

**The Effects of Poor Disposal of Refuse and Sewage by the Workers at Tayi Abattoir on the lives of the Residents of Tayi Village - A Case Study of Tayi Abattoir in Tayi Village-Chanchaga Local Government area of Minna Niger State North-Central Nigeria**

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**Abstract:** This study was conducted as a result of backdrop of poor sanitary situation experienced in slaughter houses nationwide, and was carried out to investigate the effects of poor disposal of refuse and sewage by workers at Tayi abattoir Minna, North central Nigeria on the lives of the residents of Tayi village, Minna. The essence of the study is to create awareness to the people of Tayi village and the workers of Tayi abattoir on the need to develop the culture and habit of good sanitation. The population of the study comprise of 100 people i.e. 80 residents of Tayi village and 20 workers of Tayi abattoir randomly selected. The main instruments employed for the gathering of data were questionnaire and observation. The study found out that the poor disposal of refuse and sewage by the workers at Tayi abattoir had significant effect on the health of the residents of Tayi village at  $P > 0.05$  which led to the acceptance of hypothesis one (1). The following among others are the findings; the research shows that 95% of the respondents agreed that both workers/residents of Tayi abattoir and Tayi village have been victims of various diseases such as malaria fever, typhoid fever, cholera etc, while 70% of the respondents were of the view that they are not comfortable with the way and manner with which wastes generated at Tayi abattoir are disposed. The following among others are some of the recommendations made; waste collections and management authorities in the state should be properly organized to effectively carry out their duties. Agencies involved in the management of wastes should be effectively equipped with tools and machineries and most of all, the populace through public education should be enlightened about the ills and consequences of poor sanitation.

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**keywords:** effects, poordisposal, refuse/sewage, residents, Tayi Abattoir

### Introduction

It has been observed in recent times that many people suffer some health related problems as a result of poor disposal of wastes, (Liasu, 2003). Some of the health related problems associated with poor disposal of waste include: malaria cholera, typhoid fever, amoebic dysentery, yellow fever, etc. Maxwell (1998). Other problems associated with poor disposal of waste are: water pollution, air pollution, land pollution which together makes life uncomfortable for mankind, Ramalingam (2007). A typical example of a community that is battling with the problems aforementioned is Tayi Village in Chanchaga local Government Area of Niger State, Nigeria, because of the poor disposal of waste made by the workers at Tayi Abattoir. The effect of poor disposal of waste on the lives of people has become a cardinal issue that occupies a centre stage in academic discourse and other public fora both at national and international levels (Leitman, 1993). Evidence has shown that the environment represents a wide range of the external circumstances, conditions and things that affects the existence and development of an individual, organisms, group and or society (Isaichei 1999). In

Nigeria for instance, environmental issues did not gain official prominence until around 1988 when koko toxic wastes dumping was discovered which led to the establishment of Federal Environmental Protection Agency (FEPA), Choker, (1993). Federal Environmental Protection Agency (FEPA) was established in 1988 in Abuja, Nigeria, whose main duty was to serve as a control centre for other Environmental Protection Agencies that might be constituted by the various states of the federation. For example, NISEPA (Niger State Environmental Protection Agency) was formed by Niger State government in 2009 (Innocent 1999).

Despite the effort of the Nigeria Federal Environmental Protection Agency in ensuring sanitation in Minna, Niger State, some communities are yet to fill their impact. A typical example of a community in Minna that has not been touched by NISEPA is Tayi Village in Chanchaga Local Government Area of Niger State where indiscriminate dumping of refuse and sewage is the order of the day at the Tayi Abattoir in Tayi Village, and it is in view of this that the researchers decided to investigate the effects of poor disposal of sewage and refuse made by

these workers on the entire lives of the people living in Tayi Village with the primary aim of creating awareness for the people about the debilitating effects of poor disposal of the waste on their lives and above all, to develop in them (the workers /community) awareness and the attitude of good disposal of wastes so that the inhabitants of Tayi Village will be relatively free from avoidable diseases such as: malaria, typhoid fever, cholera amoebic dysentery and other negative effects associated with poor sanitary conditions of such places.

