

ACCESS, USE AND DISSEMINATION OF INFORMATION ON WASTE DISPOSAL BY
ENVIRONMENTAL HEALTH WORKERS FOR HYGIENIC LIFESTYLE
A STUDY OF MINNA, NIGERIA

BY

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Abstract

The rapid urbanization in major cities in the developing countries of Africa, has brought a serious environmental degradation. The Management of solid waste is an enormous challenge in developing countries all over the world due to factors like: poverty, population explosion and urbanisation. Studies have shown that information has helped to promote environmental behaviour. Relevant information can help individuals to understand the interaction between resources (natural) and the environment. It is observed that greater knowledge of environmental principles, attitudes and theories of waste reduction through access and use of information can enhance individual's ability to participate in solid waste management. This research seeks to find answers to the following; to determine the level of awareness of environmental information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace, to determine the effect of access to information by environmental health workers on waste disposal and the use and subsequent dissemination of information for the hygienic lifestyle of the populace. It is from this basis that the research has been embarked on to investigate into the access, use and dissemination of information on solid waste management evident in Minna metropolis for hygienic lifestyle of dwellers in communities (near and far) surrounding solid waste disposal sites in Minna, Niger State. Municipal waste collection, disposal and management of waste and information dissemination and use of proper waste disposal practices were the main focus of this research. Survey and content analysis research methods would be adopted for this study. It is pertinent to conclude as follows: the access, use and dissemination of environmental information by health workers for hygienic lifestyle of the populace has great impact on the overall wellbeing of the people. However, there is still more work to be done by the environmental health workers. It was observed in the study there were inadequate and insufficient information dissemination by the environmental health workers on environmental issues in general and solid waste in particular. There is, therefore, the need for intensive enlightenment campaigns on solid waste management by environmental health workers for public behavioural change.

Keywords: Access, Use, Dissemination, Waste disposal, Environmental health information, Hygienic lifestyle, Environmental health workers.

Introduction

The rapid urbanization in major cities in the developing countries of Africa, has brought a serious environmental degradation. One of its most pressing matters is the management of solid, liquid and hazardous waste. The Management of solid waste is an enormous challenge in developing countries all over the world due to factors like: poverty, population explosion and urbanisation.

The management is also ineffective and under funded by governments (Adewale, 2011). A sustainable system in place for handling waste is an acute need within rural settlements. This is because many of these small towns are growing fast and increasing human populations will lead to

production of more waste. The generation of Municipal Solid Waste (MSW) has been rapid, while the capacity to collect and safely dispose of the material has been on a general decline and this has given rise to adopting open dumpsite as an approach to waste disposal.

Open dumpsite approach as solid waste disposal method is a primitive stage of solid waste management in many parts of the world. It is one of the most poorly rendered services by municipal authorities in developing countries as the systems applied are unscientific, outdated and in-efficient. Solid waste disposal sites are found both within and on the outskirts of developing urban cities. With increase in the global population and the rising demand for food and other essentials, there has been a rise in the amount of waste being generated daily by each household (Foday *et al.*, 2013).

This waste is ultimately thrown into municipal disposal sites and due to poor and ineffective management, the dumpsites turn to sources of environmental and health hazards to people living in the vicinity of such dumps. One of the main aspects of concern is the pollution caused to the earth; be it land, air and water. According to Nguyen *et al.* (2011) many cities in developing countries face serious environmental degradation and health risks due to the weakly developed municipal solid waste management system.

Several studies have been conducted in order to examine the health and environmental effects arising from waste dumps. Such studies showed that a link exists between the two (Aatamila *et al.*, 2010). The ever-increasing consumption of resources results in huge amounts of solid wastes from industrial and domestic activities, which pose significant threats to human health (Foday *et al.*, 2013).

However, the ills of inappropriately disposed municipal solid wastes are quite numerous to be mentioned. Health deterioration, accidents, flood occurrences, and environmental pressures are just a few of the negative effects. In many developing countries, solid waste disposal sites are found on the outskirts of urban areas. These areas become children's sources of contamination due to the incubation and proliferation of flies, mosquitoes, and rodents. They, in turn, are disease transmitters that affect population's health, which has its organic defences in a formative and creative state.

