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Social Factors & Waste Disposal Practices among Residents of Akungba Akoko, Ondo State

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Abstract

The increasing numerical strength of the people inhabiting Akungba Akoko community due to the influx of staff and students' population, occasioned by the citing of the State University in the community, is directly proportional to the increasing volume of solid waste generated from human activities. This raises concerns about the effectiveness of the waste management strategies put in place public and private institutions to ensure appropriate disposal because if its implication on the human's health and wellness. This study examined some social factors influencing of waste disposal practices among residents of Akungba-Akoko, Ondo State Nigeria. A double-staged random sampling was adopted to select the respondents in a dual process. Akungba was stratified into three zones (A, B & C) on the basis of core-cultural characteristics of the residents, using the Stratified Random Sampling. Zone A consists of residential areas accommodating the State University Students, Zone B consists of the areas where there are mixtures of both students and indigenes while Zone C consists of areas of high concentration of pure indigenous settlers. Simple Random Sampling Technique was then used to select 55 respondents from each of the zones making a total of 165 respondents for the entire study. The instrument, a structured questionnaire, titled Social factors & Waste Disposal Practices (SDWDPs) which contained both open and closed ended questions on Waste Disposal Practices was used to elicit data from the selected respondents. The instrument was validated through a pre-test survey, and a reliability co-efficient of 0.98 was achieved using Pearson Product Moment Correlation Co-efficient. Data were analysed using Statistical Package for the Social Sciences (SPSS) and were presented using descriptive and inferential statistical tools. Respondents' Level of Education, Pattern and Status of Residence and Age of respondents influenced the nature and pattern of waste disposal practices. The need to enforce relevant Waste Management Laws, in addition to engaging in a more enlightenment campaign on healthy waste disposal practices is recommended among others, towards the prevention of morbidity arising from poor management of wastes.

Keywords

Education, Wastes, Environment, Health, Practices, Akungba-Akoko, Ondo State

1. Background of the Study

The state of the environment is very crucial to the existence of every creature, just as it serves as habitation to any creature contributing to a large extent to the quality of life (Oreyomi, 2005). The failure of the numerous efforts of governments to address the problem of environmental health hazards in developing nations has been attributed to unhealthy socio-cultural practices, poor environmental sanitation education and awareness, low literacy level, bad governance, disregard to the rule of law and other forms of indiscipline (Omotosho, 2005). The generation of solid waste, the non-liquid and non-gaseous product of human activities which could take the form of refuge, garbage and sludge is reportedly on the daily increase, most especially in communities with specific pull factors of migration in Nigeria. Every resident generates waste arising from routine activities such as sweeping, bush cutting, remnants of food, washing, laundry and so on. The common reported type of solid waste found in various communities in Nigeria include paper, grass, nylon (in the manufacturing of pure water bags and sachets, ice cream, sweet or candy wrappers), sugarcane waste, maize or corn cobs and groundnut shells also contribute to some of these waste. The increase in population of an area without any corresponding increase in the available social infrastructures often results in the attendant infection with diseases and the problem of environmental sanitation.

Majority (87%) of Nigerians adopted various unsanitary methods of solid waste disposal thereby constituting nuisance, ugly sight, produce unpleasant odour, and constituting threats to public health. A significant proportion of urban waste in Nigeria is deposited either on the roads, or road sides, unapproved dump sites, in water ways, drainage system, or in open sites which adversely affect environmental friendliness (Abel & Afolabi, 2007).

Consequent upon poor waste disposal practices by residents, its management poses serious danger to the waste handlers and man has suffered in no small way from infectious diseases associated with food and water contamination of the subsurface water by the leachate from solid wastes which are heavily laden with toxic chemicals and pathogenic organisms (Adedeji, Odufuwa, & Adebayo, 2012).

Real life experiences have shown that waste management is at its lowest ebb in most rural communities in Nigeria because greater part of most communities do not benefit from public waste disposal services and therefore have to bury or burn their waste or dispose it indiscriminately. The situation becomes worse in the rainy season as the wastes get directly exposed to the rain, thus polluting the streets and nearby stream or block storm-water drains and thereby causing flooding. Akungba Akoko, has continued to witnessed to witnessed increasing environmental hazards due to poor wastes disposal practices without any tangible measure to forestall and curtail the menace.