#### **Aims and Objectives of the Study:**

The aim and objectives of this research are to:

- Examine the effects of the wastes management practices adopted in the study area.
- Examine the relationship between the domestic wastes that emanates from Tayi Abattoir and disease outbreak in the study area.
- To investigate the causes of poor disposal of wastes in the study area.
- Create awareness to the workers at the Abattoir and the entire people living in the study area about the dangers of poor or indiscriminate disposal of wastes.

#### **Hypothesis**

For the purpose of this research, the following hypothesis, were formulated,

- Wastes disposed by the workers at Tayi Abattoir have negative effects on the health of the residents of Tayi Village.
- Wastes disposed by the workers at Tayi Abattoir have no negative effects on the health of the residents of Tayi Village.

#### **Materials and Methods**

##### **Research Design**

The research design adopted for this study is the survey design. In this research design, the researcher went on field survey of the study area. During the field survey, the researchers practically observed and gathered data from the study area for the research.

##### **Area of Study**

The study was carried out in Tayi Abattoir located in Tayi Village, Chanchaga Local Government of Niger state in North-Central part of Nigeria.

##### **Population of the Study**

The population of the study includes both inhabitants of Tayi village and workers of Tayi Abattoir in Chanchaga Local Government of Niger State.

##### **Population Sample**

Eighty (80) inhabitants of Tayi village and twenty (20) workers of Tayi Abattoir were selected as

population sample for this research, making a total of 100 respondents.

##### **Sampling Technique**

Random sampling technique was used in selecting sample for the research study which constituted both the inhabitants of Tayi village (80) and the workers of Tayi Abattoir (20) respectively.

##### **Research Instruments**

The instruments employed for this study was observation and questionnaire designed for both the inhabitants of Tayi village and workers of Tayi Abattoir, Chanchaga Local Government of Niger State. It has one section. i.e. the main body of the questions concerned with the actual data needed for the study.

##### **Procedure for Instrument Administration**

The questionnaires were administered directly by the researcher to the respondents at their various homes (residents) and the Abattoir to the workers.

##### **Procedure for Data Collection**

The researchers personally collected back the completed questionnaires from the respondents after which they presented them in tables preparatory for data analysis.

##### **Data Analysis**

The Data obtained from the completed questionnaires were grouped according to the responses and presented in tables and percentages obtained. These were then analyzed using T-Test for the purpose of testing the hypothesis that were formulated for this study.

#### **Result And Analysis**

**Table 1:** Showing the Responses Of Workers Of Tayi Abattoir, Minna As To Whether Burning Is The Method Used In Disposing Dead Cows From The Abattoir.

<b>Variables</b>	<b>Responses</b>	<b>Percentage %</b>
A	14	70
SA	06	30
D	00	00
SD	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

**Key:** A: Agreed, SA: Strongly Agreed, D: Disagreed, SD: Strongly Disagreed.

Table 1 above shows that 70% of respondents agreed that burning is the method of disposing dead cows at Tayi Abattoir, Minna. While 00% disagreed.

Table 2 shows that 75% of respondents strongly agreed that it is wrong to site an Abattoir close to residential areas. while 00% of the respondents disagreed.

**Table 2:** Showing The Responses Of the Workers Of Tayi Abattoir, Minna As To whether it is wrong to site an Abattoir close to residential areas.

Variables	Responses	Percentage %
A	05	25
SA	15	75
D	00	00
SD	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

Table 3: showing the responses of workers of Tayi Abattoir, Minna as to whether there is a relationship between wastes management and public health.

Variables	Responses	Percentage
A	16	80
SA	03	15
D	01	05
SD	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

Table 3 above shows that 80% of the respondents agreed that there is a relationship between waste management and public health. while 05% of the respondents disagreed.

