose the domestic solid wastes. Proper timing and sustainable efforts are essential to develop methods in line with new and innovative technological innovations to effectively reduce the domestic solid wastes. Therefore, any substance or object in the categories set out in which the holder discards or intends or required to discard [10]. The objective of waste management is to maximize the proportion of value added activities, while removing waste and reducing incidental wasteful activities. The occurrence of waste can be postponed by extending the life of a product via innovating some valuable usage at its end-of- lifecycle stage. A waste becomes a new product if it finds a consumer and thus, generation of waste can be minimized by prolonging the deliverable age of a product [11]. Reports and discussion papers form many countries have been written in developed, developing and third world countries, which show that waste management is a common issue and problem globally. Today, waste and waste management has given rise to many pressing issues. As cities grow, land uses become increasingly complex and the waste generated increase in volume and variety coupled with the unwillingness of local communities to accept new technologies and facilities in 'their own back yards' [12]. Failing in managing solid waste, means failing in managing resources which then rises the operation cost and damaging the environment [13]. There is a multi-solution to solve the waste issues and problems. The solutions can be in term of technology (i.e. high-tech), which rich countries can develop and buy. Meanwhile the low-tech solutions (i.e. changing behaviour through the usage of human as a

collector or waste pickers) are being applied by most of the third world countries [14]. Waste problems and issues urgently need to be managed.

Unattended solid waste gives rise to unsanitary conditions especially in densely populated areas. The loss of interests by the local government administration in Nigeria to enforce the environmental sanitation laws makes the attempt to manage all Municipal waste difficult if not impossible. The neglect of the Environmental and Sanitary Inspectors department in the scheme of the local government administration makes the whole problem worse. The changing programme of the government, especially when there is a change in the leadership of the country makes an environmental condition that has to do with waste management even worse. This translates into making the rural communities and indeed the urban communities not to participate in any community self-help that has to do with waste management. The whole process become individualistic with no coordination and serious concerns emanate from both the government and the individual citizens. Previous governments specifically the General Muhammadu Buhari's administration recorded one of the best environmental programmes that encouraged general environmental concern and waste management in Nigeria.

3. IDENTIFIED SOLUTIONS

Public participation have been identified as the essential regulation. Participation is necessary for success of any health program, without which health will not have an enforceable guarantee. Public interest and participation may study the knowledge, attitude and general opinions toward solid waste management and recycling. Awareness, attitudes and behaviors of people in the community are crucial to the management of waste. Reasons for individual participation in management of waste related to environmental motivation, social pressures, attitudes and economic incentives [15].

There are various methods of management; either using technology (i.e. incinerators, sanitary landfill, etc.) or by using management tools (i.e. planning, etc.). In researching the suitable solutions, either using technology or management tools, first we should focus on the principle of what is actually happening in the real world. Research on waste minimisation had identified several factors which when implemented would directly as well as indirectly improve the quality [16]. Extending producer responsibility and helping behavioural changes by business through information, advice and awareness raising are important elements to be considered while framing the waste minimisation policies. Businesses continue to generate excessive waste and ignore the consequential costs to the environment. This is because of lack of incentive to adopt waste minimisation policies [17]. Good housekeeping, input material change, better process control, equipment modification, technology change and product modification contribute to the waste reduction [18]. Cognitive psychological modelling can provide the means to identify the driving forces behind recycling and waste minimisation behaviour and in a given area determine the main success factors [19]. In contrast to the significant developments with industrial waste minimisation, municipal waste minimisation has been relatively neglected until quite recently. There have been programmes to drive recycling behaviour not minimisation. For waste minimisation in food and drink industry, the food producers must give greater priority to reducing raw material wastage and to identifying the process options that result in a lower waste burden [20]. Waste production may be because of inefficiencies in production and management process which are due to lack of Knowledge [21]. Prevention and reduction of waste by introducing appropriate measures have attracted the attention of many researchers.

4. PRESENT AND FUTURE TRENDS

As it is today, the whole activities of environmental management in the country is left in the hands of individual state governments to implement, with no input/supervision from the Federal government. Recently Kano state government resolved to observe Environmental Sanitation Day on every last Saturday of the month from 8:00-10:00am. The reopening of this environmental/waste management policy requires that the communities need to be assessed on their knowledge, attitude awareness and practice on how to properly handle domestic solid waste disposal strategy and control [22].

Notwithstanding, the number of existing strategies, technologies and procedures employed in different parts of the world for waste management, the core problem lies in the solid waste proper handling, rather than dealing with the problem after the waste is generated [23].

Nigeria is also facing similar problems with a drastic increase in a municipal waste generation due to increase in its population. The present day increases of various heaps of solid wastes all over Nigerian urban cities require an urgent technological remedy to manage them. The waste disposal technique should be efficient and safe in order to safeguard both the community and its environment from recording damaging effects. The traditional method of dumping of refuse at the convenience of the resident in Nigeria end up chasing the healthy condition of those residents near the dump sites, this in turn increases high demand for medical services [24].

The near absences of incinerators in almost all major cities in Nigeria requires that the technique needs to be popularized since it is still strange and/or not available. The absence of this technique shows the poor knowledge of the technique and therefore poor incineration practices in most of these cities to talk less of rural areas. This also requires that the attitude needs to be promoted whenever the technique is popularized in the country. The knowledge and technique of biological method, such as the development and use of (bio gas and ethanol development) using municipal waste are poor or nearly absent or new in most Nigerian states, The technique is still in its embryo stage, mostly restricted to research institutions and private waste recycling factories in Lagos, Ibadan and other parts of South-Western Nigeria.

5. CONCLUSION

Environmental health protection and aesthetics in any society can be archived through proper solid waste management best practice.

RECOMMENDATIONS

Public awareness on proper waste disposal need to be enhanced through community and government.

Heath education on environmental hazards should be prioritized.

Government in collaboration with the local government authorities may provide agencies with the necessary manpower, funding and equipment to aid management of solid waste.

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