

Perceptions on Tsetse and Trypanosomosis Diseases among Butchers and Livestock Marketers at Kano Abattoir, Northern Nigeria

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Abstract

Trypanosomosis is a resurgent and devastating disease of significant economic importance that has hindered livestock development in many parts of sub-Saharan Africa. Similarly, in spite of the various control strategies, the diseases are still a measure impediments to sustainable livestock production in Nigeria. Moreover, little is placed on the involvement of butchers and livestock marketers in decision making, program planning, implementation and evaluation. This study therefore, was carried out to evaluate butchers and livestock marketers' perceptions on the knowledge, presence and impact of Trypanosomosis diseases. Standard focus group discussions (FGDs) were conducted to collect relevant information from the study population. The results revealed that, Trypanosomosis (locally called 'Sammore') was well known by the respondents but very few (20%) could associate the disease to the presence of tsetse flies. Perceived signs and symptoms mentioned included loss of conditions (31.4%), cutting - off tail (22.8%), coarse hair (15.7%), abortion (12.9%), progressive emaciation (10%), reduced production (5.7%) and lacrimation (1.4%). Similarly,

perceived control strategies were chemotherapy (70%), animal elimination (17.1%) and ethnotherapy (8.6%). Berenil appears to be the most preferred drug of choice (50%), followed by Samorine (36%) and Novidium (14%). Conclusively, the study reaffirms the need to incorporate butchers and livestock marketers in intervention programs against African Animal Trypanosomosis alongside more enlightenment campaigns to facilitate effective control of the disease.

Key words: *Trypanosomosis, butchers, livestock marketers*

1. Introduction

African Animal Trypanosomosis is an important parasitic disease that is still a major threat to survival and productivity of livestock (Swallow, 2000; Oluwafemi *et al*, 2007). It is transmitted by the bite of tsetse fly to humans and to wild and domestic animals (Anon, 2004). However, over the years, control approaches are available to contain the disease but little is placed on the involvement of butchers and livestock marketers in decision making, program planning, implementation and evaluation.

Butchers and livestock marketers play decisive role in the epidemiology of Animal Trypanosomosis, and, according to Maigari *et al* (2015) inclusion of butchers and livestock marketers may facilitates effective implementation of decision making to limit the spread of Animal Trypanosomosis. These categories of people may help in identifying endemic regions, transmission routes of the disease as well as the epidemiological status of the disease. Therefore, an interactive session with butchers and livestock marketers would assist in devising an appropriate control strategies that are more feasible, robust and environmentally friendly. Hence, the significance of the study.

2. Methodology

2.1. Study Design and Population

This study was designed to evaluate perceptions of butchers and livestock marketers in Kano state, Northern Nigeria, on the knowledge, attitudes, treatment and control of African Animal Trypanosomosis. Ethical clearance was obtained from the management of the abattoir. In addition to that, oral consent of the respondents was sought after the study protocol was clearly explained, assuring them of no penalty for any opinions and comments made. Similarly, information obtained from the respondents was supplemented further by discussion with veterinary doctors of the abattoir. Standard questioners were administered in form of focus group discussion by organizing 7 group sessions consisting of 10 participants per group. Thus, a total of 70 individuals were randomly sampled. All the focus group discussion was conducted in Hausa language.

2.2. Study area

The study was carried out at Kano Abattoir. The abattoir is located within the ancient city of Kano state, Northern Nigeria. The abattoir was well known as one of the largest abattoir in Nigeria which qualifies it to be an excellent site of scientific interests. The abattoir averages daily slaughter of 500 cattle and hundreds of camels, sheep and goats (Anonymous, 2015). Livestock are brought daily from various parts of the country and neighborhood of Chad, Niger, Cameroon, Benin Republic, etc. This has resulted in making the abattoir a busy environment, densely quartered with human activities including livestock marketing, meat sell/services, and meat processing.

2.3. Management and Analysis of Data

Both quantitative and qualitative data collection methods were employed. The generated data was presented in the form of numerical, simple proportions, and in tabular form. Descriptive and inferential statistics were used to draw out conclusion.