Of the different categories of wastes being generated, solid wastes, poses a hydra-headed problem beyond the scope of various solid waste management systems in Nigeria (Alese, 2014), as wastes from both domestic and commercial activities are found on the streets. Waste could be an unofficial measure of prosperity. It can also be a major problem on man especially where it is not well managed. It is being observed that unregulated growth of urban areas and adequate infrastructural facilities for collection,

transporting, treating and disposal of waste have all contributed to increase in pollution. The heterogeneous mixture of plastics, cloths, metals and organic solution which are inevitable products of production increase as a result of urbanization that gives room for indiscriminate discharge of solid wastes and sewage thereby causing flooding which is a threat to life in general.

One major obstacle to the provision of latrines in some urban areas is highly connected with the small size of plot allocated for the purpose (Aina, 2006). It was observed that lack of knowledge, unaffordability and others are the main courses for lack of household toilets/latrines. The African continent especially, West Africa is yet to meet the Millennium Development Goals standard in sanitation. For instance, in 2008 Burkina Faso's improved sanitation coverage was 11%, Ghana had 13% and Mali 36%. There had been increased sanitation efforts recently but they have not been able to keep pace with population growth. There had been an increase of over 37 Million people in West Africa without access to sanitation between 1990 and 2008 (Adedeji, Odufuwa, & Adebayo, 2012).

There are myriad of evidences to confirm that the present majority of indigenous entrepreneurs in Nigeria live in sordid environment without toilet facilities and proper waste disposal. This is substantiated by the available data from the National Bureau of Statistics, household survey reveals that in Ondo State only 27.2% of the population has good toilet facility while 8.5% of the people defecate and urinate in water. Also, 28.3% and 48.0% of the population dispose refuse within the compound and unauthorised refuse heap respectively while, 47.3% (42.0%, 2.9% and 2.2%) of the people do not have access to potable water (Geoffrey, 2005). These confirm the level of poverty, the value given to infrastructural development by the government and the quality of life lived by Nigerians. Instead of having an atmosphere where economic and environmental progress proceeds in harmony, the reverse is the case. The atmosphere is undergoing an unprecedented change, largely as a result of human activities, fossil fuel, burning, deforestation and agricultural practices. The destruction of the rain forest is getting worse especially in low and middle income countries like Nigeria (Aina, 2006). It is sad to note that a nation that is struggling to build her economy is still prone to economic losses due to natural hazards like recurring floods which also result in major loss of human lives and livelihoods, the destruction of economic and social infrastructure as well as environmental damages (Halou, 2001).

In Nigeria the history of flood events is as long as the existence of human and it is aggravated by the increasing population and abuse of the environment. Urban flooding is a constant occurrence in towns and cities where there is little or no provision for surface drainage or where existing drainage has been blocked with municipal waste. Nigerian cities today face problems which include rapid urbanization, deteriorating environment, urban decay, unclear refuse flooding, erosion and pollution (Adedeji, Odufuwa, & Adebayo, 2012).

In recent years, recent real life experiences have justified that fact that the unprecedented rate of flooding implicates increasing rainstorms due to global warming and climate change. Flooding is associated with haphazard waste disposal and governments' provision is highly inadequate. Poor people are more vulnerable to disasters and the percentage of poor women is higher. Women are therefore,

more susceptible in this case. Environmental degradation displaces communities especially, women from their entrepreneurial activities. It impacts negatively on health well-being and quality of life of the people at large, especially, the female. Since the roles of women are crucial to the production of food and nutrition, the enhancement of subsistence businesses, informal sectors and the preservation of the environment are very crucial. Women are the most stable members of the community. It has been observed that a very important but frequently ignored aspect in disaster management efforts in Nigeria is risk assessment.

Urbanization, an increase in the rate of movement from the rural to the urban settings and the inability of the government to device appropriate strategies through policies are regarded as some of the major factors of urban flood risk. Urbanization restricts and obstructs water flows thereby exacerbating the damages caused by flood. A significant proportion of the residence in Akoko land empties their refuse into the few drains provided by the household and river channels during rainfall. This results into a significant change in base flows thereby hindering a free flow of flood. Nigerian urban areas are particularly vulnerable to flooding due to inadequate capacity for drainage structures, changes in eco-system through the replacement of natural and absorptive soil cover with concrete and deforestation of hillsides; this has the effect of increasing the quantity and rate of runoff and through soil erosion and the silting up of drainage channels (Adedeji, Odufuwa, & Adebayo, 2012). The awareness and understanding of climate change should prepare individuals, organizations and government for a prompt action towards the mitigation of environmental degradation. Today, there is a growing awareness of the need for sustainable environment and development by the general public, industry and academia. Nigerians need to know the level of contribution of individuals to creating the problem of waste disposal.

