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Waste Management Practices among Residents of Umuowa Community Orlu L.G.A

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Abstract **Original Research Article**

The aim of the study was to investigate waste management practices among residents of Umuowa Community, Orlu L.G.A. waste management is the collection, transport, processing or disposing, managing and monitoring of waste materials. Four objectives and four research questions guided this study. The design used for the study is a cross-sectional descriptive survey, target population of the study is 960 as distributed fathers, mothers, youths who live permanently in Umuowa Community. The sample size for the study was 282 statistically determined by Taro Yamene formula. Sampling technique used for the study is a simple random sampling technique. The instrument used for data collection is questionnaire. The result showed that a large number (90%) of the residents are aware of waste management and have knowledge in various methods of waste disposal. Majority of the residents 275 (95.52%) affirmed that proper waste disposal can better the health of the community, yet they have poor waste management practices. It was discovered that the most prevalent method of disposal is open dumping as 279 (99%) of the respondents practice open dumping, followed by burning, this pollutes the environment. The researcher made the following recommendations; Government should formulate a policy on proper waste management in rural areas. Government should also make adequate efforts to provide means of waste collection and disposal in rural areas.

Keywords: Waste Management, Umuowa Community Orlu.

INTRODUCTION

Enete [1] stated that waste management is the collection, transport, processing or disposing, managing and monitoring of waste materials. The term usually relates to materials produced by human activity and the process is generally undertaken to reduce their effect on health, the environment or aesthetics. All waste materials, whether they are solid, liquid, gaseous or radioactive fall within the confines of waste management. Wahid [2] of the view that waste management practices can differ for developing and developed nations, for urban and rural areas and for residential and industrial producers. The major waste management practices focused in this research is that practiced in the urban developing nations.

Waste include all items that people no longer have any use for, which they either intend to get rid of or have already discarded, many items can be considered as waste e.g packing items garden waste, old paints containers, vegetables, metals etc [1].

Lawa ln [3] affirmed that Management refers to planning in advances what to do, who to do it, when to do it and how to do it. It could also be said to mean the process of dealing with or controlling things or people.

Waste management can therefore be said to involve the collection, storage, processing, transport or disposal of materials generated by human activity.

Wahid [2] ascertained that Poor waste management has been a major problem to human health and existence, affecting both rural and urban areas. A clean environment influences good health and good health further affects the .productivity of man therefore it can be said that a good and clean environment invariably affects the wealth and economic status of the nation.The choice of method of waste disposal is influenced by certain factors such as topography of the land area, nature and quality of the waste to be disposed and the community [2]. Hence for this study assessment of waste management practice among residents of Umuowa Community Orlu Local Government Area.

Research Design

The study adopted a cross-sectional descriptive survey design.

Area of study

The area of study is Umuowa Community in Orlu L.G.A of Imo State.

Target Population

The target population used for this study is 960 as distributed fathers, mothers and youth who live permanently in Umuowa community the Table 3.1 below shows how they are distributed.

Source: from record of fathers, mothers and youths village meeting.

Sample

The sample size for the study was 282. The sample size was statistically determined by Taro Yameneformulaa for a finite using the formula which is:

$$n = \frac{N}{1 + N(e)^2}$$

Where n = Sample size
N = the total population
I = Constant
e = level of significance/limit of tolerable error (0.05)

Therefore: n=

$$n = \frac{960}{1 + 1960\ (0.05)^2}$$

This represented about 29.4% of the population. Then 29.4% of fathers, mothers and youth were studied as shown in table 3:1 below

People	Population (No of F, M, Y)	Sample (29.4% of the F, M, Y)
Fathers	250	73
Mothers	400	118
Youths	310	91
Total	**960**	**282**

Sampling Technique

Simple random sampling was used for the study, pieces of paper written yes or no was put in a basket; those who picked yes were selected for the study. For fathers the sampling was done on the day of their fathers meeting because that is when the researchers will see all of them together, the same thing applicable to mother it was during their village meeting while youth it was during their youth village meeting.

Instrument for Data Collection

The data for the study was collected using a self-developed questionnaire and structured interview. The questionnaire and structured interview consists of 4 sections with total of 25 question items. Section A consists demographic information of the respondents, section B consists of awareness and knowledge, section C consists of attitude toward waste management while section D consist of practice of waste management.

Reliability of Instrument

Reliability of the instrument was ascertained by pilot testing of the instrument,testing and retesting method were used, ten (10) questionnaires was administered to fathers, mothers and youths of Owere-ebiri community, the same questionnaire but a fresh copy was administered for the second time to the same people after two weeks. The reliability coefficient of the instrument was obtained. The data Elected was analysed using Pearson Product Moment Correlation Coefficient PMCC). A Correlation Coefficient index of 0.86 was obtained, meaning the Btrument is very reliable (calculation in Appendix III).

