IRESPUB Journal of Environmental & Material Sciences
ISSN: 2770-4084
Volume: 2 | Issue: 5 | MAY - JUN 2023 | Available Online: www.irespub.com

The Effects of Environmental Pollution on Human Health among the People of Yola- North Local Government Area of Adamawa State, Nigeria

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ABSTRACT
Urbanization and industrialization along with economic development have led to increase in energy consumption and waste discharges. We have different kinds of waste which includes solid and industrial. Data was generated using survey questionnaire, personal observation and field work. The data was analyzed using the T-test. The result of the study shows that Yola North local Government is faced with a lot of problems and challenges in regards to environmental pollution. This is can be attributed to lack of keeping the environment clean, lack of government taking appropriate measure for providing facilities and materials for controlling refuse in the area. The research recommends that People should be enlightened on the danger of dumping refuse indiscriminately, hence the need for the provision of incinerators by the Government and Non-governmental organizations. The health authority of Yola North Local Government Area should create awareness on the causes and effect of environmental pollution. There's need for the Government to enlighten the public on the impact of insects' infections, such as mosquitos and housefly.

KEYWORDS
waste; urbanization; infections; facilities

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INTRODUCTION

Environmental pollution is reaching worrying proportions worldwide (Foday et al., 2013). Urbanization and industrialization along with economic development have led to increase in energy consumption and waste discharges. The global environmental pollution, including greenhouse gas emissions and acid deposition, as well as water pollution and waste management is considered as international public health problems, which should be investigated from multiple perspectives including social, economic, legislation, and environmental engineering systems, as well as lifestyle habits helping health promotion and strengthening environmental systems to resist environmental pollution. Environmental pollutants have various adverse health effects from early life. Some of the most important harmful effects are perinatal disorders, infant mortality, respiratory disorders, allergy, malignancies, cardiovascular disorders, and increase in stress oxidative, endothelial (Nwanta and Ezenduka, 2010) dysfunction, mental disorders, and various other harmful effects. Though, short-term effects of environmental pollutants are usually highlighted, wide range of hazards of air pollution from early life and their possible implication on chronic non-communicable diseases of adulthood should be underscored. Numerous studies have exposed that environmental particulate exposure has been linked to increased risk of morbidity and mortality from many diseases, organ disturbances, cancers, and other chronic diseases. Therefore, it is time to take action and control the pollution. Otherwise, the waste products from consumption, heating, agriculture, mining, manufacturing, transportation, and other human activities will degrade the environment. Based on the strength of the scientific knowledge regarding the adverse health effects of environmental pollution and the magnitude of their public health impact, different kinds of interventions should be taken into account In addition to contamination (Foday et al., 2013).

We have different kinds of waste. We have the industrial wastes include metals, scraps chips and grits machine, sawdust, paper pieces and glass (Omole and Alakinde 2013). Solid waste refers to unlawful disposal of waste in undesignated spaces such as open or vacant land, sources of water and other areas (Achi et al. 2012; Okechukwu et al. 2012; Machete and Shale 2015).

Solid waste disposal is a common and prevalent though risky practice, especially among developed and developing communities. Two separate studies conducted in Nigeria and Ghana came to the same conclusions: that approximately 80% of solid waste in African countries was disposed of through solid waste disposal (Ogwueleka 2009; Aziale and Asafo-Adjei 2013). However, although solid waste is more prevalent in developing countries, developed countries are not an exception (Ogwueleka 2009; Aziale and Asafo-Adjei 2013). The need to reduce environmental pollution cannot be over emphasize, hence the necessity to carry out this research.

