

Waste Management Practice among Students of Doherty Memorial Grammar School, Ijero Ekiti, Ekiti State, Nigeria

Victor SHEGUN Oluwatuyi^{1,2*}, Blessing Alagbada², Alaba Tolulope Agbele³, R.A Okunade⁴, Toyin Babalola⁵, Abimbola M. Olusuyi⁶

¹Department of Environmental Health Science, Kwara State University, Malete, Ilorin, Nigeria

²Department of Public Health, Ekiti State College of Health Sciences and Technology, Ijero-Ekiti, Nigeria

³Department of Basic Medical Science, Ekiti State College of Health Sciences and Technology, Ijero-Ekiti, Nigeria

⁴Department of Dental Health, Ekiti State College of Health Sciences and Technology, Ijero-Ekiti, Nigeria

⁵Department of Environmental Health, Ekiti State College of Health Sciences and Technology, Ijero-Ekiti, Nigeria

⁶Department of Community Health, Ekiti State College of Health Sciences and technology, Ijero-Ekiti, Nigeria

*Corresponding author

Abstract:- Poor waste management and handling continues to be a major public menace notably in Secondary Schools in Nigeria. This has greatly impacted public health and contributed to loss of aesthetic value of the environment. The need to properly handle and dispose waste sanitarly becomes apparent in the face of the rising challenges and the nuisance constantly constituted daily. This research work examines solid waste practice among students of Doherty Memorial Secondary School Ijero Ekiti, Ekiti State, Nigeria. Questionnaire was designed and used as instrument to obtain information from selected respondents on waste management practice in the School. A total number of one hundred and twenty six (126) students were randomly selected from JSS1-SSS3 who filled the questionnaires which were all retrieved personally. Personal observation and interview method was employed. Analysis of data was done using simple percentage and graphical representations while the result showed evidence of poor waste disposal practice in Doherty Memorial Secondary School Ijero. it was observed that there is limited access to health information on ideal waste management practice among other waste management challenges in the study area.

Keywords: Waste Management, Practices, Secondary School, Nuisance, Public Health, School Health

I. INTRODUCTION

Waste is useless and unwanted materials which are discarded after their natural utility has been discarded. The menace of waste continue to increase on daily basis as there are little or no efforts by the government to regulate waste generation and disposal.[1]Waste includes those materials that are discarded, or are intended to be discarded. Its menace in Nigeria as a developing country requires urgent attention [2,3]. All waste disposal activities require a permit from the local authorities, whether on-site or off-site and they are to be discarded sanitarly [8,9]. There are various types of wastes according to how they are handled and treated; Recyclable general waste, Non-recyclable general waste, Recyclable special management waste, Non-recyclable special

management waste, Recyclable dangerous waste , Non-recyclable hazardous waste[5,6,7]. On a general note, waste is generated from schools, churches, mosques, markets, home and work place which causes unsightliness and offensive odour. The poor attitude of an individual in respect to poor disposal of waste water is one of the major challenges of the community. Another challenge of waste management is population. Urbanisation has increased rapidly or tremendously[10,11,12].Waste has witnessed an unprecedented increased according to law of economics the higher the population is the higher the waste generated. Waste; Human activities result to waste generations. The end product of many anthropogenic activities such as Domestic, Agriculture, Industrial activities gives rise to waste generation[14]. Waste is unwanted material or substance whose primary utility has been exhausted as a result of which it is discarded away or disposed or abandoned[16,17]. Such waste product is generated through man to man activities and profit making process in the community. Waste generated is described as discarded product which are solid, liquid and gaseous substance which are expected to be removed from our immediate environment according to the provision of law as poor waste disposal has become a major problem in Nigeria[19,20,23]. It is becoming a tradition that people are found of littering their household and their community[24]. This is caused by population increase, degree of commercial activities, In an area, economic generating activities, level of education of the people, waste disposal, poor land use, management, health and waste handling, level of enlighten of the people. All these are combined together to allow domestic waste become source of health hazards to the community. Waste is any unwanted or discarded material at a particular place and time arising from natural community activities. Waste are to be regarded as any discarded, rejected, abandoned, unwanted or surplus matter whether or not intend for sale or for recycling, reprocessing, recovery or participation by separate operation from that which produced

the matter or anything declared by regulation or by an environmental policy to be a waste[25,26]. **According to World health Organisation(WHO)** waste are useless, it is obvious that man determines his own health due to his action, habit, behaviour, attraction and activities in its environment. However the problem of domestic waste should be approach from environmental sanitation and provision of sanitary facilities are responsibility of both individual and government respectively [27].

Objective

The objective of this study is to assess waste management practice among students of Doherty Memorial Grammar School, Ijero Ekiti, Ekiti State, Nigeria.

