

## HOUSEHOLD WASTE MANAGEMENT PRACTICES AMONG RESIDENTS OF EWET HOUSING ESTATE, UYO, NIGERIA

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### ABSTRACT

*The danger that indiscriminate waste disposal poses to both human and the environment, has made its management a serious concern all over the world. This study investigated waste management practices among residents of Ewet Housing Estate, Uyo, Nigeria. The study adopted a survey research design. Three objectives and three research questions guided the study. The population for the study comprised of all the 1, 242 households in the Estate. Systematic random sampling technique was used to draw 180 respondents for the study. A structured questionnaire was used to elicit information from the respondents. The instrument was face validated and the reliability coefficient of 0.87 was obtained. Data collected was analyzed using percentages, mean and standard deviation and the results were presented on tables and chart. Findings revealed that different waste storage containers such as plastic containers with lid (3.38%), metal waste bins (2.82) amongst others were used for household waste collection; frequency of household waste disposal ranged from daily (22.8) to monthly (10.6) amongst others; while respondents used various methods such as land filling/burying (3.44), hog feeding (2.76) and others to dispose their household wastes. Based on the findings, the researchers recommend amongst others that households should always adopt the neatest/safest methods of waste disposal for environmental sustainability and aesthetic values.*

**Keywords:** *Household, Waste, Management Practices, Residents, EHE*

### INTRODUCTION

Household waste has been a natural phenomenal consequence of human endeavours and has been increasing proportionately with the change in lifestyles and food habits within a household. It is not possible for family members to live without generating waste as they engage in different activities within the household that naturally result in waste generation, hence the need for its proper management.

Lewis (2007) regards waste as something that is not or no longer useful and is to be thrown away or disposed. Again waste is a term that is used to denote any item or object that is no longer suitable for use in the owner's/user's consideration. Generally, wastes are products or byproducts of certain processes or remnant of useful items that are considered as no longer useful. Once waste is generated, it has to be collected and disposed or recycled in order for it not to constitute nuisance and health problems or other inconveniences to humans, animals and the environment

to which the household exist. In the context of this study, waste is any item or object that is no longer useful in its original form and is to be disposed of by the household. According to Enete (2010) wherever households exist, they generate a steady outpouring of organic waste from food preparation, washing, cleaning of the household environment, defecation from their pets and other activities. Unfortunately, the bulk of these wastes are dumped wherever is convenient for most households. Household wastes are the wastes generated in the households as a result of activities within the household and can be organic/bio-degradable and inorganic/non-degradable. Broadly, wastes come in three forms viz solid, liquid and gaseous. Solid wastes which consist of refuse, garbage, rubbish, etc. may either be degradable or non-degradable, combustible or non-combustible examples include food remnants, broken bottles/glasses, plastics, paper, cloth and others. Liquid waste also known as effluent comes from dirty water from bathroom, toilet (water closet), kitchen and sometimes rain water collected by gutters and condemned/used oils, and others, while gaseous wastes are substances carried in the air which move without inhibition into any available space which may or may not be coloured. They include smoke from firewood, fumes from family cars/generators, smoke from cigarette etc. Bio-degradable waste items disintegrate with the passage of time even when left on their own, but apart from creating health hazards, the rate of disintegration may be slower than the rate of generation, thereby making the environment aesthetically unappealing. Moreover, owing to the multidimensional nature of household wastes and its attendant negative effects on humans and the environment, its management is highly crucial and requires concerted effort. Unfortunately, waste management has been one of the major challenges facing households in Nigeria which has occupied the attention of the Federal, State and Local Government Authorities for many years.

According to researchers, household waste management practices are the habitual ways used by households to dispose the waste generated within households and include various methods like incineration, disposing into landfills, open dumping, amongst others (Adogu, Uwakwe, Egenti, Okwoha & Nkwocha 2015; Idika-Umeh & Anyakoha, 2016). Waste management practices which essentially covers the collection, processing and disposal of waste items is approached in different ways by different countries, communities and areas with the same goal of maintaining sustainable environment, which is conducive for healthy living for humans and animals alike.

