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Comparative Assessment of the Knowledge and Prevalence of Health Related Disorder Associated with Living Around the Abattoir Waste Dumpsite In Ogun-State, Nigeria. (A Study of Ijebu-Ode and Ijebu-Igbo Local Government Area of Ogun-State, Nigeria)

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Abstract: Abattoirs are a major source of water, land and air pollution worldwide. This study is to compare the knowledge and prevalence of health related disorder associated with living near Abattoir waste dumpsite in Ijebu-Ode and Ijebu-Igbo, Ogun-State Nigeria. Multistage sampling method were adopted using a semi-structure questionnaire total 206 on household heads on ratio 1:1 to each study areas and data collected was analyzed electronically with Epi-Info 7.2.1 version. The respondents (99.0% of Ijebu-Ode and 97.1% of Ijebu-Igbo) had good knowledge of the health impact of living near the dumpsite while 80.6% and 48.5% of the respondents reported frequent sneezing in Ijebu-Ode and Ijebu-Igbo respectively. Data analyzes showed a significant difference in frequent sneezing (p=0.001). Again, 69.1% and 23.3% of respondents reported skin rashes with a significant difference (p=0.001). There were statistical significant difference on spitting, nausea and unpleasant odour with p-values of 0.001, 0.001 and 0.001 respectively. Common cold and cough reported had no significant difference (P=0.49; 0.06). Conclusively, abattoirs should be located away from human habitation.

Keywords: - Abattoir, Dumpsite, Disorder, Health and Waste.

1. INTRODUCTION

Global Solid Waste Generation is estimated to be about 11.2billion tons per year which is projected to increase by 19billion tons per year by 2025 [1]. Out of the solid wastes.
Solid Waste Generation is an alarming issue worldwide due to the significant rise in population growth along with industrialization and urbanization not nit retains terrific

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pressure on the environment and public health [2]; [3]

The development and growth of livestock production are on the rise and have guaranteed a gradual supply of food for animals meant for slaughter and processing for human consumption. Abattoirs and slaughterhouses are major sources of water, Land, and air pollution worldwide. The dumping of solid waste has been related to environmental pollution. Solid waste is of major concern in urban areas because of the progressive increase within the population of individuals who board these urban areas, subsequently leading to a rise within the volume of waste generated. This waste generated is inevitable in the community, the problem of waste is often not whether it is generated but how it is managed after it will result in human communities being subjected to the unpleasant odour possible methane explosions, diseases vectors and rodents who feed on the wastes and unwholesomeness living environments to mention a few [4] open dumps approach as a solid waste disposal method is a primitive stage of solid waste management in many parts of the world. Improper of disposal of abattoir waste not only affects the air, water quality but also increases the threats to human health due to the presence of pathogenic microbes [5].

These dumpsites are found both within and on the outskirts of developing urban cities. These dumpsites turn into sources of environmental and health hazards to people living in the vicinity of such dumps [6]. Consistent with [7] many cities in developing countries face serious environmental degradation and health risks because of the weakly developed municipal solid waste management system. The open dumpsites in developing urban cities involve indiscriminate disposal of waste. They are controlled and therefore pose major threats to the health of the people and affect the landscape of urban cities [8]. The unattended wastes lying around harbour flies, rats and other creatures that in turn spread diseases. Normally, the abattoir waste is wet waste that when decomposed, releases a bad odour. The bad odour impacts the people settled next to the dumpsite which people settled around or next to them. The group in danger from this unscientific disposal of the waste include the population within the areas where there is no proper waste disposal method especially preschool children, waste workers and workers in facilities producing toxic and infectious material other high-risk group includes the population living near the waste dump. [9], [10] highlighted that in a good deal of health surveys a wide range of health problems including respiratory systems, irritation of the skin, eyes, and nose, gastrointestinal problems, psychological disorders and allergies have been discovered.