METHOD OF DATA COLLECTION

A letter of identification was collected from the Department of Nursing, consequently. A letter was written to the Eze of Umuowa Community for permission to carry on the study, the Eze gave permission letter to the researchers, which the researchers used to identify her to the chairmen, chairlady for them to give their permission for the study, and they gave their permission. The instrument as made without the respondent name in order to ensure anonymity and confidentiality. The respondents consent was obtained after some explanation about the nature and purpose of the study.

Consequently the researchers administered 282 copies of the questionnaire with five (5) research assistant, the researchers administers questionnaire to the fathers on the day of their fathers village meeting, 73 questionnaire was administers to the fathers and was collected the same day after filling. The same thing applied to the others there's was 118 questionnaires and the youths which are 91 questionnaires, 282 copies of the questionnaires were retrieved by hand the same day. The questionnaire was administers on different days, that is the day each group had their own village meeting. The literate ones were given questionnaire while structured interview was used for non-literate once.

METHOD OF DATA ANALYSIS

Data were collated and tallied before computing. The data were analyzed using descriptive

statistics of frequencies (f), percentages, and presented using tables and figures.

Ethical consideration

A letter of identification was collected from the Department of Nursing, consequently. A letter was written to the Eze of Umuowa Community for permission to carry on the study, the Eze gave permission letter to the researchers, which the researcher used to identify herself to the chairmen, chairlady for them to five their permission for the study, and they gave their permission.

RESULTS

Table-1: Social/demographic Data

Age (yrs	Frequency(f)	Percentage (%)
<20	11	3.90%
21-30	124	43.97%.
31-40	97	34.40%
41-50	34	12.06%
>50	16	5.67%
Total	282	100%
Sex	Frequency(f)	Percentage (%)
Female	164	58.2%
Male	118	41.8%
Total	282	100%
Religion	Frequency(f)	Percentage (%)
Christianity	274	97.2%
Islam	0	0%
Traditional	8	2.8%
Total	282	100%
Education status	Frequency (f)	Percentage (%)
No formal Education	24	97.16%
Primary school	32	11.35%
Secondary school	170	60.28%
Tertiary	56	19.86%
Total	282	100%

From the table above 43.97% of the population was between the ages of E1-30 years and 3.90% were < 20 years. 25.9% of the respondents were fathers, 41.3% were mothers while 32.3% were youths. 97.2% were Christians and 60.28% had secondary education.

Awareness and knowledge of waste management

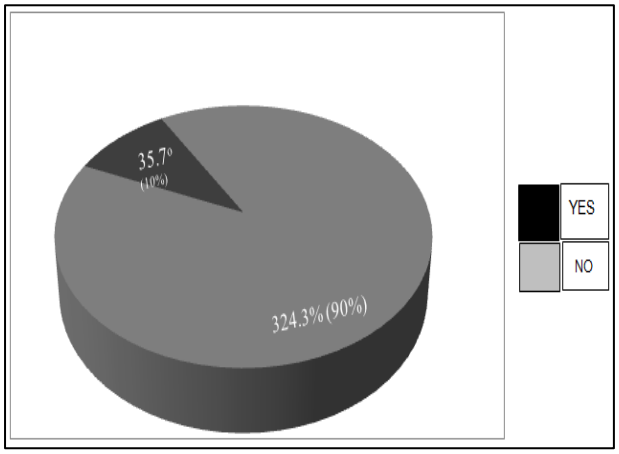

Fig-1: Awareness of Waste Management

The figure showed that, majority of the respondents 90% Government should also lake adequate efforts to provide means of ferrying collected waste from the point of collection to the dump site; were aware of waste management while 10% are not aware.

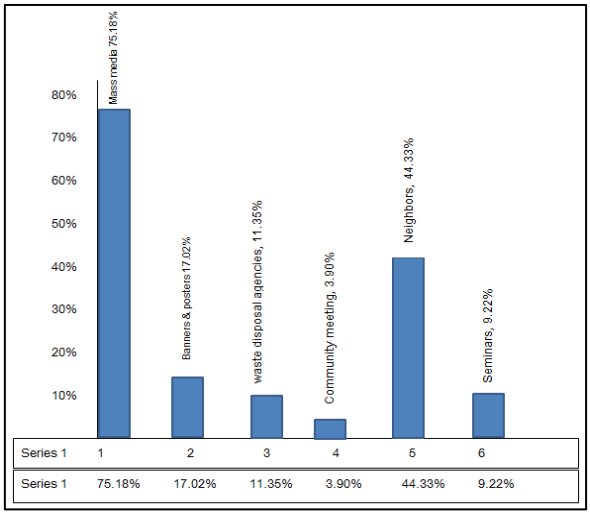

Fig-2: Source of Information

The figure showed that, mass media CTV, radio, newspaper) 75.18% was the commonest means by which respondent heard of waste management, followed by Neighbours 44.33% community meetings recorded the least common means 3.90%.

