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Attitude of Rumueme Community towards Solid Waste Management in Obio-Akpor Local Government Area of Rivers State

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Abstract

The study focused on attitude of Rumueme Community towards solid waste management in Obio/Akpor Local Government Area of Rivers State. **Introduction:** Waste management is one of the most pressing environmental challenges faced by urban and rural areas globally. Solid waste is described as all the wastes arising from human and animal activities that are normally solid and are discarded as useless or unwanted. **Methodology:** The study used a descriptive survey study design with a sample size of 150 which are selected through simple random sampling techniques. A structured questionnaire were used as an instrument for data collection, while SPSS, frequency tables and simple percentage was adopted for data analysis. **Result:** The findings of the study indicated Rumueme Community residents' exhibit poor attitude towards solid waste management. Another finding of the study revealed that there are associated effects of poor solid waste management, hence the effects in the study area is high. Also, the study showed that methods of controlling solid waste in Rumueme Community is inadequate and uncommendable in all ramifications. **Conclusion:** A good population of habitants in Rumueme Community exhibit improper habit of solid waste management and this is due to lack of knowledge on good solid waste management and its effects on human health, hence awareness on the importance of good solid waste management should be organized for the inhabitants of the study area to enhance their knowledge and attitude towards solid waste control and management.

Keywords*: Rumueme Community; Solid Waste Management, Obio/Akpor Local Government Area, Environmental pollution*

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1. Introduction

Waste management is one of the most pressing environmental challenges faced by urban and rural areas in the present day globally where urbanization, infrastructure and economic growth have rapidly resulted to increased municipal waste generation per person (Solberge, 2012).

Despite significant socio-economic and environmental development in the present world, waste management has remained relatively unchanged. The government and private individuals have a key role to play in extracting value from waste, with approximate by 90% of residual waste. There is urgent need to move to more effective and good waste management system and facilities in order to enhance health and environmental sustainability. According to Aleluia & Ferao (2016), integrated waste management system has been described as the integration of sustainable management of waste options such as, waste reduction, recycling, reuse and recovery (3Ris).

United Nations Habitat Waste (UNHW, 2014) reported that African city population will be more than triple over the next 40 years. African cities are already in undated with slums, a phenomenon that could lead to high waste generation. Various types of waste such as' households and non - hazardous waste are product on daily base from commercial, industrial and institutional establishments which includes hospitals, markets, yards and street sweeping (Henry, 2016).

According to the Australian Waste Database (Wray, 2009), waste is defined as "materials that currently have the negative value to the owner, that is the generator incurs cost in managing them importantly, this does not prevent them from having positive value to another owner at another location in space or time". The United Nation Organization (Morrison, 2014:46) defined waste as "any material or matter concerned to be waste under national legislation, any material listed as waste in appropriate schedules, and in general any surplus or reject material that is no longer useful and which is to be disposed of". Solid waste is described as all the wastes (garbage, rubbish, trash, refuse) arising from human and animal activities that are normally solid and are discarded as useless or unwanted. Waste management is a process that involves the collection and treatment of waste which offer solutions for recycling items. It involves the changing and use of waste as a valuable resource. Waste management should be embraced by each and every household including the business owners across the world. Industrialization has brought a lot of good and bad things as

well. One of the negative effects of industrialization is the creation of waste. Waste can create unsanitary condition which can lead to pollution of the environment (Kim & Gobalan, 2017).

In India, the waste and handling rules were introduced by the Minister of Environment and Forest (M.O.E.F) although compliance is variable and limited. M.O.E.F issued municipal waste rules to ensure proper waste management system in India and new updated draft have recently been published. Municipal authorities are responsible for implementing rules and developing infrastructure for collection, storage, segregation, transporting, processing and disposing of waste (Hashe, 2014). In Thailand, for many years, waste management (WM) has been a topic of heated debate. Waste management presents practical management challenge for local government authorities. The need for better waste management system has become increasingly obvious with the rise in population. Many potentially good waste management solution have been suggested and applied, even if temporarily in many areas around Thailand, such as; waste sorting and recycling (Wattana, 2015).