Table 4: showing the responses of the workers of Tayi Abattoir, as to whether there are drainages through which liquid waste from the Abattoir are usually disposed.

Variables	Responses	Percentage %
A	00	00
SA	00	00
D	08	40
SD	12	60
<b>Total</b>	<b>20</b>	<b>100</b>

Table 4 above shows that 60% of the respondents strongly disagreed that there are drainages through which liquid waste from Tayi Abattoir are usually disposed. While 00% of the respondents disagreed.

Table 5: showing the responses of workers of Tayi Abattoir, Minna as to whether solid wastes are usually disposed by burning or open dumping.

Variables	Responses	Percentage %
A	16	80
SA	04	20
D	00	00
SD	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

Table 5 above shows that 80% of the respondents agreed that solid wastes are usually disposed by burning or open dumping. While 00% of the respondents disagreed.

Table 6: showing the responses of the workers of Tayi Abattoir, Minna as to whether they have been victims of diseases such as: malaria fever, typhoid fever, cholera, dysentery etc.

Variables	Responses	Percentage %
A	10	50
SA	09	45
D	01	05
SD	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

Table 6 above shows that 50% of the respondents agreed that they have been victims of diseases such as; malaria fever, typhoid fever, cholera, dysentery, etc. while 05% disagreed.

Table 7: showing the responses of the workers of Tayi Abattoir, Minna as to whether government has provided facilities for the proper management of wastes in the Abattoir.

Variables	Responses	Percentage %
A	00	00
SA	00	00
D	05	25
SD	15	75
<b>Total</b>	<b>20</b>	<b>100</b>

Table 7 above shows that 75% of the respondents strongly disagreed that government has provided facilities for the proper management of wastes in Tayi Abattoir, Minna. While 00% of the respondents strongly agreed.

Table8: showing the responses of the residents of Tayi village Minna, as to whether the wastes generated from Tayi Abattoir, Minna are usually disposed indiscriminately.

Variables	Responses	Percentage %
A	07	8.75
SA	72	90
D	00	00
SD	01	1.25
<b>Total</b>	<b>80</b>	<b>100</b>

Table 8 above shows that 90% of the respondents strongly agreed that the wastes generated from Tayi Abattoir, Minna are usually indiscriminately disposed, While 25% respondents strongly disagreed.

Table 9 shows that 90% of the respondents strongly agreed that there is an increase in population of insects as a result of activities of workers in Tayi Abattoir, Minna such as, house flies. while 1.25% of the respondents strongly disagreed.

Table 9: showing the responses of the residents of Tayi village, Minna as to whether there is increase in the population of insects as a result of activities of workers of Tayi Abattoir such as house flies in Tayi village.

Variables	Responses	Percentage %
A	07	8.75
SA	72	90
D	00	00
SD	01	1.25
<b>Total</b>	<b>80</b>	<b>100</b>

Table 10: showing the responses of the residents of Tayi village, Minna as to whether they have been suffering from diseases such as; malaria, typhoid fever, cholera, dysentery, etc.

Variables	Responses	Percentage %
A	22	27.5
SA	55	68.75
D	00	00
SD	03	3.75
<b>Total</b>	<b>80</b>	<b>100</b>

Table 10 above shows that 68.75% of the respondents strongly agreed that they have been suffering from diseases such as malaria, typhoid fever, dysentery, cholera, etc. while 3.75% of the respondents strongly disagreed.

### Analysis

Table 11: T-analysis to show if there is relationship between sewage and refuse disposal methods and the disease contracted among workers of Tayi Abattoir and the residents of Tayi village, Minna Niger state.

Variable	N	Mean	Sd	T-Value	Df	P-Value
Effects of waste disposal						
Workers of Tayi Abattoir	20	3.40	0.60			
Residents of Tayi village	80	3.61	0.68	1.379	98	0.177

Table 11 shows that there is no significant difference at  $p(0.05)$  between waste disposal methods and the disease contracted among workers of Tayi Abattoir and the residents of Tayi village. As T-value (-1.379 is less than the P-value (0.05) ie T-value = -1.379,  $> 0.05$  and  $df = 98$ .