The said situation produces gastrointestinal, dermatological, respiratory, genetic, and several other kinds of infectious diseases (Foday *et al.*, 2013; Salam, 2010). Open dumpsites in developing urban cities involve indiscriminate disposal of waste. They are uncontrolled and therefore pose major health threats which affect the landscape of urban cities. Wastes that are not managed properly, especially solid waste from households and the community, are a serious health hazard and lead to the spread of infectious diseases.

It is also evident that unattended wastes lying around attract flies, rats, and other creatures that, in turn, spread diseases. Normally, it is the wet waste that decomposes and releases a bad odour. The bad odour affects the people settled next to the dumpsite, which shows that the dumpsites have serious effects to people settled around or next to them.

Open dumpsites are a major problem to the environment especially to the air that we inhale. Pollutants deposited on land usually enter the human body through the medium of contaminated crops, animals, food products, or water. Also, the dumpsite has smelly and unsightly conditions. These conditions are worse in the summer because of extreme temperatures, which speed up the rate of bacterial action on biodegradable organic material.

Disposal sites can also create health hazards for the neighbourhood (Foday *et al.*, 2013). In addition, dumpsites closer to residential areas are always feeding places for dogs and cats. These pets, together with rodents, carry diseases with them to nearby homesteads which will in turn will help to

spread diseases among the people living within the vicinity and this will affect the health and living condition of the people. There is no way development will thrive in an unhealthy condition.

Development is incomplete without sustainability. In this digital age, there is need for not only development but sustainability of the environment and the world in general. There is a massive need for heads to be put together towards this subject "sustainability". Sustainability is the continuous improvement of a present state without compromising the future state and for the betterment of the future generation. As a result of the need for sustainability, there comes the emergence of turning waste to wealth for the benefit of the population. Increasing population, domestic and industrial activities have led to increase in overall waste generation.

Therefore, organisations, communities and individuals have to find ways of managing these wastes in order to preserve and benefit from their habitat. Today, the economic value of waste is enormous. It has been managed to generate a lot of resources (clean and green power, revenues, employment and other forms of development) and its effective utilisation has led to greener environment and less polluted environment. For an economic value of waste to be generated, the government, organizations and individuals at a particular setting have to be educated massively on waste management.

This is important in order to have good knowledge about the economic importance of waste and cooperate towards acquiring the profitable value. The dumpsite is an ideal breeding ground for disease vectors such as rats and mosquitoes which present serious health issues to nearby household residents. Such unsanitary environment is a predisposing factor for the spread of diseases/infections like malaria, dengue fever, typhoid, tetanus, cholera, eczema and dysentery.

Recently the emphasis has been directed towards participatory approaches in solid waste management in most developing countries. This involves participation of the concerned actors at various levels to enhance co-operation. The level of access to information about solid waste management by urban dwellers is crucial for the success of these participatory initiatives. Awareness, access and use of relevant information about sustainable solid waste management is critical in ensuring waste reduction, reuse, recycling, and resource recovery. Studies have shown that information has helped to promote environmental behaviour.

Relevant information can help individuals to understand the interaction between resources (natural) and the environment. It is observed that greater knowledge of environmental principles, attitudes and theories of waste reduction through access and use of information can enhance individual's ability to participate in solid waste management. Information is an integral part of environmental management because it is central to every human activity and as such, would be used in coordinating the resources for a 'synergistic' approach to management of the environment. Therefore, environment information consists of all forms of information to keep the public enlightened about and aware of environmental issues and trends.

It is based on this reason that the role of information in solid waste management becomes imperative. These roles are to raise awareness in environmental issues and it can be used to promote responsible environmental behaviour, especially for solid waste management. In addition, it enables government and its agencies to know areas where solid waste management needs serious and urgent attention.

In the same vein, Macawile and Sia Su (2009) believe that a conscious effort through information dissemination is needed to "incorporate the interests of both the community leaders and the public in understanding their roles, relationships and contributions through their perceptions and attitudes

as all are recognised as important stakeholders in attaining a sustainable environmentally oriented effort”.

In essence, communication is one of the vital ways by which people in any given environment could relate. The essence of environment which deals with living together of all organisms in the environment is only possible and realisable through the use of communication.

It is from this basis that the research has been embarked on to investigate into the access, use and dissemination of information on solid waste management evident in Minna metropolis for hygienic lifestyle of dwellers in communities (near and far) surrounding solid waste disposal sites in Minna, Niger State. Municipal waste collection, disposal and management of waste and information dissemination and use of proper waste disposal practices were the main focus of this research.