Table-2: Respondents methods of waste disposal

Methods	YES	NO
Open dumping	**279 (99%)**	**3(1%)**
Burning	**267 (94.7%)**	**15(5.3%)**
Burying	**202 (71.6%)**	**80 (28.4%)**
Composition	**55 (19.5%)**	**227 (80.5%)**
Landfilling	**43 (15.2%)**	**239 (84.8%)**
Incineration	**15(5.3%)**	**267 (94.7%)**

The table above showed that, open dumping was the most popular method of waste disposal known to the respondents 99. %, followed by Burning 94.7%. Incineration recorded the least known waste disposal method.

Table-3: Attitude towards Waste Management

Variable	Effect on health	Frequency	Percentage
Do you think appropriate waste disposal can better your health and that of others around you?	Has effect on health Has not effect on health I don't know	275 2 5	97.52% 0.71% 1.77%
Variable	**Important of waste management**	**Frequency**	**Percentage**
Is the practice of waste management important at all?	Yes No I don't know	279 0 3	98.935% 0% 1.06%
Variable	**Specific importance**	**Frequency**	**Percentage**
Specify the importance of waste management	It beings good health Healthy environment Increased productivity No	280 280 211 0	99.29% 99.29% 74.82% 0

Majority of the respondents 97.52% agreed that proper waste disposal can better their health and 98.93 agreed that the practice of waste management of great importance. 99.29% of respondents specified that waste Management promotes good health environment.

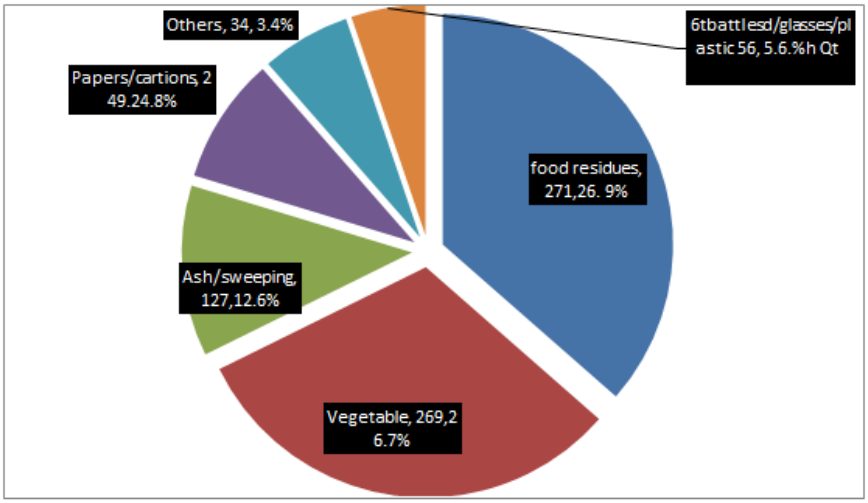

Fig-3: Major type of waste generated in household

The figure above showed that major type of waste generated from household is food residues (95.10%), followed by vegetable (95.39%).

Table-4: Waste Management Practices

Variable	Response	Frequency (f)	Percentage (%)
How are waste been collected?	Bag	97	34.4%
	Containers with cover	145	51.4%
	Container without cover	40	14.9%
Do you separate your waste before disposal?	Yes	33	11.7%
	No	249	88.3%
How many times in a week do you dispose your waste?	Everyday	82	29.1%
	Every alternate day	142	50.3%
	Once a week	58	20.6%
How do you dispose waste (food residues, battles, plastics paper etc?)	Open dumping	187	66.3%
	Composing	26	9.2%
	Hog feeding	0	0%
	Burning	176	62.4%
	Burying	73	25.9%
	Land filling	0	0%
	Incineration	0	0%
	Others	31	11%
How do you dispose liquid waste (bathroom, toilet and kitchen)?	Non-Waste carriage	39	13.8%
	Waste carriage	243	86.2%
	Pit	7	2.5%
	Bucket system	0	0
	Water closet	269	95.4%
	Others	6	2.1%

From the above tables, majority of respondents collect their waste in containers with covers 51.42% and majority do not separate their waste before disposal 88.30.50.35% of the respondents dispose their waste every alternate day. The commonest method of solid and liquid waste disposal include open dumping 66.31% andwaste carriage 86.17 and waste closet 95.39% respectively.