3. Results and Discussion

The results obtained are presented in **Tables 1-6**.

The demographic factors studied included respondents' age, level of education, ethnicity and economic activities. The mean age of the study population was 50+/- 5 years. The level of non-formal, primary, secondary and post-secondary education was 5(7.1%), 21(30%), 41(58.6%) and 3(4.3%), respectively (**Table 1**). Hausa language was the main ethnic group in the study area. Respondents' main economic activities were meat sellers (41.4%), Livestock marketers (34.3%), meat processing (20%) and employment as public servants (4.3%) (**Table 2**).

Trypanosomosis was well known by the respondents (locally called “*Sammore*”) but vector of the disease was poorly known. Few respondents were able to associate the disease to the presence of flies (20%), whereas 27.1% of the respondents associated the disease to transhumant activities. Mismanagement has also been incriminated as the cause of trypanosomosis (4.3%) while majority (48.6%) of the discussants do not know what causes trypanosomosis (**Table 3**).

The result also shows that, butchers and livestock marketers at Kano Abattoir have comparable knowledge on signs and symptoms of trypanosomosis with loss of condition having the highest frequency (31.4%), while lacrimation had the least perceived frequency (1.4%). Other frequently reported signs and symptoms included cutting -off- tail (22.8%), coarse hair (15.7%), abortion (12.9%), progressive emaciation (10%) and reduced production (5.7%) (**Table 4**). From the above perceived clinical signs, it could be deduced that, majority of the respondents know at least one clinical sign suggestive of bovine trypanosomosis (Machila *et al*, 2003).

Common animals at Kano Abattoir included cattle, camels, sheep and goats. However, respondents opined that cattle are more exposed to trypanosomosis diseases. This agreed with the findings of Maigari *et al* (2015), where high prevalence of Trypanosomosis in cattle at Kano Abattoir was reported. The nomadic habits of herdsmen, where cattle are usually taken out for grazing on transhumants and thus made more vulnerable to tsetse bites, might equally be the reason (Opasina and Ekwuruke, 1988; Maigari *et al*, 2015). Similarly, the larger numbers of cattle brought to Kano Abattoir (usually due to their economic value), might also be the reason for the higher incidences reported in cattle as aptly contends by Maigari *et al*. (2015).

Preponderance of the respondents know at least one of the conventional control methods. Respondents who mentioned chemotherapy as a means of treating trypanosomosis were in the majority (70%) while animal elimination (17.1%) and ethnotherapy (8.6%) were the remaining best known control strategies (**Table 5**). A vast majority of the respondents treated their animals, and the most common trypanocides used included Berenil (50%), Samorin (36%) and Novidium (14%) (**Table 6**). Moreover, high risk of drug resistance might ensued as self-preparation and incessant administration of drugs have been reported (Machila *et al*, 2003; Seyoum *et al*, 2013). However, respondents who do not used orthodox drugs cited drug costs as their major impediments. This is in agreement with the works of Rutto *et al* (2013) in a work entitled "Socio-Economic and Cultural Determinants of African Trypanosomiasis at the Kenya-Uganda Trans boundary".

Livestock marketers and butchers also moaned of non-inclusion in various intervention programs. They equally expressed their desire to support any program aimed at eliminating

and/or controlling tsetse and trypanosomosis diseases. The study therefore, calls for involvement of butchers and livestock marketers in designing and implementing intervention measures against the disease. This is necessary considering their mutual interaction with herdsmen and their roles in supplying animal proteins through livestock sells and services.

5. Conclusion and Recommendations

This study reaffirms the need to include butchers and livestock marketers in intervention programs to curb the menace of Animal Trypanosomosis. The failure of butchers and livestock marketers to associate trypanosomosis with its principal vector, tsetse fly, is also worrisome. More advocacy and enlightenment campaigns by relevant Institutions are therefore recommended.