Research Questions

1. What is the level of awareness of environmental information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna?
2. What are the effects of access to information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna?
3. What are the effects of access to information by environmental health workers on waste disposal and dissemination of information for the hygienic lifestyle of the populace of Minna?

Research Objectives

1. To determine awareness of environmental information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna.
2. To determine access to information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna.
3. To ascertain access to information by environmental health workers on waste disposal and dissemination of information for the hygienic lifestyle of the populace of Minna.

Literature Review

One of the greatest environmental challenges facing developing countries is the unhealthy disposal of solid waste which results from human activities of development and survival. It is a problem recognised by all nations at the 1992 Conference on Environment and Development, and regarded as a major barrier in the path towards sustainability of the environment (Ifegbesan, 2009).

After the United Nations Conference on Environment and Development held in Rio de Janeiro in January 1992, countries began to formally adopt Environmental Impact Assessment (EIA) policies, undated legislation, strategies, and guidelines that required information dissemination and public consultation on projects for which development permits were required (UNCED, 1992). Sound environmental management of waste was highlighted as a major environmental issue at the Rio Conference which re-affirmed the Declaration of the United Nations Conference on Human Environment that was adopted in Stockholm in June 1972. Principle 10 of the Rio Declaration states that: Environmental issues are best handled with the participation of all concerned citizens, on a relevant level.

On a national basis, each individual should have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States should facilitate and encourage public awareness and participation by making information widely available.

The above declaration laid the basis for the participatory planning of solid waste management (SWM). Poor waste management practices, in particular, the widespread dumping of wastes in bodies of water and uncontrolled dump sites aggravate the problems of general low sanitation levels across the African continent (United Nations Economic and Social Council, 2009).

Studies have shown that information has helped to promote environmental behaviour. Relevant information can help individuals to understand the interaction between resources (natural) and the environment. It is observed that greater knowledge of environmental principles, attitudes and theories of waste reduction through access and use of information can enhance individual's ability to participate in solid waste management. Information is an integral part of environmental management because it is central to every human activity and as such, would be used in coordinating the resources for a 'synergistic' approach to management of the environment.

Therefore, environment information consists of all forms of information to keep the public enlightened about and aware of environmental issues and trends. It is based on this reason that the role of information in solid waste management becomes imperative. These roles are to raise awareness in environmental issues and it can be used to promote responsible environmental behaviour, especially for solid waste management. In addition, it enables government and its agencies to know areas where solid waste management needs serious and urgent attention.

In the same vein, Macawile and Sia Su (2009) believe that a conscious effort through information dissemination is needed to "incorporate the interests of both the community leaders and the public in understanding their roles, relationships and contributions through their perceptions and attitudes as all are recognised as important stakeholders in attaining a sustainable environmentally oriented effort". In essence, communication is one of the vital ways by which people in any given environment could relate. The essence of environment which deals with living together of all organisms in the environment is only possible and realisable through the use of communication.

Information dissemination in this study goes beyond mere sharing of information, but as a way of influencing beliefs, views, perceptions and to induce behavioural or attitudinal change. The public holds the media in high esteem in terms of information and enlightenment. McQuail (2010) believes that whenever the media exert influence, they also cause change. Information therefore, can be a potent force to influence public perceptions on various issues of life.

Alabi (2010) noted that attitudes and predispositions are at work before and during exposure to information, and they in fact largely determine the use of information, how we interpret the contents and the effect which information has upon us. In other words, "messages received from the media affect our thoughts and beliefs formation as well as responses to attitude" (Alabi, 2010). Information through effective communication can therefore be used to influence people's dispositions for a friendly environment.

Although, mass communication messages may not change existing deep-rooted attitudes but may rather influence it. The ultimate goal is to activate public efforts towards behavioural change in environmental management. Behavioural change for environmental management may sometimes require consistent and systematic applications or activities to achieve desired goals. This may be achieved through public enlightenment campaign by environmental health workers. A campaign is the planning and coordination of series of consistent activities aimed at achieving a central objective.

In the same vein, McQuail (2010) defines a campaign as the planned attempt to influence public opinion, behaviour, attitudes and knowledge on behalf of some cause, person, institution or topic, using different media over a specific period of time. Public campaigns are usually directed towards socially approved goals. In this wise, environmental communication campaign entails the adoption of specific steps towards an environmental objective. The essence is to bring behavioural change, and inculcate an environmentally friendly attitude or culture in people.