MATERIALS AND METHODS

Jimeta is situated along the bank of River Benue and is the headquarter Yola North LGA of Adamawa state. It is located on latitudes 090 14' N and longitudes 120 28' E with an elevation of 135m above sea level. It covers a land area of about 109km2 (Adebayo and Tukur 1999). It is a gap town which is situated at a point where the Benue River carves its valley through the eastern highlands. Jimeta is one of the two settlements that form the capital of Adamawa State. The other settlement being Yola town – the seat of Adamawa traditional council. The word"Jimeta" is derived from a Batta word. "Jimeta" meaning a shrine. Compared to other ancient towns like Borno, Kano, Ile-Ife and Oyo, Jimeta is relatively new in the British rule in Nigeria as a center for colonial administration: (Adamawa State Official Diary). Jimeta is bounded by Demsa (LGA) in the east and Yola South LGA in the south.

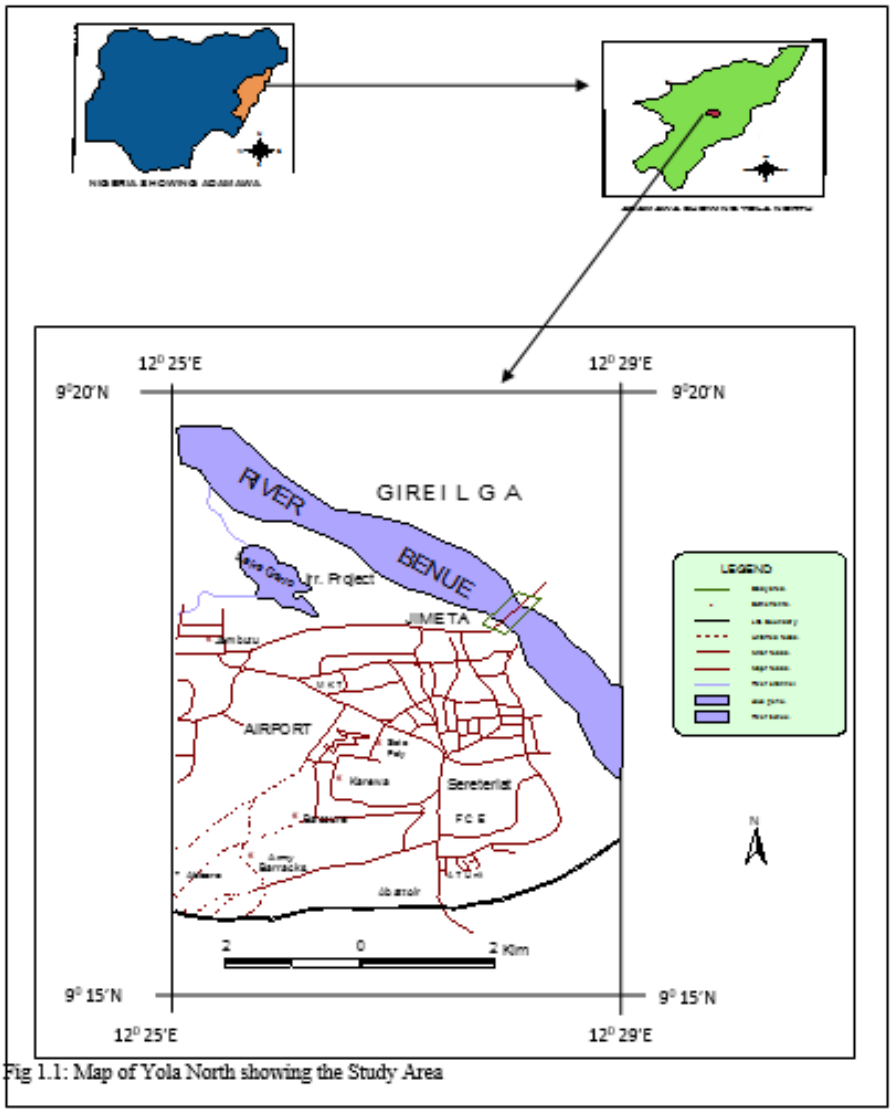

Fig 1.1: Map of Yola North showing the Study Area

FIGURE 1: Map of Yola North Showing the Study Area.

