

Waste Management Practices of Rural Women in Enugu North Senatorial Zone, Enugu State

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Abstract

This study determined waste management practices among rural women in Enugu North Senatorial Zone, Enugu State. The descriptive survey research design was adopted. All the rural women in the Zone numbering 22,261 constituted the population. Two-stage sampling technique was applied to draw a total of 396 rural women that were studied. A researcher-designed questionnaire based on literature review titled “waste management practices questionnaire (WMPQ)” with a reliability index of 0.81 was used for data collection. Frequencies and percentages were used to answer the research questions while chi-square statistics was adopted in testing the null hypothesis. The results were deemed statistically significant at $p \leq 0.05$. The findings indicated that waste management practices among rural women in Enugu North Senatorial Zone of Enugu State were appropriate (71.0%). Also, the waste management practices among rural women with non-formal education (71.3%), primary education (72.6%), secondary education (74.4%), and tertiary education (66.7%) were appropriate. Statistically, no significant difference was observed on the waste management practices among rural women based on level education ($p > 0.05$). Based on the findings of the study, the conclusion was drawn that waste management practices of rural women in Enugu North Senatorial Zone of Enugu State regardless of level of education, were appropriate. It was recommended among others that the educational institutions should emphasize on the need to educate young prospective mothers on health consequences of poor waste management practices. Such enlightenment would make help in reforming their practices of waste management in later life.

Keywords: Rural women, Waste management practice, Level of education, Enugu North

Introduction

Worldwide, waste management is considered as a critical issue in public health and other major sectors of life and administration. Evidence-based studies reveal that irregularities in waste management are detrimental to health, leading to outbreak of sicknesses and diseases such as cholera, typhoid, diarrhoea, poliomyelitis, yellow fever, hepatitis, malaria, Lassa fever, and guinea worm (Mara, Lane, Scott & Trouba, 2010; Kicketas, Ajuwon, Abiodun & Adilepo, 2016). In rural locations, the resultant effect of poor waste management is more critical due to the educational background of the populace. One's level of education is paramount in maintaining appropriate waste management practices (Ugeheche & Osademela, 2015; Sallam & Dabous, 2016; Abubakar, 2017). According to the World Health Organization -WHO (2015), inadequacies in waste management contributed to high prevalent rates of infant mortality and morbidity particularly in most developing countries with an estimated two hundred and eighty thousand diarrhoeal deaths annually. Similarly, the United Nations (2016) indicates that the loss of productivity due to sickness

linking to inadequacy in waste management practices is estimated to have cost many countries up to five per cent of their gross domestic products. National Environmental Health Practice Regulations (2018) had earlier reported that waste management practices are more critical in the developing regions of the world including Nigeria. The committee further emphasized that more than five hundred and fifty-three million Africans live without basic sanitation facilities/services. Sanitation-related diseases such as hepatitis, Lassa fever, yellow fever, and Ebola virus diseases are more pronounced in sub-Saharan Africa, than other parts of the world (WHO, 2015). Specifically, Shittu, Akpan, Mafiana, Ogunshola and Sodipe (2014), posited that the widespread cases of diarrhoea and cholera abound in Nigeria. Also, Angus (2018) emphasized on the deplorable state of waste management in various senatorial zones in Enugu State.

Studies (Kicketas, Ajuwon, Abiodun & Adilepo, 2016; Sallam & Dabous, 2016; Jhahan, Hassan, & Rahman, 2017)) had earlier posited that inadequacy in waste management can result in increased human problems, huge economic losses and damages to properties. This bad situation could be avoided if appropriate measures are taken. It is on this premise that the researcher deems it necessary to find out the waste management practices among rural women. Specifically, the study provided answers to the following research questions: firstly, what are the waste management practices among rural women in Enugu North Senatorial Zone? Secondly, what are the waste management practices among rural women in Enugu North Senatorial Zone based on educational level? Furthermore, the study tested the null hypothesis of no significant difference in the waste management practices among rural women in Enugu North Senatorial Zone based on educational level. It is the expectations of the researcher that the outcome of this study would form a framework for the development and implementation of waste management education programme for all rural women in Enugu State and other parts of the world in general.