2. Discussion and Method

2.1 Statement of the Problem

Human activities create waste, and it is the poor way these wastes are handled, stored, collected and disposed, that pose risks to the environment and to public health. The study established nexus between population increase and corresponding increase in human activities. The extent of environmental impact has grown. Hence, man continues to alter the structure and nature of his environment through mining and burning of fossil fuel of forest, release of wastes through domestic, industrial and agricultural processes. Rural areas in Nigeria are characterized by near absence of vital social services and infrastructure required for human living. The increasing numerical strength of the population in Akoko land and lack of adequate and appropriate planning for development have resulted into the over dependency on the existing infrastructure, which are currently being over-stretched. The groups at risk are numerous including population of pre-school children; waste workers, students, people residing close to waste disposal sites and those accessing their domestic water supply from polluted water sources, entire residents (United Nations Environment Programme, 2003).

In most low-to medium-income developing nations, almost 100 percent of generated waste goes to landfill. Even in many developed countries, most solid waste is landfilled. For instance, within the European Union, although policies of reduction, reuse, and diversion from landfill are strongly promoted, more than half of the member states still send in excess of 75 percent of their waste to landfill (e.g., Ireland 92 percent), and in 1999 landfill was still by far the main waste disposal option for Western Europe (United Nations Environment Programme, 2003). An improper waste disposal mechanism among residents is a social problem that needs to be addressed. Findings revealed majority of the problems to include pests and diseases, poison and pollution, diseases such as tetanus when they scratch or cut themselves on pieces of waste such as glass, bottles, social and economic problems, living without toilets, psychological impacts and indiscriminate disposal of sanitary towels (Pasquini & Alexander, 2004).

Many diseases are likely to be contracted from unsanitary condition which results from improper waste disposal practices, lack of hygiene could also cause infant mortality, though hygiene education and awareness is salient in issues of sanitation as water and sanitation related diseases are very much dependent on behavioural practices in the disposal of available wastes (Abel & Afolabi, 2007). Since women are part of those who resort to defecate openly especially using unclean and not private areas, the trend is assumed to be continuous because women are primary indicators in the home and could transfer the skill.

One of the diseases that are likely to be contacted in an unhealthy environment is Schistosomiasis. It is a chronic disease caused by nematode worms of the genus Schistosoma. The disease transmission occurs when the larval form of the parasite which is released by fresh water snails penetrates people skins while they are in infected water. In the human body, the larva develops into adult Schistosomes which live in the blood vessels where the females release eggs. Some of the eggs are passed out of the body in faeces or urine to continue the parasitic life-cycle; others become trapped in body tissues causing immune and progressive damage for organs. Trachoma is another likely impact of improper disposal of waste practices. It is a chronic conjunctivitis caused by the bacterium chlamydia trachomatis. It is one of the world's leading causes of preventable blindness having infected an estimated 6 million people.

More so, majority of Akungba residents are entrepreneurs engaged in one activity or the other. Farming, food production (garri, elubo, fufu, iru, palm oil), small scale retailers, office workers, health workers, teachers, students, etc., who in one way or the other generate wastes daily. The preparations of these food productions are mostly done with leaves, firewood, nylon and plastics which eventually turn to waste and there are no proper and adequate mechanisms in place of disposing them.

As in many developing countries, waste management in Nigeria is a complex issue that has been a major issue on the priority list of successive government, local authorities and international donors in recent years. Waste management is a growing problem in Nigeria and despite large investments that have been made to meet the challenges of effective management in urban areas, there is a little

evidence that such efforts are having their expected effect. Although, huge capital investment is required to improve waste management, social, economic as well as behavioural factors among others are required to improve waste management in urban and rural areas to be successful. It is in this light that this study aims to investigate the influence of education, occupation, gender and specific place of residence on waste disposal practices among residents in Akungba Akoko, Ondo State.

2.2 Research Questions

1) What are the available Waste Disposal Practices among residents in Akungba?

2) Can social factors (Level of education, occupation, sex and specific place of residence) influence of waste disposal practices?