II. METHODOLOGY

The study area is Doherty Memorial Grammar School Ijero Ekiti, Ekiti State, Nigeria with a population of 1200 students from JSS1-SSS3. One hundred and twenty six (126) students were selected randomly with 21 students selected from each class. Each class is grouped into A-C from JSS1-SSS3 with 7 student selected from each class. Hence, a total of 21 students were randomly selected from JSS1 – SSS3.

S/N	CLASS	GROUP	SAMPLE
1.	JSS 1	1A	7
		1B	7
		1C	7
2	JSS2	2A	7
		2B	7
		2C	7
3	JSS3	3A	7
		3B	7
		3C	7
4	SSS1	1A	7
		1B	7
		1C	7
5	SSS2	2A	7
		2B	7
		2C	7
6	SSS3	3A	7
		3B	7
		3C	7
TOTAL CLASS		18	126

The questionnaire was well structured and administered to the respondents. The questions were tailored towards waste management practice in the school. A pilot study on a group which is not part of the main study was done to test the instrument and the reliability test revealed 0.89. Data were analyzed using simple percentage method, frequency table and descriptive analysis.

Table 1: Showing the Age distribution and Sex of respondents

AGE	FREQ UENC Y	PERCENT AGE	SEX	FREQUE NCY	PERCENT AGE
10-15 years	84	66.67%	MALE	47	37.30%
16-20 years	42	33.33%	FEMA LE	79	62.70%
TOTAL	126	100%	TOTAL	126	100%

Figure1. Sex of respondents

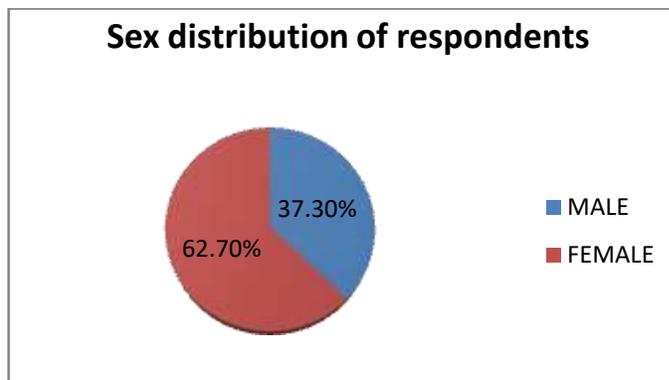


Table 2: shows methods of waste disposal in use in the school

Methods	Frequency	Percentage
Burning of waste	78	61.9%
Sanitary land fill	30	23.8%
Compost	0	0%
Recycling	0	0%
Re-use	0	%
Hog feeding	2	1.6%
No idea	16	12.7%
TOTAL	126	100

Figure 2. shows the two most practiced waste disposal method

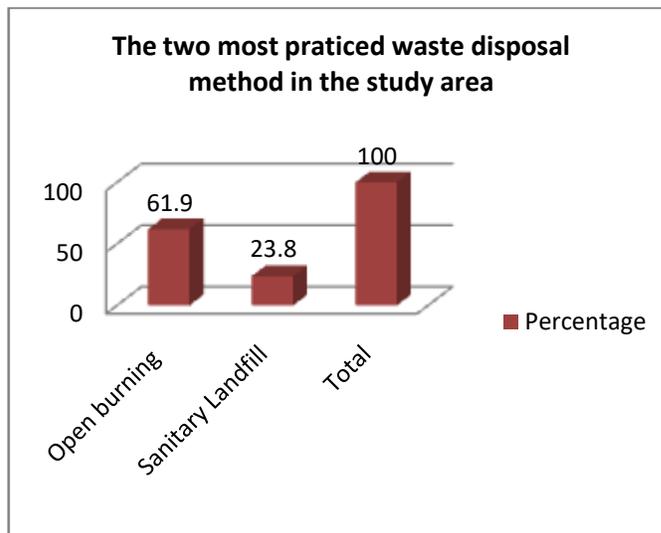


Table 3: shows method agreed to be adopted for use in the school

Methods	Frequency	Percentage
Hog feeding	12	9.52%
Incineration	60	47.62%
Pulverization	5	3.37%
Organic compost	10	7.94%
Sanitary Land fill	31	24.60%
Control Tipping	1	0.8%
Open dump	4	3.17%
Burning in the open	2	1.6%
Discard into public drains	1	0.8%
TOTAL	126	100%

