



Demographic and Hygiene of Abattoir and Meat Handlers in North Eastern Nigeria

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Abstract

A study was conducted to determine the demographic and hygiene of meat handlers in North Eastern Nigeria in an abattoir. 50 structured questionnaires were designed. Data were taken on age, educational status, health consciousness and personal hygiene of the meat handlers. Data generated were analyzed using descriptive statistic of simple percentages. Results obtained from the study shows that majority (70%) of the abattoir workers are youths aged 20-30 years. 42% of the workers are illiterates and 40% had first School leaving certificate, 14% 0,level and only 2% of the respondents had A, level certificate, an indication that the education status of the workers is low. Result of medical checkup indicated that, 10% go for medical check-up, 90% do not go for medical check –up. On the frequency, those that go once in a month and twice in a month recorded the same value of 2%, while those who do not have fixed time for checkup were about 96% of the respondents. Results of personal hygiene of workers and the abattoir revealed that, before processing of meat 48% washed their knives, 0% washed their hands, sterilize their knives, washed the animal and the abattoir. In the same vein, after meat processing 50% of the respondents washed their hands, sterilized their knives, washed the carcass, washed the abattoir and 2% wash their knives. It could be concluded and recommended that handling of meat in the study area were in the hands of illiterate of age grade 21 to 30 years and the hygiene of the abattoir and the meat handler is generally poor.

Keywords: Demographic, Meat, Abattoir, Processing, Hygiene and Mubi

Introduction

Waste generation in Nigerian slaughter houses poses a serious threat to the environment because of poor handling practices and its adverse environmental effects. In a typical Nigerian abattoir, the surrounding land is often marshy due to improper channeling of wastewater arising from the dressing of slaughtered animals and washings at the lairage (Akiro *et al.*, 2009; Lawan *et al.*, 2012) Pollution also occurs when solid wastes such as bones, pieces of flesh and dung are left unattended in open spaces. When precipitation takes place, these wastes leave the land in a polluted state while part of it get washed into nearby streams. Most Nigerian abattoirs are situated close to surface water bodies in order to have access to water supply needed for slaughtered animal processing and to provide a sink for the run-off from meat processing activities (Baumgartner *et al.*, 1992; Barros *et al.*, 2007; Ishiaka *et al.*, 2013).

Rapid increase in the number of smaller abattoirs in the rural areas mostly on farm facilities and transportation of livestock to abattoirs is less regulated and the governments do not have control over the quality of animals presented for slaughter. Also meat inspection has become a private activity, as abattoir inspectors employ

unqualified meat inspection personnel. This situation led to a decline in the management of hygienic practices, and adherence to stringent meat inspection procedures is compromised at abattoirs. The unhygienic condition of the abattoirs led to contamination of meat meant for human consumption and as well environmental pollution resulting from improper disposal of wastes during evisceration (Mann, 1984; Long, 1990; Mumed and Webb, 2015). Meat inspection is commonly perceived as the sanitary control of slaughter animals and meat. The aim of meat inspection to provide safe and wholesome meat for human consumption is seriously abused or lacking. This study is therefore designed to determine the social status and hygiene of meat handlers in mubi, Adamawa state (Zweifel *et al.*, 2014)

MATERIALS AND METHODS

Experimental site

Adamawa state is located in the North Eastern part of Nigeria, lying between latitude 7⁰ and 11⁰ N of the equator and between latitude 11⁰ and 14⁰ E of the Greenwich Meridian. The State shares boundary with Taraba State in the South and West, Gombe State in its Northwest and Borno to the North. It has an international boundary with

Cameroon Republic along its Eastern border. Adamawa State covers a land mass of about 38,741km² with a population of about 2,102,053 inhabitants based on 1990 population Census. The state is divided into 21 State local government areas with Mubi where the study is being conducted is the second largest to Yola, the State Capital. Mubi L.G.A is located at the Northern part of old Saradauna Province which now forms Adamawa North Senatorial district as defined by INEC (1996). The region lies between latitude 9^o 30'' and 11^o north of the equator and longitude 13^o and 13^o 45'' East of Green witch Meridian. Mubi region is bounded to the north by Borno State, to the West by Hong and Song L.G.A. and to the South and East by the republic of Cameroon. It has a land area of about 4,728.77 km² and human population of about 759,045 going by (1991) census projected figure (Adebayo and Tukur, 1991).