Table 1: Educational level of Respondents

Level of Education	No. and Proportion of Respondents
Non-Formal	5 (7.1%)
Primary	21 (30%)
Secondary	41 (58.6%)
Post-Secondary	3 (4.3%)

Table 2: Occupation of Respondents

Occupation	No. and Proportion of Respondents
Meat Selling	29 (41.4%)
Livestock Marketing	24 (34.3%)
Meat Processing	14 (20%)
Civil Servant	03 (4.3%)

Table 3: Perception on Causes of Trypanosomosis

Perceived Cause	No. and Proportion of Respondents
Biting from flies	14 (20%)
Transhumant	19 (27.1%)

Mismanagement	03 (4.3%)
Do not know	34 (48.6%)

Table 4: Perception on Signs and Symptoms of Trypanosomosis Diseases

Perceived Signs and Symptoms	No. and Proportion of Respondents
Loss of Conditions	22 (31.4%)
Cutting - off - tail	16 (22.8%)
Coarse hair	11 (15.7%)
Abortion	09 (12.9%)
Progressive Emaciation	07 (10%)
Reduced Production	04 (5.7%)
Lacrimation	01 (1.4%)

Table 5: Perception on Trypanosomosis Control Practices

Perceived Control Practice	No. and Proportion of Respondents
Chemotherapy	49 (70%)
Animal Elimination	12 (17.1%)
Ethnotherapy	06 (8.6%)
Do not know	03 (4.3%)

Table 6: Perception on Common Drugs Used in Treating Trypanosomosis

Name of Drug	Active Components	No. and Proportion of Respondents
Berenil	Diminazine aceturate	35 (50%)

Samorin	Isometamedium chloride	25 (36%)
Novidium	Homidium chloride	10 (14%)

References

- Anon, A. (2004) African Trypanosomiasis/Sleeping sickness-Fact Sheet. Weekly Epidemiological Record **79**(32):297-300.
- Anonymous (2015) An interactive Discussion between Kano Abattoir and Nigerian Institute for Trypanosomiasis Research (NITR)
- Machila N, Wanyangu SW, Mc Dermott J, Welburn SC, Maudlin I, Eisler MC (2003) Cattle Owners Perceptions of African Bovine Trypanosomosis and its Control in Busia and Kwale Districts of Kenya. *Acta Trop.* 86:25-34
- Maigari AK, Bichi AH, Sani HH, Malami AI, Musa AM, Jega ZH, Abubakar S, Liman SB, Sani A, Jarmai KY, Gide A (2015) Body Condition Scores as Putative Diagnostic tool for African Animal Trypanosomosis among Ruminants Slaughtered at Kano Abattoir. *Greener J. of cell and Animal Biology*, **2**(1):001-007, <http://doi.org/10.15580/GJCAB.2015.1.022315033>
- Oluwafemi RA, Ilemobade AA, Laseinde EAO (2008) Prevalence of tsetse fly and Bovine Trypanosomiasis in the BICOT area within Lafia LGA of Nassarawa state, Nigeria. *J. Agr. and Soc. Res.* **8**(1):1-7
- Opasina BA, Ekwuruke JO (1988) Trypanosomiasis in Nigeria Trade Cattle: Short Communications, *Trop. Anim. Health Prod.* 19:251-252
- Rutto J J, Osano O, Thurairanira EG, Kurgat RK, Odenyo VAO (2013) Socio-Economic and Cultural Determinants of Human African Trypanosomiasis at the Kenya-Uganda Trans-boundary. *PLoS Negl Trop Dis* **7** (4): e2186.doi:10.1371/journal.pntd.0002186
- Seyoum Z, Terefe G, Ashenafi, H (2013): Farmers' perception of impacts of bovine trypanosomosis and tsetse fly in selected districts in Baro-Akobo and Gojeb river basins, Southwestern Ethiopia. *BMC Veterinary Research* 9:214 doi: 10.1186/1746-6148-9-214. Accessed on 5th October, 2013 from www.biomedcentral.com/17466148/9/214
- Sindato C, Kimba EN, Kibona SN (2008): Factors influencing individual and community Tanzania. *Tanzania J Health Res* **10**(1): 20-27
- Swallow, BM (2000) Impacts of trypanosomosis in African Agriculture, Program against African Trypanosomosis. Technical and Scientific Series, Food and Agricultural Organization (FAO) 2: 45-46, ISSN 1020-7163