

Environmental Waste Disposal Methods among Childbearing Mothers in Anambra State, Nigeria

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Abstract

Environmental sanitation creates and maintains condition in the environment to promote health and prevent illness. The environment contains elements that are essential to life and for the maintenance of good health as well as potentials for hazards. This calls for proper administration of environmental sanitation disposal methods amongst childbearing mothers in Anambra State, Nigeria and the analysis of its implications for adult education. Four Research questions and two null hypotheses guided the study. The population for the study was 40,350 registered childbearing mothers, in Anambra State, Nigeria out of which 4035 was used for the study. The instrument used was 16 items questionnaire, arranged into four clusters. Mean and standard deviation were used in analyzing the research questions. The following major findings emerged: incineration refuse disposal method is mostly used by childbearing mothers in Anambra State, Nigeria; waste management is the major accepted components of environmental sanitation disposal method used by childbearing mothers in Anambra State, Nigeria. The major recommendations include that the local government through the government agents and adult educators should help the childbearing mothers to ensure that open dumping refuse should be in selected sites to avoid hazards.

Keywords: Environmental Sanitation, Adult Educators, Childbearing Mothers, Disposal Methods, Administration.

INTRODUCTION

Housing is one of the most basic necessities of life and serves as a great source of happiness. WHO (2004) describes the requirement for a healthy residential environment in relation to proper setting and construction as that which meets fundamental physiological, psychological and sanitary requirements. Good house should minimize physical and biological hazards in the environment and should promote the health of the inhabitants; poor setting is the most leading factors of slums. Dureke (1998) states that slums do not just happen rather they represent a pattern of life as determined by man. He gave reasons for the existence of filthy environment and over congestion of residential houses as inadequate government policy in housing and the intricacies involved in acquiring land in urban cities. The effect is over-crowding,

inadequate water supply, accumulation of refuse and poor drainage system. The above ill conditions perpetuate poor health. Poor housing permits poor health. Some of these have proved beneficial as well as hazardous to man, especially childbearing mothers in Anambra State, Nigeria (Ebang, 2002). Some attitudes towards environment are negative and are contrary to the concept of sustainable development, which environmental protection is inextricably linked to and the quality of present and future life rest a meeting basic needs, without destroying the environment which is central to the sustenance of childbearing mothers (Bernard, 2008). Environmental Education helps to develop an ethical awareness of all forms of life which humans share on this planet and impose limits on human's exploitation of other forms of life. This is in line with one of the goals of environmental education as stated by UNESCO (1986), which is:

“To develop a world population that is aware of and concerned about the environment and its associated problems, and which has the knowledge, skills, attitudes, motivation and commitment to work individually and collectively towards solutions of current problems and prevention of new ones”.

The Australian Association for Environmental Education (1993) also defined environmental education as:

“An across-the-curriculum approach to learning which helps individual and groups to understand the environment, with ultimate aim of developing, caring and committed attitudes that will foster the desire and ability to act responsibly in the environment. Environmental Education is concerned not only with knowledge, but also with feelings, attitudes, skills and social action. Inherent in this definition is developing an individual, through planned Adult Educational programme to be aware and competent enough to contribute, without being prompted, towards the

building of a more equitable and sustainable future”.

Environmental degradation is indeed a serious threat to most childbearing mothers in developing countries, especially in Anambra State, Nigeria. It adversely affects the state of health of the populace and hinders and undermines development. Thus, it is deal to tame the environment and this could be an achievement through environmental sanitation disposal method. The objective of environmental sanitation disposal method, according to Lucus and Gilles (1999), is to create health and prevent diseases. Man’s environment contains potential hazards, which, if not controlled, could harm life in the same environment. Thus environmental sanitation disposal methods are supposed to promote health, improve the quality of the environment and empower childbearing mothers, especially those in Anambra State, Nigeria.