Mubi abattoir is located at the outskirts of the town along Yola road, built 400 meters away from the main road and about 150 meters away from the banks of river Yadzaram and is comprised of two main units in a single building (Baffa *et al.*, 2010). The larger unit was used for large ruminant (cattle) while the other smaller part was used for small ruminants (goats and sheep) as reported by Clottey (1985); Fitzgerald (2010); Haileselassie *et al.* (2013). The floor has concrete base, with impervious stones (gravels) and a furrow groove that drains water and blood away from the slaughter stab in the middle. The slaughter house was fenced all round with wire mesh to prevent access of un-authorized persons and stray animals.

DATA COLLECTION

Data were taken using structural questionnaires on age, educational status, health consciousness and personal hygiene of the meat handlers in Mubi abattoir Adamawa state

DATA ANALYSIS

Data generated were analyzed using descriptive statistic of simple percentages

RESULTS AND DISCUSSION

Age Distribution of Meat handlers in Mubi Abattoir

Table 1 shows the age distribution of abattoir workers. Those within the age bracket of 15 to 20 years of age are 8 representing 16% of the workers. Those within the age limit of 21 – 30 are 35 in numbers i.e. 70%, while those that are

aged between 31 and above are 7 in number representing 14%. It is evidence from this study that majority of the abattoir workers are youths that are strong and agile that have migrated from the villages and hamlets to seek better life in the city. This study agreed with the findings of Broadway (1990 and 2002); Farmer *et al.* (2012). Interaction with the abattoir workers by the researcher reveals that, majority of them are indigenes of Gwoza and Pulka in Borno state, as well as those from Madagali in Adamawa state, with a few from the Mokolo region of the Cameroon republic.

Educational Status of Meat Handlers in Mubi Abattoir

Out of the total 50 abattoir workers sampled, 42% of them were illiterates, and 40% of them attended only primary school, while 14% of them attended secondary school and have O'level qualification. Those that attended A'level i.e. NCE and Diploma levels are 4% as shown in Table 2. Those that are illiterates and first School leavers are more in number because they do not have the requisite qualifications to gain employment in other sectors of the economy. This findings is similar to the one obtained by Roberts and dejager (2004); Muinde and Kuria (2005); Muwonge *et al.* (2012) And since processing of meat as well as its sales does not require interview, or requisite qualification, they are comfortably accommodated in the business. Similarly, Shiaka *et al.* (2015) reported that, 90% of abattoir workers in Dutse, Jigawa state, have low level of education. Of the respondents, only 2% of them had special training on meat processing and handling, while 98% never attended any training on meat processing (Table. 3). This trend may be similar throughout the third world countries as no special attention is given to the quality of meat available to the citizenry for consumption. Similar report was made by Samuel *et al.* (1979); Zakpaa *et al.* (2009) Mekonnen *et al.* (2013) on abattoir workers in Mekelle city in Ethiopia who found out that, 61.5% of the abattoir workers in that city have never taken any training concerning food hygiene and meat processing. Training of meat handlers in respect of the important requirements of personal hygiene has a great role to play as an integral part of making sure that the meat consumed by the populace is safe (Eribo and Jay, 1985); Government of Kenya (2012).

Health consciousness among Meat Handlers in Mubi Abattoir

Out of the 50 abattoir workers sampled, only 5 i.e. 10% of them visit the hospital for checkup, while the remaining 45 i.e. 90% never cared to do same. Of the 5 that attend to their health, 2% visit the hospital for checkup once a month, and another 2% visit the hospital for checkup twice a month while 3 i.e. 96% had no fixed time for medical checkup. This result shows how ignorant the abattoir workers are about the issue of cross infection between man and animals. This could be as a result of their low level of education and exposure. The few that had higher level of education, attend to their health as they normally go for medical checkups, and even with that, there is no defined time table for such exercise. This could also mean that, the health status of the abattoir workers is not known and persons suffering from high risk communicable diseases are allowed to participate in meat handling. This shows that, the meat consumed by Mubi inhabitants is exposed to contamination first from the persons handling the meat and other sources as would be mentioned in the subsequent paragraphs.