A. Description of the Study Areas

Ijebu-Ode is a town in Ogun-State, a southwestern geopolitical area in Nigeria, close to the A121 highway. The city is located 110 km road North-East of Lagos. It is within 100 km (62mi) of the Atlantic Ocean in the Eastern part of Ogun-state and possesses a warm tropical climate. It has a total population of 222,653 (2007 census) Ijebu-Igbo is the headquarters of the Ijebu-North Local Government Area in Ogun-state at $6^{0}57^{1}$ N $4^{0}00^{1}$ E. Furthermore, it has a total area of 967km2 (3735gm) and a total population of 284,336(2007 census).

It is bounded by Oluyole Local Government of Oyo state within the North, within the west by Ijebu-East Local Government, within the south by Ijebu-North East, Odogbolu and Ijebu-ode Local Government and within the East by Ikenne Local Government. The region is peopled by the Ijebus. Their predominant occupation includes timber business, farming e.t.c.

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2. RESEARCH METHODOLOGY

This study covered Ijebu-Ode and Ijebu-Igbo in Ogun State, Nigeria. The study is a descriptive that aims to compare the assessment of the knowledge and prevalence of health-related disorders associated with living around abattoir waste dumpsites. The sampling units were selected by using the multistage sampling method. An interviewer-administered semi-structured was issued to 206 (Two hundred and six) household heads of both Ijebu-ode and Ijebu-Igbo. The household heads were residents living 100 metres around the dumpsites. The data collected was analyzed electronically using Epi-Info 7.2.1 version.

3. RESULTS AND DISCUSSIONS

Table1: Demographic characteristic of the respondents.

Study Areas Frequency (%)			
Demographic characteristics	**Ijebu-Ode**	**Ijebu-Igbo**	**Statistics an P-value**
Age (years)			
≤ 20	22 (21.4)	2(1.9)	t =3.77
21-30	44 (42.7)	39(38.2)	df =188
31-40	21 (20.4)	10(12.3)	P = 0.00
41-50	9 (8.7)	40(38.8)	
51-60	2 (1.9)	1(1.0)	
61-70	5 (4.9)	4(3.9)	
71-80	0 (0.0)	4(3.9)	
81 Above	NIL	NIL	
Total	**103 (100)**	**103 (100)**	
Mean ± SD	27.62 ±9.80	35.18 ±11.21	
Gender			
Male	63 (62.80)	52 (51.56)	df =2
Female	40 (37.20)	50 (48.5)	X^2 =2.40
No response	0 (0.00)	1 (1.0)	P = 0.30
Total	**103 (100%)**	**103 (100)**	
Marital Status	**Ijebu -Ode**	**Ijebu-Igbo**	**Statistics and P-value**
Single	58 (56.74)	37 (36.11)	X^2 =9.82
Married	36 (35.08)	60 (58.8)	P =0.020
Divorced	3 (2.09)	1 (1.0)	Df =3
Widowed	6 (5.18)	5 (4.15)	
No response	0 (0.0)	0 (0.0)	
Total	**103**	**103**	
Educational Status	**Ijebu -Ode**	**Ijebu -Igbo**	**Statistics and P-value**
Primary	10 (9.30)	25 (24.75)	X^2 =12.87
Secondary	36 (35.08)	40 (38.23)	P =0001
Tertiary	51 (50.53)	24 (23.72)	Df = 3
No response	6 (5.18)	14 (13.42)	
Total	**103**	**103**	

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Duration of living around the dumpsites (years)	**Ijebu-Ode**	**Ijebu-Igbo**	**Statistics and P-value**
0-10	90 (92.7)	39 (40.17)	T = 8.21
11-20	9 (9.27)	32 (32.96)	df =190
21-30	1 (1.0)	16 (16.48)	P = 0.001
31-40	0 (0.0)	5 (5. 15)	
No response	3 (2.9)	11 (11.33)	
Total	103	103	