Environmental campaigns could be pursued using different media like radio and television. Radio, for example, is believed to be the most effective, popular and credible medium for reaching a large and heterogeneous audience. It is relatively cheap, available and accessible. It can be powered by battery, requiring insignificant literacy level to comprehend. Radio remains the most potent and effective environmental communication tool for reaching a vast range of audience in developing nations like Nigeria. In the same development, television is believed to make the most impact on the audience. This is because of its audio-visual advantage.

It leaves a lasting impression in the minds of the audience. Television can reach diverse people simultaneously and provide opportunity for a message to be demonstrated in images or pictures. In a study of inhabitants' perception on domestic waste disposal in Ijebu Ode, Southwest Nigeria, Banjo, Adebambo and Dairo (2009) result showed that radio and television were the most available (93% and 96% respectively), the most easily accessed (70% and 73% respectively) and the most effective sources of environmental information (61% and 64% respectively).

Their study showed the effectiveness of the mass media, particularly the radio and television in creating awareness about public health and environmental issues. Radio and television are often associated with their wide geographical coverage and the relatively cheap cost of acquiring and using them in contrast to the print media (Banjo et al. 2009). Both media (radio and television) are effective environmental communication tools which could be used to raise public awareness and consciousness towards environmental concerns with a high degree of effectiveness.

Broadcast media enlightenment campaigns on solid waste management can come in any form of: radio jingles, television commercials (green advertising), main news bulletin, public service announcement, health programmes and so on. It is instructive to know that the degree to which the broadcast media devote air time to environmental news also affect people's attitudes towards the environment. As it were, heavy dependency and exposure to the media tend to shape people's beliefs and perceptions about various issues of life. Aptly put, the degree of dependency on the media is a key variable that help to explain why audience's beliefs, feelings or behaviours are altered. In this wise, environmental news is a potent force for responsible environmental behaviour.

Individual exposure to a greater amount of environmental news is more likely to show concern with environmental management. Taken from above, much of contemporary environmental studies are predicated on the belief that human and non-human welfare are threatened by a growing array of human-induced environmental problems namely pollution, over-population, consumption of non-renewable biodiversity loss, ozone depletion, greenhouse warming and others. It is universally agreed that human behaviour has been and will continue to be, of central importance in identifying, understanding and dealing with such problems.

Therefore, it can be taken that environmental behaviour is affected by the level of public awareness created by the mass media on environmental issues. Most researchers only focus on the best practices to adopt for proper waste disposal without adequately looking at the perspective of proper information dissemination on the way to better practice effective waste disposal. This is the gap this research intends to fill. This research therefore will address the access, use and dissemination of

information on waste disposal by environmental health workers for hygienic lifestyle of the populace.

Methodology

Survey and content analysis research methods was be adopted for this study. Survey research describes variables like attitudes, opinion, values, beliefs, which leads to gathering of information about a group of people. Also, survey method allows the gathering of data from a large target population through the instrumentality of questionnaire and personal interviews.

The survey method enabled the researcher to measure respondents' opinions, feelings and attitudes to questions asked through a questionnaire. Content analysis is a study of printed materials in a systematic and quantitative way for the purpose of measuring variables. The results obtained from the questionnaire, interviews and programmes schedule was analysed as part of discussion of findings.

The total population of the study comprises 150 environmental health workers selected from four (4) departments that are made up of: waste management department, environmental monitoring, conservation department and environmental health. The researcher adopted the entire population of the environmental health workers in Minna, Niger State. This is called total or complete enumeration or census. This is because the population size is manageable. Popoola (2011) maintained that a researcher can study or adopt the entire population when the population size is not too large.

Findings

1. To determine the awareness of environmental information channels by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna.

Table 1: Awareness of environmental information channels by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna.

Items	Strongly Agree (5)	Agree (4)	Disagree (3)	Strongly disagree (2)	Undecided (1)	\bar{X}
Information media carry out reports on solid waste problems?	30	25	27	28	35	3.32
There have been regular enlightenment campaigns on solid waste management by information channels?	29	28	31	32	25	2.94
Health workers been influenced to do more on solid waste management in your area as a result of broadcast media sensitizations?	28	29	34	27	26	2.89
The extent of public awareness sensitizations by the broadcast media on solid waste has been satisfactory?	30	26	24	26	32	3.14
Attitudes of inhabitants to solid waste disposal practice in your area have been positive/good?	24	26	28	30	31	2.30
Weighted Mean						2.91

From the table, where (Pearson $\chi^2 = 1.7853$, df 12, asymp. sig = .000), and since (.000 $p < 0.05$), it is revealed and concluded that all the items listed in the table shows awareness of environmental information channels by environmental health workers on waste disposal and has influenced the use of information for the hygienic lifestyle of the populace of Minna.