2.3 Research Objectives

The main objective of this study is to examine social factors influencing waste disposal practices among residents in Akungba Ondo State. The working objectives as follow:

1) To report Wastes Disposal Mechanisms in the Akungba Akoko.

2) To determine whether some social factors (Level of education, occupation, sex and specific place of residence) will influence waste disposal practices.

2.4 Research Hypotheses

1) There is no significant relationship between level of education and waste disposal practices.

2) There is no significant relationship between occupation and waste disposal practices.

3) There is no significant relationship between sex and waste disposal practices.

4) There is no significant relationship between specific place of residence and waste disposal practices.

2.5 Research Method

This study was conducted in Akungba Akoko, in the Akoko North East local government areas of Ondo State and the host community of the State University. This study, a social survey of descriptive type, adopted a double-staged random sampling. Akungba was stratified into three zones on the basis of core-cultural characteristics of the respondents, using the Stratified Random Sampling. Zone A consists of residential areas accommodating the University Students, Zone B consists of the areas where there are mixtures of both students and indigenes while Zone C consists of areas of the concentration of pure indigenes. Simple Random Sampling Technique was then used to select at 55 respondents (aged $\geq$ 15 years) from each of the zones, making a total 165 respondents for the entire study. The study did not achieve 100% instruments returned rate, the 147 questionnaires (representing 89.1%) retrieved from the respondents formed the basis of this analysis. The instrument, a structured questionnaire, titled Social factors & Waste Disposal Practices (SDWDPs) contained both open and closed ended questions on Socio-demographic characteristics and Waste Disposal Practices. The instrument was validated through a pre-test survey, and a reliability co-efficient of 0.98 was achieved using Pearson Product Moment Correlation Co-efficient. Data were analysed using SPSS and are presented using descriptive and inferential statistic analytical tools.

3. Findings

3.1 Sample Characteristics

Out of the 150 questionnaire distributed, 147 returned formed the basis of the analysis presented below. Data on sex indicate that 53.1% were males while 46.9% were females. Close to 70% were within 20-29 years age cohort while about 25.8% were 30years and above. Less than 10% were between 15-19 years. The mean age of the respondents stood was 44 years, of the 35.4% who were ever married, 75% were living with their spouse, separated (23%) while just 2% were divorced. On fertility behaviour among the married respondents, 76.8% had between 1-2 children 3-4 children (15.6%) while 7.5% had 5-6 children. The mean reproductive behaviour stood at approximately two children. An overwhelming majority were Christians (82.3%), Muslims (15.6%) while only 2.1% were adherents of African Traditional religion.

On occupation, less than half (49%) were students, traders (17.7%), Artisans (18.4%), farmers (8.2%), teachers (5.4%) and local council workers (1.4%). The level of education was relatively high, only 6.8% had no formal education, primary education (17.7%), secondary (38.8%) and post-secondary education (36.7%). The mean monthly income stood at N17,000 (The data above are presented in table 1in the appendix 1).

3.2 Solid Waste Disposal Mechanisms

Respondents identified with of the following waste disposal mechanisms were available in the community.

Table 1. Solid Waste Disposal Mechanisms √

	Responses	
Mechanism	Yes	No
Sanitation vehicle		√
Suction sewage	√	
Foecal suction		√
Road sweeper		√
Swinging arm garbage		√
Self-loading garbage truck	√	
Rubbish bin and container	√	
Compressed garbage truck	√	
Arm type carriage		√
Suction sewage truck		√

Source: field work survey, 2015.

Unlike in other cities where there are numerous waste disposal mechanisms from where individuals

make choice, there were only four available waste disposal mechanism in the study community. The table above shows that there were no foecal suction, no road sweepers, no swinging arm garbage truck, no self-loading garbage truck, no carriage removal garbage. The widely used and available waste disposal mechanism here is the use of rubbish bin and container with 73.5% who use this and 26.5% who do not also with just .7% of people who use suction sewage. This could be the reason why rubbish is being littered all around the environments, road paths and even streams or river channels, leading to drainage blockages and stagnant water in some areas.

3.3 Waste Disposal Practices

Table 2. Waste Disposal Practices

Waste Disposal Practices	F (N=147)	%
Dumpsite	75	51.0
Waste Management Agent	17	11.6
Incinerator	05	03.4
Specific Others (Gutter, river channels, landfill & dunged holes)	50	34.0
Total	147	100

Source: field work survey, 2015.