Table 1 shows the demographic characteristics of the respondents. The bulk of the respondents were between the age group of 21-30 years, where 44% of Ijebu-ode respondents were in this age group while 29% of the respondents from Ijebu-Igbo fell within the age group. The mean age of the respondents was 27.62 and 35.18 years for Ijebu-Ode and Ijebu-Igbo respectively. The gender of the respondents shows that 63% and 40% were male and female respondents in Ijebu-Ode while 52% and 50% Ijebu-Ijebu respectively. Although, 1% of the respondent did not show any gender status in Ijebu-Igbo. In Ijebu-Ode, the majority of the respondents were simple (58%) while in Ijebu-Igbo (60%) the respondents were married. Regarding the educational status, the majority of the respondents in Ijebu-Ode had tertiary education (51%) while in Ijebu-Igbo, (40%) of their respondents only had secondary education. Whereas, 14% of the respondents in Ijebu-Igbo did not give their response to their educational status while 6% of the respondents did that from Ijebu-Ode. There is no statistically significant relationship that showed the gender status distribution between Ijebu-Ode and Ijebu-Igbo. While there is a statistically significant relationship between age, employment status, marital status, educational status, and the duration of living around the dumpsites.

Table 2: Knowledge of respondents towards the health conditions associated with living around the dumpsite.

		Frequency (%)			
No	**Knowledge of Health Conditions**	**Ijebu-Ode**		**Ijebu-Igbo**	
		Yes	**No**	**Yes**	**No**
	Living around the abattoir waste dumpsite can cause results into health condition	102(99.0)	1(1.0)	100(97.1)	3(2.9)
	Living around the abattoir waste dumpsites have impact on the health of the people	96(93.2)	7(6.8)	75(72.8)	28 (27.2)
	Respiratory disorder can be caused by living near abattoir waste	31(30.1)	31 (30.1)	43 (41.8)	33(31.8)

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	dumpsite.				
	Fever due to respiratory infection can be contracted by living near the abattoir waste dumpsite	69(67.0)	4 (3.9)	93 (90.3)	4(3.9)
	Living around the dumpsites can cause skin rashes	70(68.0)	13 (7.3)	75 (72.8)	
	Abattoir waste dumpsites can cause air pollution	97(94.2)	4 (3.9)	102 (99.0)	7(6.8)
	Abattoir waste dumpsites can cause the infestation of rats.	92(89.3)	14(13.6)	82 (79.6)	7(6.8)
	Abattoir waste dumpsite can cause infestation of flies	99(96.1)	18(17.4)	89 (86.4)	6(5.7)

Table 2, shows the knowledge of health-related conditions associated with living around the abattoir waste dumpsites. Only 99.0% of respondents in Ijebu-Ode had the knowledge that abattoir waste dumpsites can cause air pollution while 96% of the respondents were from Ijebu-Igbo.

Table 3: Impacts of demographic characteristics on the level of Knowledge ofrespondents

Demographic Characteristics	**Frequency (%)**			
	Ijebu-Ode n=103		**Ijebu-Igbo n=103**	
Age (Years)	**Good**	**Poor**	**Good**	**Poor**
≤ 20	1 (1.0)	0 (0.0)	20 (20.0)	0 (0.0)
21-30	40 (31.2)	1 (1.00)	43 (43.0)	1 (50.0)
31-40	25 (24.4)	0 (0.0)	18 (18.0)	1 (50.0)
41-50	10 (8.8)	0 (0.0)	10 (10.0)	0 (0.0)
51-60	2 (2.0)	0 (0.0)	3 (3.0)	0 (0.0)
61-70	5 (4.3)	0 (0.0)	0 (0.0)	0 (0.0)
71-80	16 (15.7)	0 (0.0)	8 (8.0)	0 (0.0)
81-Above	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)
Total	**103 (100)**	**1 (100)**	**101 (100)**	**2 (100)**
Mean ∓ SD Statistics and P-value	35.94±11.26 T=0.61 P=0.68	28.85±0.00	38.46±9.89 T=0.87 P=0.87	23.67±7.77

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Gender				
Male	55 (52.0)	0 (0.0)	56 (56.0)	1 (50.0)
Female	49 (48.0)	0 (0.00)	45 (45.0)	1 (50.0)
No respone	1 (1.0)	0 (0.00)	0 (0.0)	0 (0.0)
Total	**103 (100)**	**0 (100)**	**101 (100)**	**2 (100)**
Statistical P-value	P = 1.00		P =1.000	