2. To determine access to information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna.

Table 2: Access to information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna

Items	Strongly Agree (5)	Agree (4)	Disagree (3)	Strongly disagree (2)	Undecided (1)	\bar{X}
Documentation, record keeping and archival processes affects me in accessing environmental health information	35	25	22	23	35	3.30
Information searching skill affects me in accessing environmental information	30	31	28	25	20	2.74
Inadequate ICT infrastructure does not affect me in accessing environmental health information	28	29	34	27	26	2.89
Language barrier affects me in accessing environmental information	33	36	26	27	20	3.04
Poor ICT skills affects me in accessing environmental health information	24	26	28	30	31	2.30
Weighted Mean						2.82

The table reveals that, where (Pearson $\chi^2 = 64.814$, df 8, asymp. sig = .000), and since .000 $p < 0.05$, all the items listed on the table influenced the access to information by environmental health workers on waste disposal and the use of information for the hygienic lifestyle of the populace of Minna.

Based on the result, it is safe to say that the use of environmental health information has improved the hygienic lifestyle of the populace in Minna and this has in turn improved the overall quality of the environment.

From the result, it is clear that the access and use of environmental information has helped to control waste disposal method which has led to reduce the odour emanating from surroundings previously having dumpsites. This has indeed improved the hygienic lifestyle of the populace in Minna.

3. To ascertain access to information by environmental health workers on waste disposal and dissemination of information for the hygienic lifestyle of the populace of Minna.

Table 3: Access to information by environmental health workers on waste disposal and dissemination of information for the hygienic lifestyle of the populace of Minna

Items	Strongly Agree	Disagree	Strongly Undecided			
	Agree (5)	(4)	(3) disagree (2)	(1)	\bar{X}	
It has greatly impacted the environment as a breeding site for disease vectors	30	25	27	23	35	3.10
It has greatly decreased the outbreak of diseases among the populace	35	28	30	25	20	2.74
It has greatly enhanced the quality of the environment	28	29	34	27	26	2.89
It has negatively impacted the rise of malaria among the populace	33	36	26	27	20	3.04
It has positively impacted the reduction of cholera among the populace	29	26	25	31	35	2.80
Weighted Mean						2.98

From the table, where (Pearson $\chi^2 = 64.814$, df 8, asymp. sig = .000), and since $.000 p < 0.05$, it is observed that access to information by environmental health workers on waste disposal and dissemination of information for the hygienic lifestyle of the populace of Minna has been greatly impacted by the items listed in the table.

Based on the result, it is observed that the access and dissemination of environmental health information has greatly decreased the outbreak of diseases among the populace which has positively impacted the reduction of cholera among the populace in Minna.

Conclusion

Solid waste management is one of the greatest environmental challenges facing us in this country, Nigeria. In order to inculcate positive attitude towards inhabitants, there was need to adopt enlightenment campaigns by environmental health workers. It is pertinent to conclude as follows: the access, use and dissemination of environmental information by health workers for hygienic lifestyle of the populace has great impact on the overall wellbeing of the people.

However, there is still more work to be done by the environmental health workers. It was observed in the study there were inadequate and insufficient information dissemination by the environmental health workers on environmental issues in general and solid waste in particular. Attitudes towards solid waste management were poor and insufficient for sustainable environmental development.

This is because many Nigerians still see the management of solid waste as largely the responsibilities of the local authorities. There is, therefore, the need for intensive enlightenment campaigns on solid waste management by environmental health workers for public behavioural change.

Recommendations

1. There should be regular campaigns by environmental health workers on the environment are essential for environmental management. This is because they help to shape social norms and values, influence people's decision in ways that promote a more environmentally sustainable society.

2. The government with private firms could go into partnership in converting wastes into useful and marketable value.
3. Solid waste management policies and enforcement of sanitation laws in various states should be energized, and various environmental organizations should do more until the dream of a clean environment in Nigeria becomes a reality.

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