Table 12 shows that there is a significance difference between waste disposal/adverse or negative effects at  $p(0.05)$ . As T-value (-4.136)  $< 0.05$  and  $df = 98$ .

Table 12: T- analysis to show if waste disposed at Tayi Abattoir has no negative effects on the health of workers of Tayi Abattoir and the residents of Tayi village.

Variable	N	Mean	Sd	T-Value	Df	P-Value
Effects of waste disposal						
Workers of Tayi Abattoir	20	2.95	0.05			
Residents of Tayi village	80	3.29	0.03	-4.136	98	0.00

Table 13: showing the responses of the residents of Tayi village, Minna as to whether drainages, culverts are often seen blocked by wastes released from Tayi Abattoir, Minna.

Variables	Responses	Percentage %
A	11	13.75
SA	69	86.25
D	00	00
SD	00	00
<b>Total</b>	<b>80</b>	<b>100</b>

Table 13 above shows that 86.25% of the respondents strongly agreed that drainages/culverts are often seen blocked by the wastes released from the Tayi Abattoir, Minna.

### Discussion of Results

From the results obtained see (table 1) shows that burning is the main method of disposing dead cows at Tayi Abattoir, Minna, as 70% respondents agreed that dead cows are usually burnt at Tayi Abattoir. Table 2 Shows that 75% of the respondents were of the opinion that it is wrong to site an Abattoir close to the residential areas and this agrees with the World Bank Report (1998) which stated that locating factories and Abattoirs far away from residential areas will reduce the cases of pollution. Table 3 Indicates that 80% respondents were of the view that there is a relationship between waste management and public health and this agrees with the work the findings of Ahmed (2002) which says "poor management of waste have corresponding impacts on the health of the people. Table 4 Shows that 60% of the respondents disagreed that there are drainages for the collection of the liquid wastes (Sewage) that emanates from the Abattoir which brings about pollution of the area and this tends to be in agreement with the report of the World Bank (1998) which states that "lack of proper channels (drainages) for the collection of liquid wastes brings about accumulation of those wastes which in turn pollutes the environment. Table 5 shows that 80% of the respondents agreed that the waste generated at the Tayi Abattoir are often burnt or dumped on an

open land. The burning and open dumping of these solid wastes (refuse) releases pollutants to the environment and above all, create home for some vectors and this supports the findings of Idodo (2010) who stated that “burning of solid waste leads to addition of impurities such as carbon monoxide into the air which alters the composition of the atmosphere causing harms to both plants and animals. Table 6 shows that 95% of the respondents agreed that both workers of Tayi Abattoir and the residents of Tayi Village have been suffering from disease such as malaria, typhoid fever, cholera, dysentery, etc. due to poor management of waste, which results in the growth of disease vectors in the area which agrees with the findings of Michael (2008) who stated that a polluted environment is prone to growth of vectors i.e. carriers of disease causing microorganisms. The T-test analysis carried out on hypothesis 1 to determine whether workers of Tayi Abattoir and the residents of Tayi Village have been victims of diseases due to poor disposal of wastes by the Abattoir (see table 11) shows that there is no significant difference between the respondents who agreed and those who disagreed to the statement. Therefore, the alternate hypothesis is accepted which states that “residents of Tayi Village and the workers of Tayi Abattoir suffers from various diseases due to poor disposal of wastes from Tayi Abattoir. Table 7, shows that 100% of the respondents disagreed that government has not provided enough facilities for the proper management of wastes in Tayi Abattoir and that is why the management of the wastes has been very difficult. This in agrees with the world bank report (1998) which stated that for proper management of wastes, government must make laws, provide facilities and set up agencies for the management of wastes but if government fails to make provision for proper management of wastes, its management becomes difficult. Table 8 shows that 90% of the respondents agreed that wastes generated at Tayi Abattoir are often inappropriately disposed. This is supported by the (World Bank, 1996) which states that “Nigeria is a nation that exemplifies poor solid waste management i.e. indiscriminate waste disposal is the order of the day”. Table 9 indicates that 98.75% respondents agreed that there is increase in the population of insects such as house flies in Tayi Village due to inappropriate disposal of waste from the Abattoir and this is in conformity with the report presented by (Sarojini, 2010) who stated that “vectors use refuse and sewage as their breeding grounds. Table 10 shows that 93.25% of the respondents agreed that they have been victims of several diseases such as; malaria fever, typhoid fever, cholera, dysentery etc. and this is in agreement with the findings of (Michael, 2008), who stated that “disease-causing microorganisms tends to multiple in dirty environments and