Adult Education is the instruction that is not obligatory and structured and is learned outside the context of a formal school. This term ‘Adult Education’ is often used as any intentional and systematic educational enterprise, usually outside of traditional schooling in which content is adapted to the unique needs of the individuals in order to maximize learning. It is more of learner-centred than most formal education. Learners can leave anything they are not motivated to learn. The provision of environmental sanitation disposal method’s a key intervention. Ill-health dominates a life of childbearing mothers without dignity. Childbearing mothers by simply having access to the environmental sanitation disposal method increase health well-being and economic productivity. However, in view of delay and lack of modalities in the provision of environmental sanitation disposal method among childbearing mothers in Anambra State, Nigeria where the majority of local government Areas live without any systematic ways of waste disposal. This indiscriminate mode of settlement of the local government Areas has not only brought about increase in population but has led to insufficient environmental sanitation disposal methods and increases generation of both solid and liquid waste (Obioha, 1998).

In the absence of effective environmental sanitation disposal methods, some childbearing mothers and communities rely on a natural process. That is defecating in open fields or on surface water. In the option, human waste is directly disposed of off into the river canals channels which causes a severe environmental health problem. Efforts to improve the standard of living and health conditions of childbearing mothers in Anambra State, Nigeria have been threatened by inadequate environmental methods. In this area, increased congestion of industrial expansion and lack of environmental sanitation disposal method has led to cases of outbreak of diseases, which adversely affects and hampers development (Oditte, 2001). For instance, there was a serious outbreak of gastroenteritis in Anambra State in the year 2003, in which many people died. Moreover, several reports of epidemiology, monitoring a devaluation unit of health department in Anambra State, Nigeria shows various cases of outbreak of some chicken-pox, malaria, measles, gastroenterocolis and typhoid among childbearing mothers.

This is as a result of lack of environmental sanitation disposal method (AdeBan, 2004).

World Health Organization (1998) defines environmental sanitation disposal as the control of all those factors in the human environment, which exercise a deleterious effect on childbearing mothers’ physic development, health and survival. From this definition, it is very clear that humans, especially childbearing mothers, through different sanitation disposal methods to tame their environment through all those acts and exercises that bring down all the negative impacts of human activities in their immediate environment. According to Onuah (2001), environmental sanitation disposal methods among childbearing mothers in Anambra State, Nigeria, includes sanitary landfill, controlled tipping, incineration, composing and open dumping.

Sanitary landfill implies the controlled filling of compacted layers of solid waste into pre-prepared. Disposal of waste by childbearing mothers by landfill is the most traditional method of waste disposal and it remains a common practice among childbearing mothers. Poorly managed landfills can create a number of adverse environmental impacts including attraction of vermin and soluble pollutants, which can leach into and pollute ground water. As a result, solid waste disposal in these areas has become more expensive as materials must be transported further away for disposal (Hopkin, 2002). It is based on this that the researchers investigated the administration of environmental sanitation disposal method among childbearing mothers in Anambra State, Nigeria and the Implications for Adult Education.

STATEMENT OF THE PROBLEM

In Anambra State Nigeria, there is a serious problem of using appropriate environmental sanitation disposal methods very well. For instance, so many childbearing mothers misuse incineration method; this creates toxic gas as such which can harm local population and pollute groundwater. Modern well-run incineration takes elaborate measures to reduce the amount of toxic products. But the concern has increased in recent years about the level of toxic that is released when burning mixed waste. Also, poorly managed landfill methods by childbearing mothers in Anambra State, Nigeria creates a number of adverse environmental problems, including world blown litter, attracts vermin and leach into and pollute ground water. Another product of landfills containing waste in landfill gas, mostly composed of methane and carbon dioxide which causes problem to the childbearing mothers. Majority of childbearing mothers have failed to handle composting method of disposing refuse. They have refused to handle different composting process methods, thereby composting materials that cannot decompose. It is based on all these problems that the researchers investigated the administration of environmental sanitation disposed methods among childbearing mothers in Anambra State, Nigeria and its implications for Adult Education.