Despite the efforts by government and private waste managers, indiscriminate waste disposal has remained the major environmental problem in most developed and developing countries. Generally, in Nigerian cities and Uyo in particular, it is common to see refuse of all sorts ranging from plastic water bottles, cellophane bags, paper etc. littering the neighbourhoods, gutters and roadsides in spite of the efforts by government and private waste management companies at collecting them and waste receptacle strategically positioned in the streets of the state. The practice of improper waste disposal has resulted in unsanitary surroundings that eventually attract disease-carrying insects and rodents, which according to Obionu (2011) has led to various infections and infestations which include fly transmitted diseases like myiasis, diarrhoea, typhoid, cholera; rodent transmitted diseases like Lassa fever, plague, leptospirosis,

Maurine typhus; and mosquito borne diseases like malaria, yellow fever, filariasis and dengue haemorrhagic fever and others.

Ewet Housing Estate (EHE) as one of the highbrow residential estates in Akwa Ibom State that houses prominent members of the society, has witnessed a sporadic growth both in population and infrastructural development, but regrettably these sights of indiscriminate waste disposal abound thereby leaving a supposed serene environment in a sorry state. It is against this background that this study sought to investigate household waste management practices among residents of EHE, Uyo.

### RESEARCH QUESTIONS

The following research questions were raised to guide the study:

- i. What are the waste collection and storage containers used by residents of EHE, Uyo, Akwa Ibom State?
- ii. What is the frequency of household waste disposal among residents in the study area?
- iii. What are the methods of household waste disposal adopted by residents in the study area?

### PURPOSE OF THE STUDY

The main purpose of the study was to investigate household waste management practices among residents of EHE, Uyo. Specifically, the study determined;

- i. Waste collection and storage containers used by residents of EHE, Uyo , Akwa Ibom State
- ii. Frequency of household waste disposal among residents in the study area
- iii. Methods of household waste disposal adopted by residents in the study area.

### METHODOLOGY

**Design of the study:** The study adopted a survey research design, where the researcher did not influence the variables of the study but used a structured questionnaire and an oral interview schedule to obtain information from a representative sample (Shaughnessy, 2011).

**Area of the study:** The study was carried out in Uyo Local Government Area of Akwa Ibom State. Uyo is one of the Local Government Areas in Akwa Ibom State and also doubles as the State capital. Uyo Local Government is located on latitude 5' 32<sup>0</sup>N and longitude 7' 56<sup>0</sup> E. It is bounded by Abak, Itu, Uruan, Ibesikpo-Asutan, Nsit Atai and Etinan Local Government Areas. As a fast growing city, Uyo is a home to many notable housing districts, located in various parts of the city and other residential areas. Prominent residential areas in Uyo are: Shelter Afrique, Akwa Ima Estate, Federal Housing Estate, and Ewet Housing Estate. Persons who reside in these residential areas generate and dispose of solid and liquid waste materials, this necessitated the study in the area. However, Ewet Housing Estate was purposively selected for the study because of indiscriminate waste disposal practices observed within the estate.

**Population for the study:** The population for the study was made up of all the 1,242 housing units in EHE.

**Sample and sampling technique:** The sample size for this study was 180. The streets are referred to as lines are numbered alphabetically from A to X, resulting in 24 streets. Systematic

random sampling was employed to select every 4th street and every 3<sup>rd</sup> house in the selected streets this resulted in six streets and 31 housing units from each of the street giving a total of 180 households. However, housing units that were used for other purposes like offices were not part of the sample for the study

### **Instruments for data collection**

A structured questionnaire developed by the researchers was used for data collection. The instrument had three sections and 18 items rated on a 4-point scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The instrument was face validated by three lecturers in the Department of Environmental Studies in University of Uyo. The reliability of the instrument was determined using Cronbach alpha and a reliability co-efficient of 0.87 was obtained.

### **Data collection and analysis**

The instrument was administered by the researchers and three research assistants. It was distributed and retrieved immediately after completion by the respondents giving 100% retrieval rate. Data were analyzed using simple descriptive statistics such as frequency, percentages, mean and standard deviation. The results are presented on tables and chart. A total mean score of  $\geq 2.50$  was used as cut-off point for agreement to the items raised while any mean score of  $\leq 2.50$  indicate a disagreement (Sincero, 2012).