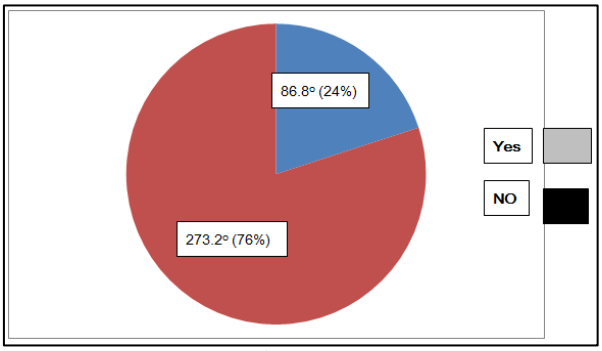

Fig-4: Presence of centralized dumping site

The figure showed that majority of the respondents 76% don't have a centralized place for dumping solid waste.

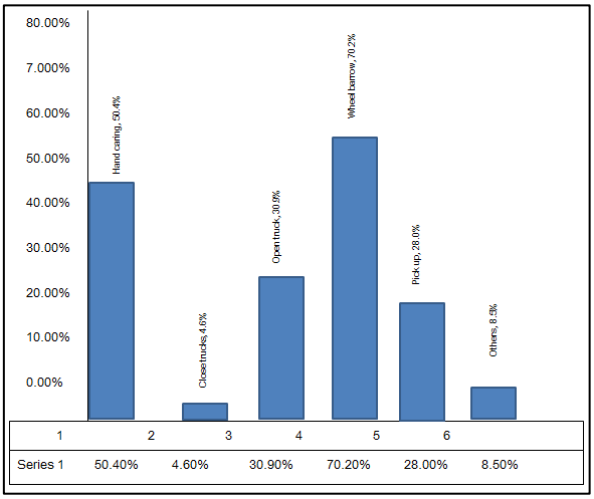

Fig-5: Methods of transport of waste to final disposal site from the figure above the commonest means of transport of waste is by wheel barrow

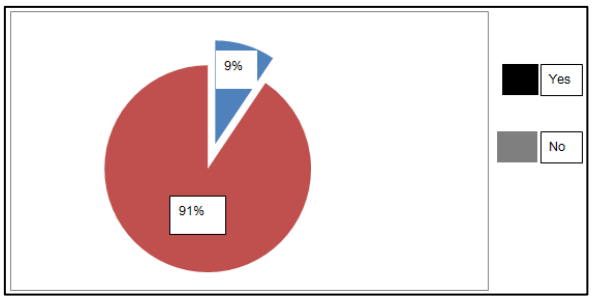

Fig-6: Presence of Licensed Waste Management Firm

The figure showed that majority of the respondents 91% says that they do not have licenced waste management firm in their area.

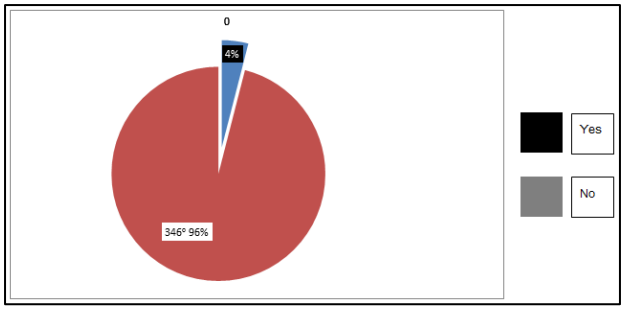

Fig-7: Whether the respondents receive training on waste management Majority of the respondents 96% have not had any formal training for waste management

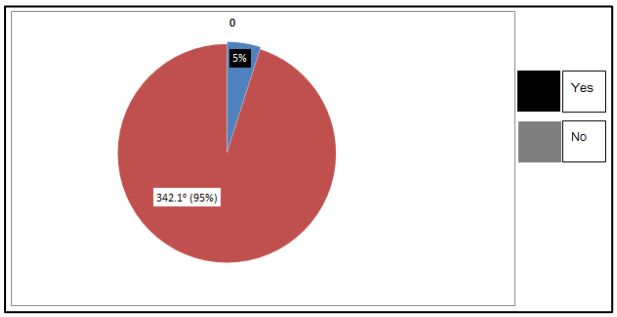

Fig-8: Presence of waste management plan/policy by the local government area

Many of the respondents 95% says they do not have waste management plan/policy provided by the local Government area/council.