THEORETICAL REVIEW

Z- Theory of Administration

Z-Theory posits that the successful management of school just like the operation of industries involves long term, development of personnel, trust between workers, participative decision making and shared philosophy. It was propounded by William Ouchi in 1981. According to the theory z, a participative approach to decision making yields more creative decision and more effective implementation than individual decision making. It “is one of the mechanisms that provide for the broad discrimination of information and of values within the organization, and it also serves the symbolic role of signalling in an unmistakable way the cooperative intent of the firm” (Ouchi, 1981). Ouchi has suggested a series of steps for implementing Theory Z as a management scheme. These steps, reformulated to fit the school situation include that the administrative staff shall:

- Study and debate the Theory Z
- Identify the school’s current actual management system
- Define the characteristics of Theory Z to which he or she can be committed.
- Work with teachers to develop a set of procedures for implementing the characteristics identified in step 3.
- Work with teachers to develop the interpersonal skills needed to implement Theory Z.
- Conduct a short-term test of the new management procedures and gather the feedback on how they work.
- Involve the school board and teachers’ association in their goals relative to Theory Z.
- Permit the development of holistic relationships in which those concerned with the school work together to improve it (Ouchi, 1981).

This theory is related to this study since its focus is wholly on efficient management and administration of organization such as schools adult education programme and society at large.

PURPOSE OF THE STUDY

The main purpose of this study is to investigate the environmental sanitation disposal methods used among childbearing mothers in Anambra State, Nigeria.

Specifically, the study investigated:

1. the environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria;
2. the components of environmental sanitation disposal method of childbearing mothers in Anambra State, Nigeria;
3. the problems facing environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria; and
4. the solutions to the problems of environmental sanitation disposal method of childbearing mothers in Anambra State, Nigeria.

RESEARCH QUESTIONS

The following research questions guided this study:

1. What are the environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria?
2. What are the components of environmental sanitation disposal method of childbearing mothers in Anambra State, Nigeria?
3. What are the problems facing environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria?
4. What are some of the solutions to the problems of environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria?

Hypothesis one: There is no significant difference between the mean ratings of the urban and rural women on the environmental sanitation disposal methods of childbearing mothers in Anambra state.

Hypothesis two: There is no significant difference between the mean ratings of the urban and rural women on the problems of environmental sanitation disposal methods of childbearing mothers in Anambra state.

RESEARCH METHOD

The researchers described the procedure that was adopted in the study. It includes the design of the study, area of the study, the population of the study, sample and sampling techniques, the instrument for data collection, validation of the instrument, the reliability of the instrument, method of data collection and method of data analysis. This study adopted a descriptive survey research design. The descriptive survey aims at collecting data and describing in a systematic manner, the characteristic features or facts about a given population (Nworgu, 2015). This type of survey design was chosen because it would help to elicit responses on the environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria. This study was conducted in Anambra State, Nigeria. Anambra State is one of the thirty-six states of Nigeria. It has twenty-one local government areas that make up the State. The people of this area share the same religious belief, customs and values. They are also from the same Igbos tribe in southeastern Nigeria. The population of this study comprised all childbearing mothers resident in Anambra State, Nigeria. According to the report from the Chief Administrative Officer in Anambra State, Department of Health (2016), there are 40350 registered childbearing mothers in Anambra State Nigeria, out of which 4035 which represents 10% of the population were sampled and used for the study.