Demographic Characteristics	**Ijebu-Ode (n=103)**		**Ijebu-Igbo (n=103)**	
Educational Status	**Good**	**Poor**	**Good**	**Poor**
Primary	9 (8.9)	0 (0.0)	10 (9.0)	1 (33.3)
Secondary	42 (40.9)	1 (100)	37 (37.0)	0 (0.0)
Tertiary	42 (40.9)	0 (0.0)	39 (39.0	2 (66.7)
No response	9 (8.9)	0 (0.0)	15 (15.0)	0 (0.0)
Total	**101 (100)**	**1 (100)**	**101 (100)**	**3 (100)**
Statistical and P-value	**P*=1.00**		**P*0.5589**	
Duration of living around the abattoir dumpsites (years)	**Good**	**Poor**	**Good**	**Poor**
0-10	89 (87.3)	38 (38.0)	38(38.3)	
11-20	10 (9.8)	31 (31.0)	31(31.0)	
21-30	0 (0.0)	16 (16.0)	16(16.0)	
31-40	0 (0.0)	5 (5.0)	5(5.0)	
No response	3 (2.9)	10 (10.0)	10(100)	
Total	**102 (100)**	**1 (100)**	**100 (100)**	**3 (100)**
Mean ± SD	6.85±3.61	7.00±0.00	15.58±9.73	8.00±7.07
Statistics and P-value	P* t=0.35 P=0.83		t=0.88 p=0.86	
Marital Status				
Single	37 (36.2)	0 (0.0)	58(58.0)	1 (33.3)
Married	58 (56.9)	1 (100)	40(40.0)	1 (33.3)
Divorced	2 (2.0)	0 (0.0)	2(2.0)	1 (33.3)
Widowed	4 (4.9)	1(100)	0(0.0)	0 (0.0)
Total	**102 (100)**	**1 (100)**	**100 (100)**	**3 (100)**
Statistics and P-value	**P* =1.00**		**P*=0.06**	

And table 3, there was no statistically significant relationship between any of the socio-demographic characteristics and the level of knowledge expressed by the study areas.

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Table 4: Health Conditions associated with the respondents

Health conditions	**Study Area frequency (%)**		**Statistics and P-value**
	Ijebu-Ode	**Ijebu-Igbo**	
Sneezing	93 (80.6)	60 (58.5)	X^2 =22.83 P=0.00
Odour	99(96.1)	59(57.8)	P*= 0.00; X^2 = 12.83
Malaria	73(70.0)	58(56.4)	X^2=3.52, P=0.00
Wheezing	79 (78.8)	38(37.0)	X^2=20.37, P=0.00
Cough	73(70.9)	59(57.3)	X^2=5.58, P=0.06
Skin rashes	67(69.1)	25(23.3)	X^2=25.82, P=0.00
Common cold	82 (79.6)	58(56.3)	X^2=0.60, P=0.06 P*= fishes exact value

As shown in Table 4, the respondents for Ijebu-Ode reported the experience of the health conditions associated with living around the abattoir dumpsites more than those who live in Ijebu-Igbo except for the common cold which was the highest. The statistical analysis revealed that the following reported health disorders gave a statistically significant difference between the two study areas, Sneezing, Wheezing, Skin rashes, malaria and Odour. Whereas, there is no statistically significant difference between the frequency of common cold and cough reported by the respondents and their respective areas.

4. CONCLUSION

This study claims that majority of the study areas have good knowledge of the potential effect of the abattoir waste dumpsite on health and there was no statistically significant difference in the level of knowledge expressed by the respondents of the study areas. However, Ijebu-Ode respondents expressed more health conditions than the respondents of Ijebu-Igbo. Some of the health conditions are Sneezing, Common cold, Wheezing, Cough and Fever.
The statistical analysis revealed that the following reported health conditions gave a statistically significant difference between the two areas, Sneezing, Wheezing, Skin rashes, Fever, and Odour. Whereas, there is no statistically significant difference between the respondents and their respective areas.

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