In Nigeria, empirical evidence has rank the country as one of the countries of the world that produces high quantity of waste. Statistics showed that 80% of waste from industrial, commercial and agricultural activities are generated in both cities and local communities. This is due to her over increasing population of more than 170 million, coupled with sophisticated taste and demand for domestic and industrial goods by her urban population. The uncontrolled generation of waste and its disposal have deteriorated over otherwise conducive urban environment. Virtually all cities in Nigeria and local communities are characterized by mounting heaps of wastes. The health implications of this development on our urban and local communities and socio-economic development prompted the desired need and urgent attention in order to address the ugly situation. (Siriratpiraya, 2014).

The critical problems with respect to waste management as described by Morrison & Munro (2015) include: "insufficient government priority and political support for action: lack of fiancé, no long term planning or business planning; poor landfill siting, design, planning and management; lack of skilled personnel; lack of awareness of the problem caused by poor waste management; physical limitations to the established of landfill sites poor handling of clinical waste; insufficient recycling and reuse, including limited sewage sludge and effluent. The failure to adequately address these problems leads to escalating environmental and health problems and serious consequences for economic development based on tourism export agriculture and small "clean" industries.

Statement of the Problem

Solid waste management is one of the most pressing environmental challenges that most of the urban cities and rural communities are faced with in Nigeria. It is a very well-known difficult task as it has created a lot of problems to people which include; traffic jam, health hazards and unsightly environment. Additionally, environmental pollution in urban and rural areas are due to improper waste disposal and management and it is a matter of serious concern. Despite the numerous wastes collection points in the Community designated by River State Waste Management Agency (RIWAMA), the inhabitants of the Community are fond of dumping their solid waste in the middle of the road and inside drainage which possess a serious threat to the health of people and impacts environment negatively. The aforementioned scenario prompted the researcher to conduct a study on Attitude of Rumueme Community towards waste management in Obio/Akpor Local Government Area of Rivers State with a view to addressing them.

Purpose of the study

The study is aimed at evaluating the attitude of Rumueme Community towards solid waste management in Obio/Akpor Local Government Area of Rivers State.

Objectives of the Study

Specifically, the study intends to achieve the following objectives:-

1. To determine the attitude of Rumueme Community towards solid waste management.
2. To identify the effects of poor solid waste management.
3. To identify methods of controlling solid waste in Rumueme Community Obio/Akpor Local Government Area of Rivers State.

Research Questions

1. What is the attitude of Rumueme Community residents towards solid waste management?
2. What is the effects of poor solid waste management?
3. What is methods of controlling solid waste in Rumueme Community in Obio/Akpor Local Government Area of Rivers State?

From the objectives/aims, the following research hypothesis were proffered.

Ho 1: There is no significant difference on the attitude of Rumueme Community residents towards solid waste management.

Ho 2: There is no significant difference associated with the effects of poor solid waste management.

Ho 3: There is no significant difference methods of controlling solid waste in Rumueme Community Obio/Akpor Local Government Area of Rivers State.

2. Materials and Methods

Research Design

This study employed a descriptive survey research design and was conducted between September, 2022 and October, 2022 to access the attitude of Rumueme Community residents towards solid waste management in Obio/Akpor Local Government Area of Rivers State.

Study Area

The study was conducted in Rumueme Community in Obio/Akpor Local Government Area of Rivers State. The Community lies in a geographical co –ordinates of longitude 4^0 49^{II} N and latitude 6^o 59^{II} E.

Population of the Study
The population of the study is 4,170 inhabitants of the area (Rumueme) which comprises both males and females residing in the Community.

Sample Size and Sampling Techniques
The sample size for this study is determined using 10% of the population of the study. The formula is simple percentage system;
Where; N = population of study.
Sample size n = 10% x 4,170
= 10 /100 x 4,170
n = 417
On this note, sample size of 57 was used for the participants between the age bracket of 18 – 30 years, while 360 respondents' was used for participants' between the age bracket of 31 -50 years.