Materials and Methods

The descriptive survey research design was adopted to achieve the purpose of the study. The design was considered appropriate because it allows for a complete data analysis from a definite population, or a representative subset, at a specific point in time and place (Abdulaq, Umaru & Isaa 2016; Gebraeli et al., 2017; Yuri et al., 2018). The study was conducted in Enugu North Senatorial Zone. This study area is made up of six Local Government Areas (LGAs) via: Nsukka, Igbo-Etiti, Igbo-Eze North, Igbo-Eze South, Udenu and Uzo-Uwani LGAs. The population for the study comprised 22,261 rural women in the Zone (National Demographic and Health Survey-NDHS, 2021). Two-stage sampling techniques were used. In the first stage, simple random sampling procedure was adopted to select three rural communities from each of the six LGAs in the zone. This yielded a total of 18 rural communities. The choice of simple random sampling technique was to ensure that every community in the six LGAs stands a chance of being used for the study. The second stage involved using convenient sampling technique to select 22 rural women from each of the sampled communities in the first stage. This process yielded a total of 396 rural women who were used in the study. The choice of the sample size was based on the suggestion of scholars on the application of standard sample distribution table (Cohen, Manion & Morrison, 2011). A researcher-designed questionnaire based on literature review titled “waste management practices questionnaire (WMPQ)” with a reliability index of 0.81 was the only instrument used for data collection. The validity of the questionnaire was established through the constructive critiques of five experts from the University of Nigeria Nsukka. With the assistance of six research assistants who were briefed on the modalities of questionnaire administration, the instruments were successfully administered to the respondents and retrieved on the spot. Frequencies and percentages were used to answer the research

questions while chi-square statistics was adopted in testing the null hypothesis. The results were deemed statistically significant at $p \leq .05$.

Results

Table 1
Waste Management Practices among Rural Women in Enugu North Senatorial Zone (n=391)

S/N	Items	Waste Management Practices			
		Yes		No	
		f	%	f	%
1.	Segregate ashes, used clothes, broken pots, garbage, yam and banana peels before final disposal.	168	43.0	223	57.0
2.	Practice open defecation.	231	59.1	160	40.9
3.	Control vectors, rodents and insects at home with insecticides and traps to prevent their contamination of food items.	207	52.9	184	47.1
4.	Use latrine for defecation at home	366	93.6	25	6.4
5.	Use waste bin or bags in collecting and assembling of household generated refuse	356	91.0	35	9.0
6.	Ensure adequate ventilation, enough space and lighting at home	338	86.4	53	13.6
Mean Percent			71.0		29.0

Note: f = frequency; % = percentage; n = sample size.

Data in Table 1 showed the mean percent (71.0%), which implied that the waste management practices among rural women in Enugu North Senatorial Zone of Enugu State, were appropriate.

Table 2
Waste Management Practices among Rural Women in Enugu North Senatorial Zone based on Level of Education (n=391)

S/N	Items	NFE (47)		PE(15)		SE(251)		TE (78)	
		f	%	f	%	f	%	f	%
1.	Segregate ashes, used clothes, broken pots, garbage, yam and banana peels before final disposal.	17	36.2	5	33.3	115	45.8	31	39.7
2.	Practice open defecation.	28	59.6	10	66.7	163	64.9	30	38.5
3.	Control vectors, rodents and insects at home with insecticides and traps to prevent their contamination of food items	23	48.9	8	53.3	134	53.4	42	53.8
4.	Use latrine for defecation at home	46	97.9	14	93.3	233	92.8	73	93.6
5.	Use waste bin or bags in collecting and assembling of household generated refuse	45	95.7	15	100.0	227	90.4	69	88.5
6.	Ensure adequate ventilation, enough space and lighting at home	42	89.4	15	100.0	214	85.3	67	85.9
Average Mean Percent			71.3		74.4		72.6		66.7

Note: f = frequency; % = percentage; n = sample size

Data in Table 2 showed that the waste management practices among rural women in Enugu North Senatorial Zone with non-formal education (71.3), primary education (74.4), secondary education (72.6), and tertiary education (66.7%) were appropriate. This implied that the rural women in Enugu North Senatorial Zone with different levels of education have appropriate waste management practices.