DISCUSSION

Majority of the respondents were aged between the age of 21-30 years (43.97%), followed by ages of 31-40 (34.40%), the age range of <20 years (3.905) recorded the least occurrence. 180 (63.83%) of respondents were females and 102 (36.17%) were male. Also majority of the respondents, 274 (97.16%) were Christians, 5(1.77%) where Islam and the least 3 (1.06%) were Traditional worshippers. The study showed that a sizeable number of the respondents 170 (60.28%) had tertiary education, secondary school education 56 (19.86), primary school education 32 (11.35%) and just about 24 (8.51%) with no formal education this shows a high level of educational status, this is unlike the work done by Margaret Banga on household knowledge in solid waste segregation in Urban Kampala which showed that only about 17.5% of the respondents had attained tertiary level education and 43.8% attained secondary level education, 30.5% had primary education.

From the study it showed that majority of the respondents, 254(90%) were aware and had good knowledge of waste management and the commonest means by which the respondents heard of waste management was through mass media (TV,Radio, newspaper etc) 212 (75.18%), this is in line with the work done by Florence Adeyemo, CliftyOluyemi Gboyesola on knowledge, Attitude, and practices on waste management of people living in the university area of Ogbomso which indicate that the respondents were knowledgeable in refuse management. Also the most popular methods of waste disposal known to the respondents where open dumping (27.9) (98.94%) followed by burning 267 (94.68) and the least known method is incineration with any 15 respondents.

A great number of the respondents have a positive attitude towards waste management as 275 (97.52%) of the respondents agreed that proper waste disposal can better their health and 279 (98.93%) agreed that the practices of waste management is of great importance. also 280 (99.29) of respondents specified that waste management promotes good health and health environment. This is line with the study carried out by Florence, Adeyemi, cliftyOluyemi Gboyesola which showed that respondents in university area of Ogbomso has a positive attitude toward waste management as 82.0% agreed that waste disposal into drains and around the surroundings is unhealthy and can be disastrous to health.

From the study, it showed that the major type of waste generated from households was food residues 271(97.10%), followed by vegetable 269 (95.39%) and the least common was others 34(12.06%) followed by Bottles/glasses/plastics 56 (19.86). this is similar to the work done by ModebeIfeoma, Onyeonrougochukwu, EzeamaNkiru *et al.* on Household solid waste management in Awka,_which that the commonest type of waste generated was garbage (100%), followed by cellophane bags (99%).the least common was faulty appliance and dead batteries (0.%).

The study showed that a good number of respondents 145(51.42%) collect their waste in containers with covers and majority do not separate their waste before disposal 249 (88.30%), this is in line with study done by ModebeIfeoma *et al.* lich showed that 85% of households on Awka stored their waste in a closed containers outside the house and majority of the respondents (87.75%) did not sort their waste prior to disposal 50.30% of the respondents dispose their waste every alternate day.

The study showed poor waste management practices among resident Umuowa as 17 (66.31%) of respondents practices open dumping followed by 176 (62.41%) who practices burning which are sources of infection, air pollution as well as creating as aesthetic nuisance. This is a bit in contrast to the finding of IfeomaModede which showed that majority of the respondents in Awka (73%) disposed their waste through government waste management agency and only 27% dumped their waste in unauthorized area. This showed that the residents of Awka have a better waste management practices than residents of Umuowa community. The commonest methods of liquid waste disposal include water carriage 86.2% and water closet 95.39%.

Majority of the respondents (75.89%) have a centralized place for dumping solid waste and the commonest means of transportation of waste is by wheel barrow (70.21%). 91.4% of the respondent do not have licensed waste management firm in their area. Almost all the respondents (96.10%) have not had any formal training on waste management and 95.04% or respondents do not have waste management plan/policy provided by the local government area/council.

CONCLUSION

The study was carried out in Umuowa community to consider the waste management practices among the residents. It looked at the level of awareness and knowledge, attitude towards waste management and the methods of waste disposal, the study, it was discovered that a large number of the residents are aware of management and are also knowledgeable in various methods of waste disposal. Majority of the residents know the positive effects of proper waste management, however the study showed poor waste management practices among residents as it was discovered that the most prevalent method of disposal is in dumping followed by burning, this pollutes the environment and destroys the aesthetics of the environment.

Proper waste disposal management is key to sustaining healthy living conditions in environment. Strict adherence to proper and appropriate waste management practices will improve the living condition in any environment and insulate individuals of such communities from detrimental and hazardous health conditions.

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