Figure3 shows two most preferred method adopted for waste disposal in the school

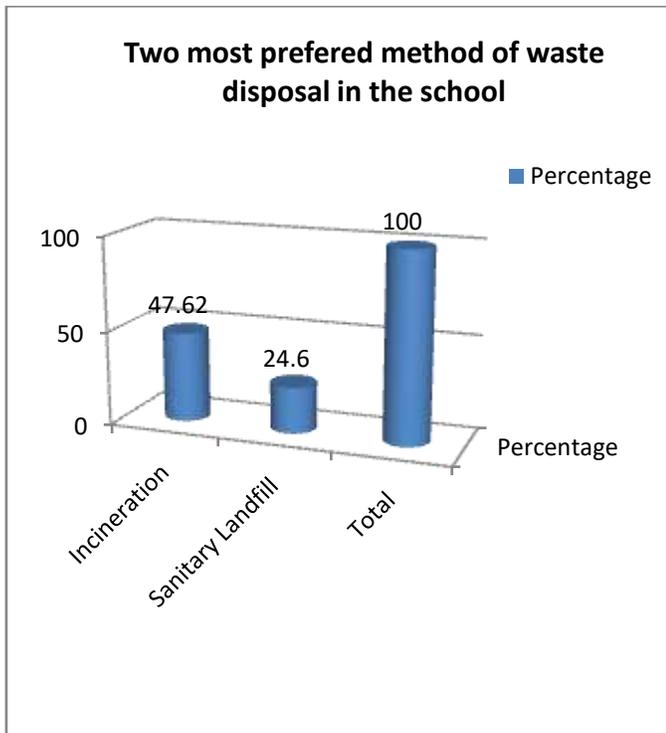


Table 4. Noticeable Effects of poor waste Management practice in the school

Effects	Frequency	Percentage
Fly Infestation	10	7.94%
Rodent Infestation	5	3.97%
Offensive odor	30	23.81%
Unsightliness	49	38.89%
Loss of Aesthetic value	12	9.52%
Dirty environment	20	15.87%
TOTAL	126	100%

Figure 4 shows three most identified effect of poor waste management.

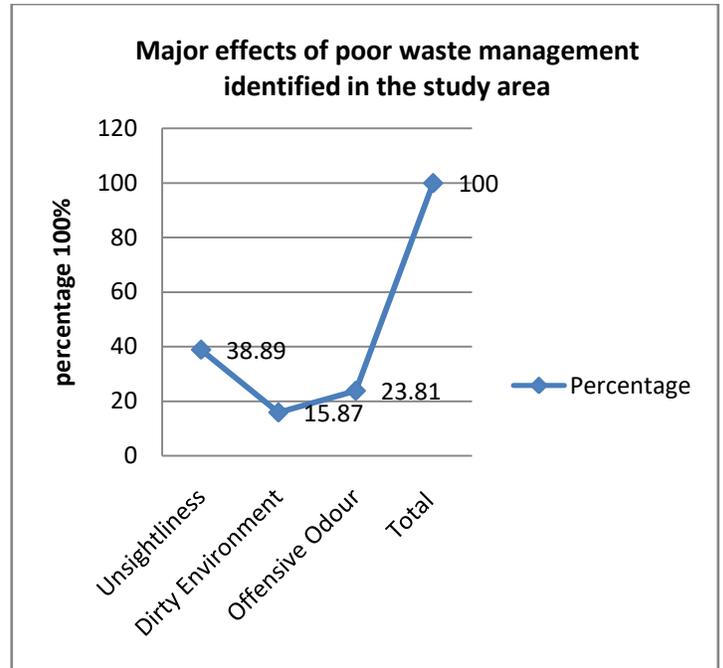


Table 5: shows rating of waste management in the school

Rating	Frequency	Percentage
Excellent	3	2.39%
Good	10	7.94%
Fair	23	18.3%
Poor	90	71.42%
TOTAL	126	100%

Figure 5 shows rating of waste management practice in the study area.



Table 6; shows recommended solutions to improve waste management practice

Recommendations	Frequency	Percentage
Health Education	24	19%
Sanctions against poor disposal of waste	10	8%
Empowering the sanitation prefect and sanitation team for proper monitoring of waste disposal.	29	23.4%
Provision of Waste bin at designated areas and proper disposal	51	40.5%
Use of sanitation post i.e keeps the school clean.	12	9.5%
TOTAL	126	100%

III. RESULT AND FINDINGS

The result showed a higher percentage of the respondents are within the age range of 10-15 years while 79% of all the respondents are female. It was revealed in the study that open burning of refuse is the major waste disposal practice in the school which is unhygienic and insanitary, after careful explanation on the various methods of waste management while administering the questionnaire, the respondents were asked to choose their most preferred method of waste management with about 47.62% preferred incineration method while some preferred sanitary landfill indicating 24.60%. The respondents claimed poor waste management practice leads to unsightliness in the environment, fly infestation, Rodent Infestation, offensive odor, loss of aesthetic value and dirty environment. The respondent were asked to rate waste management in the school using the rating scale, majority rated waste management practice in the school as poor indicating 71.42% of the total respondents. Findings revealed that Health Education and awareness, sanctions against poor disposal of waste in the school, empowerment of the sanitation prefect and sanitation team for proper monitoring of waste disposal, strategic provision of Waste bin at designated areas and proper disposal, use of sanitation post in designated areas to pass instructions on sanitation in the school among others were identified as measures to improve on waste management in the School.