## **RESULTS**

The results are presented and discussed based on the research questions raised

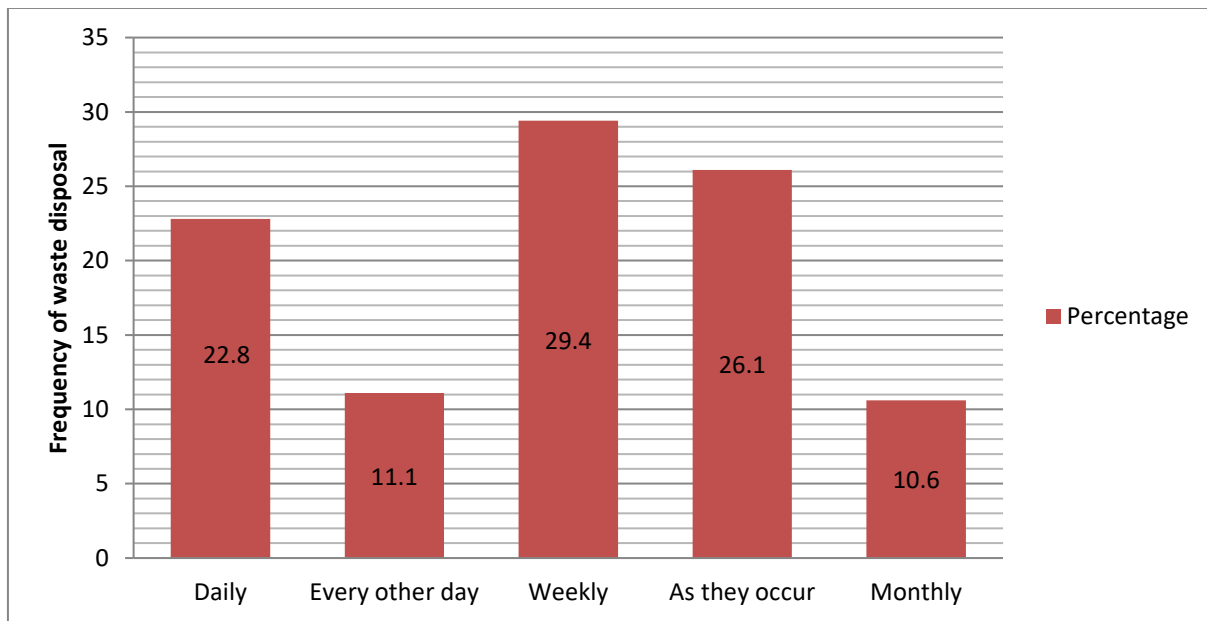
**Research Question 1:** What are the waste collection and storage containers used by residents of EHE?

**Table 1: Mean Responses on waste collection and storage units used by residents of EHE.**

S/N	Waste Collection and Storage Containers	Mean	SD	Remarks
1.	Plastic containers with lid	3.38	0.96	SA
2.	Polythene waste bags	3.07	0.72	SA
3.	Metal waste bins	2.82	0.94	A
4.	Old paint buckets	2.68	0.58	A
5.	Cartons	2.06	1.82	D

Table I shows the Mean distribution of the opinion of the respondents on waste collection and storage containers used in the study area. The result reveal that the respondents use various waste collection and storage containers with the Mean and Standard Deviation ranging from 2.06 - 3.38 and  $\pm 0.58 - \pm 1.82$  respectively, implying that the respondents were close to each other in their responses.

**Research Question 2:** What is the frequency of waste disposal among residents in the study area?



**Figure I: Chart showing responses on the frequency of waste disposal among residents of EHE**

Figure I shows responses on the frequency of waste disposal among residents in the study area. The result reveals that 22.8% disposed their household waste daily, 11.1% disposed their household waste every other day, 29.4% disposed their household wastes weekly, 26.1% disposed their household wastes as they occur, and 10.6% disposed their household wastes monthly to the designated waste collection receptacles within the estate pending the final evacuation by the relevant authorities to the final dump sites.