Table 3

Chi Square Analysis Testing Significant Difference in Waste Management Practices among Rural Women in Enugu North Senatorial Zone based on Level of Education (n=391)

Waste Management Practices	Variable (Education)	Yes O(E)	No O(E)	χ^2	df	P-value	Dec
Waste Management Practices	Non-formal Education	40(39.3)	7(7.7)	0.813	3	0.846	NS
	Primary Education	212(209.9)	39(41.1)				
	Secondary Education	12(12.5)	3(2.5)				
	Tertiary Education	63(65.2)	15(12.8)				

Note: NS = Not Significant; S = Significant; Dec. = decision; df = degree of freedom

Table 3 shows the calculated chi-square value and the corresponding p-value of waste management practices among rural women in Enugu North Senatorial Zone based on level of education ($\chi^2 = 0.813$; $p = 0.846$) which is greater than 0.05 level of significance at 3 and 391 degrees of freedom. The null hypothesis of no significant difference in waste management practices among rural women in Enugu North Senatorial Zone based on level of education was therefore not rejected. This implies that waste management practices of the respondents did not differ significantly based on level of education.

Discussion

This study adopted descriptive approach in establishing the educational-based differences on waste management practices among rural women in Enugu North Senatorial Zone. The study reveals that the waste management practices among rural women in Enugu North Senatorial Zone of Enugu State regardless of level of education were appropriate. This implies that the rural women have good practice of waste management in the zone. The finding is quite expected and encouraging as it aligns with the fact that good and healthy management of wastes beautifies the environment and promotes the health of the residents. The expected findings could be attributed to the sensitization programmes as well as monthly sanitation exercise as routinely observed in the State and its sub-settings. However, such exercise might have exposed the rural women on the need to maintain high and desirable waste management practices in the localities. This finding concurs with a descriptive study conducted in rural communities of Alexandria which indicated that married adolescents’ women had high level of sanitation practices (Sallam & Dabous, 2016). In contrast, Kicketas, Ajuwon, Abiodun and Adilepo (2016) reported that the sanitary hygiene practices of nursing mothers accessing primary health care facilities in Ilorin, Nigeria were not appropriate.

Rural women in Enugu North Senatorial Zone with non-formal education, primary education, secondary education, and tertiary education indicated appropriate waste management practices. Statistically, no significant difference was observed on waste management practices of rural women in Enugu North Senatorial Zone based on level of education. These findings are quite encouraging as they reflect the real and actual scenario on the sanitation status of the people. The findings are in accordance with other researchers’ outcomes (Ademola, Kate, Baldoph, & Adepoju, 2017; Ibeaka, Ubakanma & Umeanwuo, 2017). Regardless of obvious remarks on waste management practices, there is need for collaborative efforts by the government, individuals, concerned bodies and agencies to continue updating the rural women on the need for high and desirable measures of sanitation practices regardless of educational status. Appropriate waste management practice would improve the quality of health or life of the rural dwellers, prevent sanitary-related diseases, improve standard of living, reduce medical expenses, and enhance productivity.

The present research records limitations. In this study, only the rural women in Enugu North Senatorial Zone were sampled and studied. Hence, the findings of the study might not be a true representation of waste management practices among all the rural women since the

sampling bias was not sparely managed. Further studies of this kind are needed to explore other zones in the State and Nigeria at large. Also, future research is crucial in exploring the major sources of information regarding appropriateness of waste management practices among the rural women. This study primarily relied on questionnaire as the tool for data collection. Therefore, there is need to adopt other data collection mechanisms such as interview schedule and focus group discussion. These measures would allow the respondents to express their views and experiences regarding waste management practices. The need to explore more socio-demographic variables of the respondents such as occupation and marital status regarding waste management practice is paramount.

Conclusion

Based on the findings of the study, the conclusion was drawn that waste management practices of rural women in Enugu North Senatorial Zone of Enugu State were appropriate. Also, the waste management practices of the respondents varied based on level of education. Statistically, no significant difference was observed on the waste management practices among rural women based on level education.

Recommendations

1. The educational institutions emphasize on the need to educate young prospective mothers on health consequences of poor food and personal hygiene practices. Such enlightenment would help in sustaining adequate waste management practices.
2. Since waste management is essential in eliminating sanitary-related health problems, greater efforts should be employed by the individuals, government, health agencies and private sectors to improve and sustain adequate waste management practices among the women.
3. The health care workers should embark on public enlightenment and mass education of the rural women with poor educational background on the need to adopt appropriate waste management practices in every household.

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