As indicated in the table above, the modes of disposal adopted by the respondents vary among dumpsites, waste management agents, incinerators and those who dump anywhere. Majority use dumpsite with 51.0% which is about half of the people, 11.6% waste agency and 3.4% uses incinerator and 34.0% dump anywhere. From the foregoing, we can deduce that majority of the people dump their dirt and waste indiscriminately which is part of the reasons why the community is untidy. Also, it might be because of financial constrains or even lackadaisical attitudes of people.

3.3.1 Social Factors (Education, Occupation, Sex) & Waste Disposal Practices

Three hypotheses above were framed to ascertain the relationship between the three social factors (education, occupation and sex) and waste disposal practices used by the sample. Are there influences of any of the social factors on the specific waste disposal practice? The data intends to test if any of waste disposal practice is influenced by one's level of education, nature of occupation or sex.

3.3.2 Level of Education & Waste Disposal Practices

Data on the level of education were cross-tabulated with the reported waste disposal practices utilized by the sample to ascertain if there is any (significant) relationship between the two variables to measure the extent of influence of a variable on the other.

Table 3. Bi-Variate Analytical Test of Relationship between Level of Education and Waste Disposal Practices

Social factor	Waste Disposal Practices					
Level of Education	Open Dumpsite F (%)	Agents F (%)	Incinerator F (%)	Specific Others F (%)	Total	χ^2
No formal education	2 (2.7)	0 (0.0)	0 (0.0)	8 (16.0)	10	
Primary Education	14 (18.7)	3 (17.6)	0 (0.0)	9 (18.0)	26	
Secondary	30 (40.0)	3 (17.0)	1 (20.0)	23 (46.0)	57	23.698*
Education	29 (38.7)	11(64.7)	4 (80.0)	10 (20.0)	54	
Tertiary Education						
Total	75	17	5	50	147	

Source: field work survey, 2015.

About half (51%) of the total respondents utilized open dump sites to dispose of their wastes. A distribution of the sample (75) on the different levels of education shows that two-fifths had secondary education, tertiary education (38.7%) & primary education (18.7%) while the remaining 2.7% had no formal education. An overwhelming majority (64.7%) of those who utilized waste disposal agents had tertiary education. Data shows that the higher the level of education, the higher the tendency to utilize incinerator facilities to dispose of their wastes as 80% of the total respondents utilized incinerator had tertiary education while the remaining 20% had secondary education. About 34% utilized wastes disposal practices in the category of specific others (gutters, rivers channels, land fill and dunged holes) to manage their solid wastes. There seems to be a direct relationship variation between the use of each of the waste disposal mechanism and the levels of education. This indicates that the higher the level of education, the higher the tendency to use any of the methods of waste disposal.

Data also indicate that their waste disposal practice gets meaningful and appropriate as their level of educational qualification increases. Thus there exists a significant relationship between waste disposal practices and level of educational qualification as it is also seen in the p value which is less than .005. Ones level of education will have a significant influence on the waste disposal behaviour among the residents in the study area.

3.3.2 Occupation & Waste Disposal Practices

Data obtained on the specific occupation of the respondents were cross-tabulated with the waste disposal practices to ascertain if there is any (significant) relationship between the two variables to measure the relative of influence of a variable on the other.

Table 4. Bi-Variate Analytical Test of Relationship between Occupation and Waste Disposal Practices

Social factor	Waste Disposal Practices					
Occupation	Open Dumpsites F (%)	Agents F (%)	Incinerator F (%)	Specific Others F (%)	Total	χ^2
Schooling	36 (48.0)	11 (64.7)	5 (100.0)	20 (40.0)	72	
Trading	13 (17.3)	1 (5.9)	0 (0.0)	12 (24.0)	26	
Artisan	17 (22.7)	3 (17.6)	0 (0.0)	7 (14.0)	27	
Farming	4 (5.3)	0 (0.0)	0 (0.0)	8 (16.0)	12	
Teaching	4 (5.3)	2 (11.8)	0 (0.0)	2 (4.0)	8	
Government	1 (1.3)	0 (0.0)	0 (0.0)	1 (2.0)	2	18.363*
Total	75	17	05	50	147	

Source: field work survey, 2015.