**Research Question 3:** What are the methods of waste disposal adopted by residents in the study area?

**Table 2. Mean Responses on the methods of waste disposal adopted by residents in the study area.**

S/N	Methods of waste disposal	Mean (X)	SD	Remarks
1.	Land filling/burying	3.44	0.34	A
2.	Composting	3.80	0.86	
3.	Incineration	2.87	0.75	A
4.	Open dumping	2.96	1.03	A
5.	Hog feeding	2.76	0.54	A
6.	Using authorized locations for dumping	2.25	0.65	D
7.	Mechanical destructor	1.40	0.92	D

Data on Table II reveals the Mean responses on methods of waste disposal adopted by residents in the study area. The respondents agreed to adopting land filling/burying ( $3.44 \pm 0.34$ ), Composting ( $3.80 \pm 0.86$ ), Incineration ( $2.87 \pm 0.75$ ), Open dumping ( $2.96 \pm 1.03$ ) and Hog feeding ( $2.76 \pm 0.67$ ). The respondents however disagreed with adopting mechanical destructor ( $1.40 \pm 0.92$ ), recycling ( $1.65 \pm 0.54$ ) and using authorized locations for disposal ( $2.25 \pm 0.65$ ) as the methods of waste disposal adopted by them meaning that the respondents were close to each other in their responses.

## DISCUSSION OF FINDINGS

Findings of the study reveal that residents of EHE used various waste collection and storage containers to collect their household wastes pending their disposal to the wastes receptacles within the estate. This result supports earlier findings by Ikelegbe and Eribo (2016) who found out that the respondents in their study used various storage units for their wastes collection ranging from plastic bags, cartons and others. This is so as the housing estate might not have made provision for waste storage within the housing units as at the time of building the estate thereby forcing residents to harness any available storage containers to collect their waste for onward disposal

Findings also revealed that the frequency of household waste disposal among the respondents varies as shown in figure I. This could be due to the fact that households vary in their make-up, sizes or composition, level of sanitation practices and knowledge of waste disposal. Moreover, during instrument administration, it was discovered that most residents were occupied by maids/servants while the real owners reside outside the state and only visit when time permits. Also since the State always observe monthly sanitation exercise, it is most likely that the respondents who reported that they dispose their wastes on monthly basis might be doing so during the monthly sanitation exercise or when they perceived that the real owners will be visiting.

Finding further shows the different waste disposal methods adopted by residents in the study area. Land filling/burying, composting, incineration, open dumping and hog feeding were the methods mostly employed by the residents in EHE, this is in agreement with Teme (2000) cited in Akpan and Usoroh (2005) who asserted that household wastes should be sanitary and land filled, burnt (incineration), dumped in refuse bags, made into manure or recycled for future use. This method of waste disposal serves as manure to crops when scattered on crop lands. Also, some respondents reported hog feeding as a method of their household waste disposal. This was evident during the period of instrument distribution as goats and pigs were noticed being raised in some of the residents visited: a practice which supposed not to be so as there is a regulation forbidding residents from raising livestock within the estate. The finding further agrees with earlier findings by Akpan and Usoroh (2005) who observed that there is indiscriminate dumping of refuse within the research area and this has resulted in unsightly environment, because most of the waste disposed may take longer period to decompose or may not decomposed thereby resulting in unaesthetic environment. The finding however disagrees with Lewis (2007) who asserted that an important method of waste management is the

prevention of materials being created (also known as waste reduction) from being nuisance to the environment. The finding of this study is also in disagreement with the earlier findings by Nnubia (2014) whose area of study did not have any authorized area for dumping of waste as refuse receptacles were seen strategically positioned in EHE - the area of the present study. The finding further disagrees with earlier findings by Festijo and Yuzon (2003) who discovered that the respondents in their study agreed to recycling and using mechanical destructor to dispose of their waste. The difference could be due to differences in where the former and the latter studies were carried out as the present study area may lack the technology and capacity to recycle their waste.

## CONCLUSION

The study concludes that residents of EHE, Uyo used different waste collection and storage units for their waste collection, frequently disposed of their waste as it deemed comfortable to them and disposed same using different methods to the waste receptacles within the estate, pending evacuation by the waste management authorities.

## RECOMMENDATIONS

Based on the findings of the study the following recommendations are proffered:

1. Residents should make concerted efforts at disposing their wastes daily to avoid undisposed waste being health nuisance to their households and the environment at large.
2. Residents should endeavour to dispose their waste at designated areas to avoid waste littering the environment and becoming breeding grounds for pests and rodents which can lead to disease outbreak.
3. State and Local Government authorities should carry out public awareness/ enlightenment campaigns on radio, churches and parks to enlightened the public on the implications of improper waste disposal on people's health and the environment at large.

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