The methods used to collect information for this research were questionnaires, personal observation, purposive interview and field survey. Data collected were analyzed using statistical package for the social sciences (SPSS), mean and standard deviation were used, Chi square was used to test the hypothesis at .05 level of significance.

RESULTS AND DISCUSSION

One hundred (100) copies of questionnaire were distributed but only ninety-six (96) copies were retrieved while four were not returned from specialist hospital Yola, Peace hospital, Ministry of Environment and local government health offices within the four sampled area of the study. The following are the findings.

TABLE 1: Distribution of respondents by Sex.

Items	Respondents	Frequency	Percentage (%)
Sex	Males	45	46.87
	Female	51	53.12
	Total	**96**	**100**

Source; field survey 2022.

Table one above reveals that 46.87% of the respondent were male while 53.12% were females. This show that majority of the respondent were female.

TABLE 2: Distribution of respondent by place of work.

Items	Respondent	Frequency	Percentage (%)
Place of work	Specialist hospital	35	36.45
	Peace hospital	17	17.70
	Ministry of environment	22	22.91
	Local government health office	22	22.91
	Total	**96**	**100**

Source; field survey 2022.

Table 2 above reveals that 36.45% were from specialist hospital, 17.70% were from peace hospital, 22.91% from ministry of environment while 22.91% were from local government health office. This shows that specialist hospital has the highest number of respondent with a percentage of 36.45%.

TABLE 3: Distribution of respondents by Occupation/profession.

Items	Respondent	Frequency	Percentage (%)
Occupation/ Profession	Health officer in health institution	3	3.12
	Nurse and midwives	26	27.08
	Health workers	39	40.62
	Environmental workers	28	29.16
	Total	**96**	**100**

Source; field survey 2022.

TABLE 3: reveals that 3.12% of the respondents were health officers in public health institution, 27.08% of the respondent were nurses and midwives, 40.62% of the respondents were health workers, while 29.16% were the environmental workers. So.in table 3, health workers have the highest number of respondents with a percentage of 40.62%.

TABLE 4: Distribution of respondents by working experience.

Items	Respondents	Frequency	Percentage (%)
Working experience	Less than 5 years	36	37.50
	5-9 years	15	15.62
	10 years and above	45	46.87
	Total	**96**	**100**

Source; field survey 2022.

Table 4 above reveals that 37.50 % of the respondents working experience were less than five (5) years, 15.62% of the respondents have 5-9 years' work experience, while 46.87 % of the respondents have 10 years and above work experience. From this analysis above, personnel with 10 years and above working experience has the highest percentage.

TABLE 5: Method of refuse disposal and its effects on human health.

S/N	O	E	O-E	$(O-E)^2$	$\sum(O-E)^2/E$
1	91	75.00	16.00	256	3.41
2	81	71.81	9.19	84.50	1.18
3	83	79.79	3.21	10.30	0.13
4	78	78.99	-0.99	0.98	0.01
5	50	77.39	-27.39	750.20	9.69
6	5	18.99	-13.99	195.70	10.31
7	15	18.18	-3.18	10.10	0.56
8	13	20.20	-7.12	51.80	2.56
9	18	20.00	-2.00	4.00	0.20
10	46	19.60	-26.40	696.90	
					X^2=63.61

The calculated value is **63.61**
By using the formula below to determine the degree of freedom we have.
Degree of freedom (df) = row – column i.e.

df = (r-1) (c-1)
df= (2-1) (5-1)
df= 1×4=4

The statistical significance is at α 0.05
Therefore, degree of freedom df=4, under α 0.05= 9.48773
The table value 9.48773 is less than calculated value which is 63.61

Therefore, the null hypothesis is rejected. Hence, there is significant difference between method of refuse disposal and it effect on human health.

TABLE 6: Knowledge on Refuse disposal and its Effect on Human Health.