IV. CONCLUSION

Solid waste management practice in the study area is poor as the major method of disposal is open burning which contributes to environmental pollution and constitutes nuisance. Hence, the need to create awareness through seminar, sensitization and school health program becomes more apparent. The School Authority should also do more by making provision and strategic placement of waste disposal materials and facilities to eliminate potential hazards and public health issues that could arise from indiscriminate disposal of waste in the school. The Government and the Community should also assist the School to meet up with health standard by making provision for infrastructural facilities that will promote sanitation and hygiene practices in the School.

AUTHOR CONTRIBUTIONS

Victor SHEGUN **Oluwatuyi 50%**, Blessing **Alagbada 10%**, Alaba Tolu **Agbele 10%**, R.A **Okunade 10%**, Toyin **Babalola 10%**, Abimbola M. **Olusuyi 10%**

REFERENCES

- [1]. Agbola T (1993). "Environmental Education in Nigerian Schools". In Filho W.L. (ed) Environmental Education in the Commonwealth, then Commonwealth of learning, Vancouver.
- [2]. Ajani OIY (2007). Determinants of an effective solid waste management in Ibadan Metropolis, Oyo state, Nigeria. *J. Food, Agric. Environ.* 6(1): 152-157.
- [3]. Ballantyne R (1998). Interpreting 'visions': Addressing environmental education goals through interpretation. In: D. Uzzell and R Ballantyne (Eds) Contemporary Issues in Heritage and Environ. Interpr. Pp. 9-77.
- [4]. Eagles PFJ, Demare R (1999). Factors influencing children's environmental attitudes. *J. Environ. Edu.* 30(4): Pp. 33.
- [5]. Eero O, Grendstad G, Wollebak D (2001). Correlates of environmental behaviors: Bringing back social context. *Environ. Behavior.* 33: 181- 208.
- [6]. Evans SM, Gill ME, Marchant J (1996). School children as educators: The indirect influence of environmental education in schools on parents' attitude towards the environment. *J.*
- [7]. Fransson N, Garling T (1999). Environmental concern: Conceptual definitions, measurements, methods and research findings. *J. Environ. Psychol.* 19: 369-582.
- [8]. Gallagher J, Wheeler C, McDonough M, Namfa B (2000). Sustainable environmental education for a sustainable environment: lessons of Thailand for other nations. *Walter Air Soil Pollut.* 123(1-4): 489- 503.
- [9]. Ifegbesan A (2008). Exploring secondary school students' understanding and practices of waste management in Ogun State, Nigeria. *International J. Environ. Sci. Edu.* 3(3): 201-215.
- [10]. Jones RE, Dunlap RE (1992). The social bases of environmental concern. Have they changed over time? *Rural Sociol.* 57(1): 134-144.
- [11]. Joseph K (2006). Stakeholders participation for sustainable waste management. *Habitat Int.* 30: 863-871.
- [12]. Kofoworola OF (2007). Recovery and recycling practices in municipal solid waste management in Lagos, Nigeria. *Waste Manage.* 27(9): 1139-1143.
- [13]. McKenzie-Mohr D, Nemeroff LS, Beers L, Desamrais S (1995). Determinants of responsible environmental behavior. *J. Social Issues.* 51: 139-156.
- [14]. Ogunyemi B (1994). Towards better management of urban wastes in Nigeria: Environmental education approach. In Albert, I. O. (ed), Proceedings of the International Symposium on Urban Management and Urban Violence in Africa, Vol.1., Ibadan, 7-11 November 1994. Ibadan: Institut de Recherche en Afrique (IFRA).
- [15]. Ojeda BS, Armijo VC, Ramirez BM (2000). The potential of recycling household waste: A case study from Mexicali, Mexico. *Environ. Urban.* 12: 163-173.
- [16]. Omoleke II (2004). Management of Environmental Pollution in Ibadan, An African City: The Challenges of Health Hazard Facing Government and The People. *J. Hum. Ecol.* 15(4): 265-275.
- [17]. Osinowo FAO (2001). Towards effective waste management in Nigeria. Nigerian Conservation Foundation, Lecture Series No. 1, a publication of the NCF. Pacey A (1990). "Hygiene and Literacy", in Kerr, C(ed), Community
- [18]. Health and Sanitation, Intermediate Technology Publications, Nigeria. Raudsepp M (2001). Some socio-demographic and socio-psychological predictors of environmentalism. *TRAMES.* 5(4): 355-367.
- [19]. Scott D, Willets FK (1994). Environmental attitudes and behaviour. *Environ. Behaviour.* 26(2): 239-261.