Method of Data Collection
The data was collated using a structured questionnaire containing items in the form of closed-ended questions and were administered directly to the participants.

Method of Data Analysis
The results obtained were analyzed using SPSS packages of mean rating, standard deviation, and t –test statistics of version 22.

Ethical Consideration
The researcher obtained a letter from the Dean of the School of Public Health in the Rivers State College of Health Science and Management Technology, Port Harcourt, which permits and authorizes him to embark on the project as well as issue questionnaire to the respondents'.

3. Results

Data Presentation and Analysis
Socio demographic data
The data obtained (Table 1) showed that a total of 100 respondents' representing 24.% of the study population were between 18 – 29 years of age, 185 respondents' representing 44.4% were between 30- 41yrs and 82 respondents' representing 19.6% were between the age bracket of 42 -53yrs while 50 respondents' representing 12.0% were 50 years and above.

Table 1: Respondents 'Age Distribution

Age Group	No. of Respondents'	Percentage (%)
18 -29yrs	100	24.0
30 - 41yrs	185	44.4
42- 53 yrs.	82	19.6
50 yrs. and above	50	28.0
Total	**417**	**100**

From table 2, 79(18.9%) of the respondents' were single, 250(60.0%) of the respondents' were married, divorced constituted 40 respondents' representing 9.6% of the total population while 48 respondents' representing 11.5% of the sample size were widow/widower.

Table 2: Respondents' Marital Status

Marital status	No. of Respondents'	Percentage (%)
Single	79	18.9
Married	250	60.0
Divorced	40	9.6
Widow/widower	48	11.5
Total	**417**	**100**

According to table 3, 67 respondents' (representing 16.1%) persons that participated in the study had primary education, 224 respondents' (representing 53.1%) of the population attended secondary education, 76 respondents' (representing 18.2%) of the population had tertiary education while only 50 respondents' (representing 12.0%) had no formal education.

Table 3: Respondents' Educational Level

Educational Status	No. of Respondents'	Percentage (%)
Primary	67	16.1
Secondary	224	53.7
Tertiary	76	18.2
Non- formal education	50	12.0
Total	**417**	**100**

The above figure showed that a total of 94 respondents' (representing 22.5%) involved in the study were farmers, 120 respondents' (representing 28.8%) were students,80 respondents' (representing 19.2%) were into business, while the remaining 123 respondents' (representing 29.5%) of the sample population were civil servants.

Table 4: Respondents' Occupational Status

Occupation	No. of Respondents'	Percentage (%)
Students	94	22.5
Farmer	120	28.8
Civil Servant	80	19.2
Business	123	29.5
Total	**417**	**100**

The collected data (Table 5) showed that a total of 300 respondents' (representing 71.9%) in the sampled population were Christians and 50 respondent (representing 12.0%) was Muslim, 67 respondent (representing 16.1%) was into African traditional worshipers/religion.

Table 5: Showing Respondents' Religion

Religion	No. of Respondents'	Percentage (%)
Christianity	300	71.9
Islam	50	12.0
Traditionalist	67	16.1
Total	**417**	**100**

Attitude of Rumueme Community Residents towards Solid Waste Management.
Table 6 revealed that the mean scores of the respondents' attitude on disposing solid waste in drainage (gutter) in Rumueme Community is 3.44 and that of disposing solid waste in the river is 3.13. This implies that mean scores are greater than the average point of 2.5. To this effect, it is evident that

Rumueme Community residents exhibit poor attitude towards solid waste management.

The table also showcase the mean and standard deviation on effects of poor solid waste management in Rumueme Community. It indicated that the mean scores are higher or greater than 2.5. This means that soil contamination, health hazards, environmental de-gradation and water pollution are the effects of poor solid waste management.