Observance of personal and abattoir Hygiene by Meat Handlers in Mubi Abattoir

Based on other aspects of the workers personal hygiene, 100% of them do not wash their hands nor sterilize their knives before engaging in meat processing. The opposite is been done as 48 representing 96% of them wash their knives and hands after handing of meat. This result is in consonant with that of Shiaka *et al.* (2015) who reported that, 72.2% of abattoir workers in Dutse, do not wash their hand and knives before commencement of cattle processing. And that, 81.8% of them wash their hands and materials used in meat processing right on the abattoir floor. All animals brought to the abattoir are never washed before slaughter. Similarly, the abattoir is never washed before animal are slaughtered, but the abattoir is washed after slaughter and meat processing and let to dry till the next day (Table 4). This finding is in agreement with that of Shiaka *et al.* (2015), that butchers maintenance of hygiene during the period of meat processing is low in the abattoir as 90.9% of them agreed that, abattoir floors are only washed after processing and at most times without the use of disinfectants. It is therefore evidenced that, abattoir is one of the avenues that contribute to the problem of common food poisoning and food borne diseases and as well serve as one of the potential health hazards associated with food. This fact is supported by the reports made by Roberts and deJager (2004) and

that of Mekonnen (2013) and in Nigeria, there are indications that most Nigerians might have been consuming meats that could endanger their lives. Herenda *et al.* (1994); Holds (2007) examines the unwholesome practices in abattoirs and why the world trade centre has refused to license meat processed in Nigeria for export. The fact still remains that, there is a gap in the awareness of the abattoir workers on meat handling procedures and maintenance of personal hygiene, and this calls for the introduction and implementation of food hygiene and inspection.

CONCLUSION AND RECOMMENDATIONS

The most predominant age of the meat handlers was between 21 to 30 years. Majority of the meat handlers were illiterate and did not receive any training on meat processing and handling, very few of the workers go for medical check-up. Hygiene of the workers, abattoirs and equipment/tools and the animal was generally poor.

Through this means, the safety of meat can be ensured and the dangers of cross infection of zoonotic diseases minimized and healthy meat consumed by the populace. It could be recommended that, adequate training on meat processing and hygiene should be given to the workers despite their levels of education through seminars and workshops by the extension workers.

Table 1; Age Distribution of Meat Handlers in Mubi Abattoir

Age (years)	Number	Percentage (%)
15 – 20	8	16
21 – 30	35	70
31 – Above	7	14
TOTAL	50	100

Source: Field Survey (2019)

Table 2; Education Status of Meat Handlers in Mubi Abattoir

Characteristic	Number	Percentage (%)
Illiterates	21	42
First School Leaving Certificate (FSLC)	20	40
O'Level	7	14

A'Level	2	4
TOTAL	50	100

Source: Field Survey (2019)

Table 3; Training received on meat Handling

Response	Number	Percentage (%)
Yes	1.0	2
No	49	98
TOTAL	50	100

Source: Field Survey (2019)

Table 4; **Observation of Personal Hygiene by Meat Handlers in Mubi Abattoir**

Characteristics	Number	Percentage (%)
Medical Checkup	5	10
No Medical Checkup	45	90
<u>Frequent of checkup</u>		
Once in a month	1	2.0
Twice in a month	1	2.0
No fixed time for checkup	3	96
<u>Other Hygiene Measures</u>		
Washing of Hand before meat processing	0	0
Non washing hands before meat processing	50	100
Sterilizing of knives before meat processing	0	0
None sterilizing of knives before handling meat	50	100
Washing of knives after meat processing	48	96
None washing of knives after meat processing	2	4
Washing of animal before slaughter	0	0
Non washing of animal before slaughter	50	100
Washing of abattoir before slaughter	0	0

Washing of abattoir after meat processing	50	100
Use of disinfection to wash abattoir	0	0

Source: Field Survey (2019)

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