The instrument for this study is questionnaire. A structured questionnaire was used for data collection in this study. The instrument was used to obtain current and relevant information for the study. The questionnaire was designed by the researcher. The questionnaire was in two parts. Part A

sought to collect personal data on the respondents. Part B has 16 items that were arranged in 4 clusters to elicit information from childbearing mothers on the environmental sanitation disposal methods of mothers in Anambra State, Nigeria. The items were obtained from relevant literature on environmental sanitation disposal method on childbearing mothers. It was structured on a modified four-point like the type scale of Strongly Agree (SA), Agree (A), Disagree (D), and Strongly Disagree Area (SD), was used. The initial draft of the instrument was subjected to face validation and construct validation. The face validation was done by two specialists in environmental education and two in measurement and evaluation. They were requested to rate the relevance, adequacy and comprehensiveness of the items. Their expert observation, comments and suggestion, were incorporated in the modification of the items consisting of 16 items. This was done to ensure that the instrument measures what it is supposed to measure. In order to determine the reliability of the instrument, the validated instrument was administered to 30 childbearing mothers in Enugu state, Nigeria outside the target group. Based on the result obtained from the final trail testing, the internal consistency reliability coefficient using Cronbach Alpha Method was established for each of the sub-section of part B of the instrument. The rationale for this trail testing is because the items are not dichotomously scored. The reliability indices for the items are the various sections and for all the items in the instrument are 0.74, 0.65, 0.70 and 0.15 and for all the items in the instrument are 0.54. Questionnaires were administered to 4035 childbearing mothers in Anambra State, Nigeria on various days of their meeting at the health clinic. The researchers administered the questionnaire to them personally with aid of research assistants. The essence of administering the questionnaire personally to them is to make clarifications on items whenever the need arose. This reduced likely errors that could have occurred in the process of filling the responses to items on the instrument. Based on this 99% return rate of the instrument was achieved. Mean of standard deviation were used to analyse the four research questions. Any range above 2.50 is agreed on, while any range below 2.50 is disagreed on. t-test was used to test the two null hypotheses that was accepted at 0.05 level of significance.

RESULTS

Research Question 1

What are the environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria?

Table 2: Mean rating (\bar{x}) and standard deviation (s) of environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria.

S/N	Items on Environmental sanitation	\bar{x}	S	Interpretation
1.	Disposal methods of childbearing mothers	2.9	1.12	Agree
2.	It has to do with composting refuse	2.8	1.08	Agree

S/N	Items on Environmental sanitation disposal method	\bar{x}	S	Interpretation
3.	It touches open burning disposal method	2.6	1.01	Agree
4.	It involves incineration refuse disposal method	3.2	0.96	Agree

From the Table above, it shows that the incineration refuse disposal method ranked the first position with a mean score of 3.2. Open dumping refuse method ranked second with a mean score of 2.9, composting refuse method scored 2.8 and ranked third, while open burning refuse method ranked fourth with a mean score of 2.6. Therefore, from the above analysis of the data, it is observed that incineration refuse disposal method is mostly used by childbearing mothers in Anambra State, Nigeria.

Research Question 2

What are the components of environmental sanitation disposed method of childbearing mothers in Anambra State, Nigeria?

Table 3: Mean rating (\bar{x}) and standard deviation (s) of components of environmental sanitation disposal method of childbearing mothers in Anambra State, Nigeria.

S/N	Items on Components of Environmental Sanitation Disposal Method of Childbearing	\bar{x}	S	Interpretation
5.	It involves quality water supply	3.2	1.31	Agree
6.	It involves quality control of waste	3.0	1.11	Agree
7.	It includes insect control	2.5	1.20	Agree
8.	It involves house quality control	2.8	1.06	Agree

From Table 3 above, it shows that waste management ranked the first position with a mean score of 3.2. Also, quality water supply ranked the second position with a mean score of 3.0, house quality control ranked the fourth position with a mean score of 2.5. It is evident that waste management is the major selected components of environmental sanitation disposal method used by the childbearing methods in Anambra State, Nigeria.

Research Question 3

What are the problems facing environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria?

Table 4: Mean rating (\bar{x}) and standard deviation (s) disposal methods of childbearing mothers in Anambra State, Nigeria.