Table 6: Showing Respondents' Response to the above Research Question

Items	SA	A	D	SD	$\bar{X}$	Total Responses
I dispose solid waste in drainage (gutter).	840 (58.58)	570 (35.74)	14 (0.976)	10 (0.697)	3.44	1434
I enjoy disposing solid in an open field.	803 (57.22)	570 (40.77)	20 (1.43)	8 (0.572)		1398
I dispose solid waste in the river.	800 (61.21)	300 (30.70)	200 (15.30)	7 (0.536)	3.13	1309
I dispose my solid waste in a collection point	400 (41.97)	54 (5.66)	400 (41.94)	99 (10.39)	2.29	953
Effects of Poor Solid Waste Management						
Solid waste can cause soil contamination.	808 (56.58)	600 (42.02)	10 (0.900)	10 (0.900)	3.42	1427
Solid waste can cause harm to animal and marine life.	1000 (70.08)	300 (21.02)	120 (8.409)	7 (0.491)	3.42	1427
Solid waste can cause environmental de-gradation.	1200 (79.63)	240 (15.63)	60 (3.981)	7 (6.464)	3.61	1509
Solid waste can cause water pollution.	840 (65.27)	210 (16.32)	200 (15.54)	37 (2.875)	3.09	1287
Methods of Controlling Solid Waste in Rumueme Community.						
Solid waste can controlled through waste minimization	1040 (72.68)	240 (16.82)	140 (9.801)	7 (0.491)	3.42	1427
Solid waste can controlled by waste reduction	400 (39.96)	51 (5.094)	500 (49.95)	50 (4.995)	2.40	1001
Solid waste can be controlled by cycling of waste	1200 (75.05)	285 (18.77)	22 (1.449)	11 (0.725)	3.64	1518
Reuse of waste is another method of controlling solid waste.	800 (59.17)	450 (33.28)	72 (33.28)	30 (2.219)	3.24	1352

Analysis of Hypothesis.

Hypothesis (Ho 1).

There is no Significant Difference on Attitude of Rumueme Community Residents towards Solid Waste Management.

The mean and standard deviations of responses about attitude of Rumueme Community residents towards solid waste management as presented in the table have n = 417, based on the degree of freedom at 0.0.5 level of significance the calculated z= ratio is 1.480 and critical T = ratio is 2.457 (Table 7). At this point, the z calculated is not statistically and satisfactory significance at 0.05 level of significance since it is less the table value of z – ratio. The **Ho_1** is, therefore, accepted in the sense that there are poor attitude towards solid waste management among residents of Rumueme Community in Obio/Akpor Local Government Area of Rivers State. In this back drop, there is no significant different in the hypothesis stated.

Table 7: Mean Difference in the Attitude of Rumueme Community Residents towards Solid Waste Management

Respondents'	n	$\bar{X}$	SD	DF	STD	P	Z	T.	Decision
Respondents' within the age limit of 18 – 30 yrs.	57	34.27	29.54	415	3.51	0.05	1.480	2.457	Agree
Respondents' within the age limit of 31-50 above	360	29.08	25.82						
Total	**417**								

Hypothesis (Ho 2).

There is no Significant Difference Associated with the Effects of Poor Solid Waste Management.

The mean and standard deviations of responses about associated effects of poor solid waste management with n = 417 based on the degree of freedom of 415 at 0.05 level of significance, the z – calculated is 0.480 and T– critical is 1.67 (Table 8). At this point, the T. calculated is not statistically or satisfactorily significant at 0.05 level of significance since it is less than the table value of z – ratio. The **Ho2** is, therefore, accepted on the bases that there is no significant difference on associated effects of poor solid waste management Rumueme Community in Obio/Akpor Local Government Area of Rivers State.

Table 8: Mean Difference Associated with the Effects of Poor Solid Waste Management

Respondents'	n	$\overline{X}$	SD	DF	STD	P	T. Cal.	T. Cri.	Decision
Residents within 18 – 30 yrs.	57	34.43	30.54	415	12.33	0.05	1.460	1.67	Agree
31 yes -50 above	360	35.5	29.72						

Hypothesis (Ho 3).
There is no significant difference in the Methods of Controlling Solid Waste in Rumueme Community in Obio/Akpor Local Government Area of Rivers State
The mean and standard deviations scores responses about the methods of controlling solid waste in Rumueme is n = 417, based on the degree of freedom 415 at 0.05, level of significance, the t – cal. is 2.39 and t – cri. is 3.65 (Table 9). At this point of operation, the t – calculated is not satisfactorily significant at 0.05 level of significance since the table value is higher than the calculated value. The **Ho3** is, therefore, accepted on the premise that it satisfied the condition that methods of controlling solid waste in Rumueme Community is inadequate, uncommendable in all ramification. This conclude that there is significance difference in the research question as stated.