the people living in such areas becomes the victims. The T-test analysis carried out on hypothesis 2 which states that “residents of Tayi Village and the workers of Tayi Abattoir have been victims of various disease due to inappropriate disposal of wastes by the worker of Tayi Abattoir. Table 12 shows that there was a significant difference between the respondents who agreed and those who disagreed with the hypothesis, therefore, the null hypothesis is rejected which say that “people of Tayi Village and the workers of Tayi Abattoir have not been victims of various diseases due to inappropriate disposal of wastes by the workers of Tayi Abattoir. Table 13 shows that 86.25% of the respondents agreed that culverts and other water ways (channels) are often seen blocked by refuse disposed by the workers of Tayi Abattoir and this agreed with the findings of (Michael, 2008) who stated that “when wastes are indiscriminately disposed, running water wash them into culverts and these block them making it difficult for water and other liquids to pass through, hence, flooding is enhanced.

### Recommendations

The following recommendations, if carried out will go a long way in ameliorating, problems associated with waste and refuse disposal not only in Tayi abattoir but in abattoirs generally nationwide

- Waste collection and management authorities in the state should be properly organized.
- Agencies involved in the management of waste should be effectively equipped with tools and machineries.
- There should be enlightenment campaign to reawaken the sanitation consciousness of people on the effects of poor disposal of wastes.
- Environment protection agencies charged with the responsibilities of waste management should carry out their task to the letter.
- Abattoirs should be sited far away from residential areas.
- Burning of solid wastes should be discouraged by government through enlightenment of the populace of its hazards.
- Dead cows should be buried instead of being burnt.

### References

1. Ahmed, Y. A. (2002). Issues of the environment. *Journal of Contemporary Issues in Environmental Studies*. Vol.3, No. 2.
2. Choker, B. A. (1993). *Protect the Environment. Journal of Government Policy and Environmental Protection in Developmental Countries*. Vol.17, No.1.

3. Idodo, U. (2010). College Biology. Idodo Umeh Publisher Limited, Benin City.
4. Innocent, E. A. (1999). Paper presented on challenges of environmental sanitation in Minna.
5. New Nigerian News paper, pp.17, Tuesday, 5<sup>th</sup>. October, 1998.
6. Liasu, M, Fawole, O, Osundina, M, and Oloke, J. (2003). A Concise Biology for University Students. Amons Olatunde printers and Publishers.
8. Lietmann, J. and Rabinworth, M, (1993). Solid Waste in Curitiba. The Encyclopedia Americana International. Glotier inc. U. S. A.
9. Maxwell, M. C. (1998). Practical Biology for Senior Secondary Schools. Onibonje-Publishers Ltd. Ibadan, Nigeria.
10. Michael, M. C. (2008). Essential Biology for Senior Secondary Schools. Tonad Publishers Ltd.
11. Sarojini, T. (2010). Modern Biology for Senior Secondary Students. Africa first Publishers.
12. World Bank Report (1998). Pollution and Prevention. Washigton, DC., USA.

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