S/N	Items of Problems Facing Environmental Sanitation Disposal Method of Childbearing	\bar{x}	S	Interpretation
9.	Inadequate funding	3.2	1.35	Agree
10.	Over population	3.4	1.33	Agree
11.	Ignorance	2.7	1.20	Agree
12.	Bad road network	2.9	1.02	Agree

The table 4 above shows that inadequate funding ranked first in the problems facing environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria with a mean score of 3.4, showing that they agreed. While overpopulation ranked second with the mean score of 3.2, bad road network ranked third with a mean score of 2.9 and Ignorance with the mean score of 2.7 showing that they equally agreed with the items on the problems facing environmental sanitation disposal method in Anambra State, Nigeria.

Research Question 4

What are some of the solutions to the problems of environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria?

Table 5: Mean rating (\bar{x}) and standard deviation (s) on solutions to the problems of environmental sanitation disposal methods of childbearing mothers in Anambra State, Nigeria

S/N	Items on some solutions to problems Facing Environmental Sanitation Disposal Method of Childbearing	\bar{x}	S	Interpretation
13.	It involves elimination of dangerous substances	2.9		Agree
14.	It involves community education	2.8		Agree
15.	It involves services that promote health	2.8		Agree
16.	It means the maintenance of the environment	2.6		Agree

From table 5 above, it shows that all the items in the cluster have mean scores of 2.5 and above. Items 13, 14, 15 and 16 have corresponding mean scores of 2.9, 2.8, 2.8 and 2.6 respectively showing that they agreed on the solutions to the problems of environmental sanitation disposal methods of childbearing mothers in Anambra State of Nigeria.

Hypothesis one: There is no significant difference between the mean ratings of the urban and rural women on the environmental sanitation disposal methods of childbearing mothers in Anambra state.

Table 6: t-test Analysis of Urban and Rural Women on the environmental sanitation disposal methods of childbearing mothers in Anambra state

Group	N	\bar{x}	SD	t-cal	t-critical value	Level of sign	of	Decision
Urban Women	1071	3.1	1.04	1.17	1.96	0.05	4033	Accept
Rural women	2964	3.4						
		1						
Total	4035							

Table 6: presents the t-test statistical analysis of the difference between the mean ratings of urban and rural women on the environmental sanitation disposal methods of childbearing mothers. The t- calculated value is 1.17 at 4033 degrees of freedom (df) and 0.05 level of significance. Since the calculated value of 1.17 is less than the table value of 1.96, the first null hypothesis of this study is accepted. It can, therefore, be concluded that there is no significant difference in mean rating of urban and rural women on the environmental sanitation disposal methods.

Hypothesis two: There is no significant difference between the mean ratings of the urban and rural women on the problems of environmental sanitation disposal methods of childbearing mothers in Anambra state.

Table 7: t-test Analyses of the Urban and Rural Women on the Problems of environmental sanitation disposal methods of childbearing mothers in Anambra state

Group	N	\bar{x}	SD	t-cal	t-critical value	Level of sign	of	Decision
Urban omen	1071	3.4	0.59	.57	1.96	0.05	4033	Accept
Rural women	2964	3.72						
Total	4035							

Table 7: presents the t-test statistical analysis of the difference between the urban and rural women on the problems of environmental sanitation disposal methods of childbearing mothers in Anambra state. The t-calculated value of 0.57 on 4033 degrees of freedom and 0.05 level of significance. Since the calculated value of 0.57 is less than the table value of 1.96, the second null hypothesis is accepted. It could be concluded that there is no significant difference between the mean scores of the urban and rural women on problems of environmental sanitation disposal methods in Anambra state.