S/NO.	O	E	(O-E)	$(O-E)^2$	$\sum(O-E)^2/E$
1	90	82.4	7.6	57.76	0.70
2	86	83.2	2.8	7.84	0.09
3	86	83.2	2.8	7.84	0.09
4	66	82.4	-16.4	268.96	3.3
5	65	77.2	-12.2	148.84	1.9
6	82	78.9	3.1	9.61	0.1
7	84	79.8	4.2	17.64	0.2
8	85	82.4	2.6	6.76	0.1
9	84	83.2	0.8	0.64	0.0
10	87	82.4	4.6	21.16	0.3
11	6	13.6	-7.6	57.76	4.2
12	10	13.8	-3.8	14.44	1.0
13	10	13.8	-3.8	14.44	1.0
14	20	13.6	6.4	40.96	3.0
15	31	12.8	18.2	331.24	25.8
16	14	13.1	0.9	0.81	0.1
17	12	13.2	-1.2	1.44	0.1
18	11	13.6	-2.6	6.76	0.5
19	12	13.8	-1.8	3.24	0.2
20	9	13.6	-4.6	21.16	1.6
					$X^2 = 44.28$

Where the degree of freedom is also given as:
df= (r-1) (c-1)
df= (2-1) (10-1)
df=1×9 =9
The statistical significance is at α 0.05
Therefore, degree of freedom df=9, under α 0.05= 16.9190

The table value 16.9190 is less than calculated value which is 44.28

Therefore, the null hypothesis is rejected. Hence, there is significant difference between knowledge on refuse disposal and its effect on human health.

There is no significant difference in the method of refuse disposal and it effect on human health opined that solid waste in the city causes unpleasant odors, Problems and health hazards if not properly collected and disposed of.

There is significant different between knowledge on refuse disposal and it effect on human health. It is true that when there is understanding of the basic dynamic characteristic of waste generation, and appreciation of the origin of sanitation, the effect on health is greatly reduced to minimum.

TABLE 7: Mitigating Environmental Pollution.

Column	Item	Responds	Frequency	Percentage (%)
1	Do you know of any measure of mitigating environmental pollution?	Regular environmental sanitation and proper refuse disposal.	12	12.50
2		Government should provide a refuse and waste disposal site, such as incinerator as a method of waste disposal.	13	13.54
3		By providing adequate incinerators	9	9.37
4		Recycling of waste product.	8	8.33
5		Proper disposal of waste.	3	3.12
6		By avoiding stagnant water flow.	1	1.04
7		The use of waste water treatment plans can be used to reduce waste generated by industries more especially of waste water.	2	2.08
8		Proper education on deforestation and planting.	8	8.33
9		Nil	40	41.66
			Total= 96	**100**

Source; field survey 2022.

From the above, 13.54% of the respondent agreed that government should provide a refuse and waste disposal site, such as incinerator as a method of waste disposal. Regular environmental sanitation and proper refuse disposal has 12.50%. Those who agree with the provision of adequate incinerators are 9.37%. Recycling of waste product and Proper education on deforestation and planting both have 8.33% while the lowest value is those that agree with avoiding stagnant water flow 1.04%. Those who did not respond had 40%.

CONCLUSION

The research was aimed at finding the causes and effect of environmental pollution among people of Yola North Local Government Area of Adamawa State. The result of the study shows that Yola North local government is faced with a lot of problems and challenges in regards to environmental pollution. This is can be attributed to lack of keeping the environment clean, lack of government taking appropriate measure for providing facilities and materials for controlling refuse in the area among other causes. Therefore, the following was recommended.

- People should be enlightened on the danger of dumping refuse anyhow, hence the need for the provision of incinerators.
- The health authority of Yola North Local Government Area should create awareness on the causes and effect of environmental pollution.
- Seminars should be conducted on preventive methods for environmental pollution.
- There's need for the Government to enlighten the public on the impact of insects' infections, such as mosquitos and housefly.
- The public should be enlightened on the mitigative measures of environmental pollution.

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