Of the half of respondents (51%) who utilized open dumpsites, about 48% were students, traders (17.3%), Artisans (22.7%), farming (5.3%) and civil service (1.3%). This shows that most students dumped their solid wastes in open dump sites. About 65% of those who utilized waste disposal agents were students while the remaining 35% belong to other categories of occupation. For those who utilised specific others (Gutter, river channels, landfill & dunged holes), Students (40%), traders (24%), Artisans (14%), farmers (16%), teachers (4%) and civil servants (2%). General observation of the data above shows that the students had the highest frequency and their percentages for the various disposal practices is greater than other forms of occupation, this could be so, because majority of the population in the location of this study are students and these could also be a reason why their waste disposal practices percentages are higher than others. Generally, there is no significant relationship between occupation and waste disposal practices because the p value is .244 which is greater than the 0.05 of the maximum level of error allowed.

3.3.3 Gender & Waste Disposal Practices

About 52% of those who utilized open dump sites are female while the remaining 48% were males. The percentage distribution by sex over all the wastes disposal practices are indicated as follows; Waste Disposal Agents (male, 82.4%, female, 17.6%), Incinerator (male, 40%, female, 60%), Specific others (male, 52%, female, 48%). On the average, sex distribution of the respondents has no significant relationship and will not influence the waste disposal practices among the selected sample.

Table 5. Bi-Variate Analytical Test of Relationship between Gender and Waste Disposal Practices

Social factor	Waste Disposal Practices					
Gender	Open Dumpsites F (%)	Agents F (%)	Incinerator F (%)	Specific Others F (%)	Total	χ^2
Male	36 (48.0)	14(82.4)	2 (40.0)	26 (52.0)	78	
Female	39 (52.0)	3(17.6)	3 (60.0)	24 (48.0)	69	6.993*
Total	75	17	5	50	147	

Source: field work survey, 2015.

There is no significant relationship found between sex of respondents and their waste disposal practices. .072 is greater than 0.05 thus there is no significant relationship between the two variables.

3.3.4 Zones of Residence & Waste Disposal Practices

Table 6. Test of Relationship Between Zones of Residence and Waste Disposal Practices

Variables	Waste Disposal Practices					
Zones	Open Dumpsite F (%)	Agents F (%)	Incinerator F (%)	Specific Others F (%)	Total	χ^2
A	58 (53.7)	16 (94.1)	5 (100.0)	29 (58.0)	108	
C	17 (43.6)	1 (5.9)	0 (0.00)	21 (42.0)	39	12.237*
Total	75	17	5	50	147	

Note. Source: field work survey, 2015.

As stated earlier, the study community was divided into three hypothetical zones (A, B & C). Attempt is made here to examine the relationship between specific location of the respondents and waste disposal behaviour. For this purpose, zone A where most students reside and zone C inhabiting mostly the indigenous population were chosen. The intent is to find out if any significant relationship exits in waste disposal behaviour between the residents of the two locations. For open dump sites, zone A (53.7%) and zone C (43.6%), wastes disposal agents, zone A (94.1%) and zone B (5.9%), specific others, zone A (58%) and zone B (42%)

There is a significant relationship between place of residents and waste disposal behaviour with p value .007 which is lower than the maximum level of error allowed which is 0.05. Data from zone A is highly significant; dumping sites including all the waste disposal practices took place in zone A. The only incinerator in the community is located in zone A. A significant test between the locations and waste disposal practices shows a high correlation. The residential area of an individual is a significant factor influencing the waste disposal behaviour among residents in Akungba Akoko, Nigeria.

4. Summary & Recommendations

Of the social variables listed, this study, a community research, finds a significant relationship between waste disposal practices and specific place of residence & level of education. This confirms that the location of the residence of an individual in Akungba-Akoko will influence his waste disposal behaviour because of associated factors such as availability and proximity of the wastes disposal outlets. The study also confirms that those who live very close to a waste disposal facility are likely to make use of it than those whose residences are far off. The strong significant relationship between the level of education of the residents and his waste disposal practices, as confirmed by this study, speak volumes of the need to step up education about environmental and safety. The education should be done through public awareness and community participation which would assist in obtaining guidance on strategic planning of solid waste management and enhance appropriate levels of community participation, a two-way communication planning and implementing must be part of the integrated solid waste management services. The above recommendations will ensure healthy waste management and disposal practices among the residents irrespective of the sex or occupation. More waste disposal facilities should also be provided in all the zones in the community to ensure equitable distribution.

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