DISCUSSION OF THE FINDINGS

The study revealed that incineration method of refuse disposal is the major environmental sanitation disposal method used among childbearing mothers in Anambra State of Nigeria. It had the highest responses with a mean score of 3.2. This finding is expected, because it agreed with the report of Yau (2003), that incineration method is the most suitable and protective for human use. Incineration method is carried out

both on small scale and large scale in every environment. It is recognized as a practical method of disposal of hazardous waste materials, such as faeces and biological medical waste (Okoli, 2007). The study showed that waste management is the major and best component of environment sanitation disposal method by the childbearing mothers in Anambra State of Nigeria. This is supported by Edmond (2009) who said that waste management sanitation disposal method helps to avoid pollution with appropriate control. This is because, during the composting processes, bacteria and other micro-organism are converted into humus, which is an important component for fertile soil (Nwafor, 2001). This can be very rich in nutrients and is used in gardens, landscaping, horticulture and agriculture. The composite itself is beneficial to the land, in many ways including as soil-conditioners, fertilizer, additional to vital humus or humus acid aid as a natural pesticide for soil. In ecosystem, composite is useful for erosion control and landfill cover.

The study further revealed that majority of the respondents as agreed that inadequate funding is the major problem that affects refuse environmental sanitation disposal method among childbearing mother in Anambra State of Nigeria, with a mean score of 3.4. These findings are in line with the opinion of Olu (2002), that in most communities (of which Anambra state is inclusive), over-population, beliefs, attitudes and norms hinder appropriate environmental sanitation and disposal method of refuse. The implication is that the objective for which the study is set up will not be fully accomplished. This is because the problem will continue to hinder the improvement of childbearing mothers in terms of proper refuse disposal. Ogun (2003) is of the view that people (even childbearing mothers) who live close to dump sites are in danger of contracting diseases associated with dumps because the majority of children living within dump sites were disproportionately affected by anaemia, skin infection, asthma and other respiratory diseases. These conditions are associated with high level of toxins at the dumpsites. With adequate funding, it will be possible for health officers to do their work adequately.

Majority of the respondents were of the view that when public health is well arranged and dangerous substances eliminated, it will go a long way in solving most environmental sanitation disposal problems. This is supported by Wilson (2005), who revealed that when people (even childbearing mothers) use bare-hands and when they wear no protective clothing, they can easily contract infections. This lack of protective clothing and equipment put them in direct contact with hazardous waste such that might have become saturated with toxic materials as well as may contain residue of chemical pesticides. Man produces wastes of various types of product of life due to growing level of industrial activities and rapid population growth in both rural and urban Area. These present significant challenges will present a timely opportunity for the application of environmental and conservation of management practices by childbearing mothers. Ukaegbu (1998) suggested that one of the best ways of solving most of the problems of environmental sanitation disposal method of childbearing mothers is through a planned system of effective control of production, storage, collection,

transportation process and disposal or utilization of waste in sanitary aesthetically acceptable on economical manner.

CONCLUSION

Refuse disposal is one of the most challenging jobs especially for childbearing mothers. In the past when consumption of products was very low, trash was carried to the outskirts of the cities and discarded in open place. But that can no longer be done now. Nevertheless, a lot of childbearing mothers are trying to become enlightened on how to manage their refuse. This awareness of success is an effort of government, adult educators and non-governmental organizations that have had the time to organize seminars, workshops and conferences for various categories of childbearing mothers in Anambra State, Nigeria. Moreover, adult educators are expected to educate the childbearing mothers on how to manage their refuse.

RECOMMENDATIONS

1. The local government through various government agencies and adult educators should help the childbearing mothers to ensure that open dumping refuse should be in a selected site to avoid hazards.
2. Health officers with adult educators should make sure that composting of refuse disposal method among childbearing mothers involves biological decomposition of organic materials.
3. Environmental agencies and adult educators should provide refuse collection facilities in order to avoid indiscriminate refuse dump.
4. The local government through the government agencies and adult educators should provide sustainable land for burning of refuse to avoid air pollution.
5. Health officers with their knowledge of adult education should organize awareness programme to educate the childbearing mothers in Anambra State, Nigeria on how to generate funds in order to avert factors that hinder effective disposal of refuse.
6. Non-governmental organizations with the aid of adult educators should help the childbearing mothers understand hazards associated with ineffective disposal of refuse.

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