Table 9: Mean difference in the Methods of Controlling Solid Waste in Rumueme Community in Obio/Akpor Local Government Area of Rivers State

Respondents'	n	$\overline{X}$	SD	DF	STD	P	T. cal	T. cri	Decision
Women of child bearing age 18 – 30	57	34.35	29.38	415	3.60	0.05	2.39	3.65	Agree
31-50 above	360	35.5	29.72						

Discussion

Attitude of Rumueme Community Residents towards Solid Waste Management
In carrying out the research, the researcher evaluated the attitude of Rumueme Community towards solid waste management in Obio/Akpor Local Government Area of Rivers State; based on some variables such as attitude of Rumueme Community residents towards solid waste management. Based on the findings of the research questions, it was discovered that all the variation as discussed based on the means and standard deviations are adequate, absolute and fit for the exhibition of poor attitude of Rumueme Community residents towards solid waste management. The study supported the earlier investigation done by Okonkwu (2015), Akpan (2010), Martins (2016) and Uche (2018).

Effects of Poor Solid Waste Management
Also the finding revealed that there are associated effects of poor solid waste management, hence the effects in the study area is high. This finding is in consonant with the study of Israel (2011) which reported that there is high prevalence effect of improper solid waste management in Abuja municipal council. The findings of the study with regards to the various research hypothesis are tested as follows:

1. The result of research hypothesis **(Ho1**) are obvious, adequate and confirm to the expectation that there are poor attitude towards solid waste management among residents of Rumueme Community in Obio/Akpor Local Government Area of Rivers State. Hence there is no significant different in the hypothesis stated. The outcome is in line with the study of Akpan (2010) on the attitude of urban areas dwellers towards proper waste disposal in Nigerian society. According to him, there are poor exhibition of attitude towards solid waste management in urban cities in Nigeria. Ukpom (2013) is of the view that creating awareness among the inhabitants in Urban areas on proper solid waste management will help in addressing the problem of poor waste disposal in urban cities in Nigeria.
2. Based on the result research hypothesis **(Ho2),** it was observed that it was accepted on the bases that there associated effects of poor solid waste management Rumueme Community in Obio/Akpor Local Government Area of Rivers State. This is in conformity with Idowy (2015) who asserted that improper waste management in urban cities has remarkable effects in the environment. Many authors and authorities are cited to portrait the vehemence of the result. However, from this premise, it shows that associated health risks which await the residents in urban areas are real and the fact cannot be over emphasized.
3. From the result of the study, the researcher discovered that methods of controlling solid waste in Rumueme Community is inadequate, uncommendable in all ramification The result of the study support the findings of Ekpe (2011) and Ngozi (2014) who reported that methods of controlling solid waste in Manucipal areas in Nigeria is inadequate all aspect. She identified some methods solid waste disposal in urban cities as waste minimization, waste reduction, and recycling of waste.

Conclusion

This study reported that a good population of habitants in Rumueme Community exhibit improper habit of solid waste management and this is due to lack of knowledge on good solid waste management and its effects on human health, hence awareness on the importance of good solid waste management should be organized for the inhabitants of the study area to enhance their knowledge and attitude towards solid waste control and management.

Recommendations

Based on the findings of the study, the following recommendations are made;
Enlightenment Programmes should be embarked upon by government agencies and environmental health agencies on the

importance of proper solid waste management among the people of Rumueme Community in Obio/Akpor Local Government Area of Rivers State. Waste disposal bin and collection points should be positioned in strategic areas of the Community to enhance effective solid waste management.

Legislations prohibiting improper solid waste disposal should be enacted by the government.

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