

**PREVALENCE OF GASTROINTESTINAL PARASITES OF CATS
(*Cattus felis*) IN UYO METROPOLIS, AKWA IBOM STATE, NIGERIA**



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ABSTRACT

This study was undertaken to investigate the prevalence of gastrointestinal parasites of cats in Uyo- Akwa Ibom State, Nigeria. Faecal samples from 100 cats of both sexes and from four age groups were collected from five different locations and examined for the presence of helminth eggs, protozoan oocyst, cyst and/ or trophozoites using direct smear method, simple flotation method and centrifugation methods with saturated NaCl for nematode eggs. Of the 100 cats examined, 45 males and 55 females, 63 (63.0%) were infected with intestinal parasites. In order of abundance, the parasites were identified as follows. Helminth parasites: *Toxocara cati* (45.6%), *Ancylostoma tubaeforme* (17.4%), *Toxascaris leonine* (15.2%), *Dipylidium caninum* (6.5%), *Heterophyes heterophyes* (6.5%), *Capillaria putorii* (4.3%) and *Taenia taeniaeformis* (4.3%). Protozoan parasites were found to be present in order of abundance as follows: *Isospora felis* (41.2%), *Giardia felis* (29.4%), *Sarcocystis felis* (17.6%), and *Toxoplasma gondii* (11.7%). Since cats are domesticated by human, the need for good hygienic environment becomes imperative. This is to reduce the incidence of Zoonotic infection. Hence, there is need for proper keeping of cats as pet under good hygienic condition.

INTRODCUTION

Gastro-intestinal tract consists of the stomach, small intestine and the large intestine which forms part of the digestive organ (Wanger, 2008). Researches according to (Khalafalla, 2010) has shown that most feline host are infected with various parasitic worms like the *Toxocara cati*, *Toxascaris leonine*, *Physaloptera preputialis*, *Rictularia*, *Uncinaria*, etc. being nematode worms, cats are also infected with protozoan parasites likes *Isospora rivolta*, *Isospora felis*, *Sarcocystis spp*, *Blastocystis Spp*, *Giardia felis* and *Trichomonas spp*. Feline host also suffer infection from Cestodes worms like *Mesocestoides lineatus*, *Taenia taeniaformis*, *Dipylidium nolleri*, *Dipylidium caninum* etc All these parasitic worms can cause infections which can be detrimental to the health and well-being of the cat (Hoopes and Polley, 2008)

When these worms infect the cat, they cause serious harm to the intestinal organs of the cat some inhabit the stomach mucosal walls and compete with the food of the cat being digested to the stomach (Soulsby, 1965). Some clinch to the stomach walls causing damage to it which results in stomach tear, stomach inflammation, loss of appetite, anaemia and probable weight loss (Roepstroff and Nelson, 1998).

Different groups of worms attack different parts of the gastro-intestinal organs. (Driana, 2010), asserted that Hookworms (*Ancylostoma* and *Uncinaria spp*) are less than 1/2 inch long, slender, thread-like worms that as adult, lives in the cats intestine.

According to *Feline Health Journal of USA*, 2009 publication, it is observed that *Giardia* being a flagellated protozoan is one-celled organism that parasitizes the small intestine of cats. The prevalence of feline *Giardia* infection (*Giardiasis*) is estimated to be less than 5% but can be much higher in some environments. The infestation of *Giardia* infection in cats can cause

serious health problems to the cat's internal organs most especially, the cat's intestine resulting in *Gardia*-related diarrhea (Storch, 2012).

Although cats are rarely accepted as an edible meat for consumption, yet there are needs for checking gastro-intestinal parasites inhabiting the cats gut. Since cats are domesticated by humans which in most cases, the parasite infestation in them become transmitted to humans (Blood and Radosites, 1995; Philips, 2005).

Although studies have been conducted on gastro-intestine tract parasites of cats in some parts of Nigeria, there is little information on parasitic fauna of cats in Uyo. Hence, this research is to provide an epidemiological data on the prevalence of gastro intestinal parasites of cat in Uyo Akwa Ibom State, Nigeria based on analysis of diagnostic test of the feline host faecal deposits.

MATERIALS AND METHODS

Study Site

This study was conducted in Uyo between August and October 2014, one hundred cats were examined for gastro-intestinal parasites in 5 randomly selected locations of Uyo metropolis and they are; Nwaniba axis, Ikpa road axis, Abak road axis, Urua Ekpa axis and Itu road axis, all in Uyo. Uyo, the capital city of Akwa Ibom State is located between Lat $4^{\circ} 53'$ and $5^{\circ} 07'N$, $7^{\circ} 50'E$ and $8.45^{\circ}E$ with temperature ranges between $23.9^{\circ}C - 27.2^{\circ}C$ with relative humidity of 80% (Ukpong, 2005).

COLLECTION OF SAMPLES

Faecal samples were collected from 20 cats in each of the following locations; Nwaniba axis, Ikpa road axis, Abak road axis, Urua Ekpa axis and Itu road axis. The faecal samples were collected from the rectum of individual cats from each age group selected at random. In some cases, freshly deposited faeces were collected in separate specimen bottles individually taking into consideration the age and sex determined with the help of the owners.

EXAMINATION OF SAMPLES

Two examination techniques were employed. A fast direct smear method to detect the presence of motile worms protozoans/ trophozoite, and a simple flotation procedure using saturated NaCl as described by (Wade and Gaafar, 1991). Three gram of faeces were mixed with sodium chloride (for examination of nematode eggs) and strained into centrifuged tube and centrifuge at 1500 rpm for 10 minutes. The centrifuge tube was then filled to the brim with more of sodium chloride and a cover slip was placed on top of the centrifuge tube and allowed to stand undisturbed for about twenty to thirty five minutes. The cover slip was carefully removed from the centrifuge tube and place face down on a glass slide for microscopic examination under x10 and x40 objective of the light microscope. The keys of Soulsby were used in the identification. Microscopic appearances of the parasites found were compared to those in standard texts, literature and micrographs.

DATA ANALYSIS

The data collected was subjected to simple percentage statistical analysis. The mean prevalent rate was calculated by dividing the number of infected animals with the total number of animals examined and expressed as a percentage in all cases.

RESULTS AND DISCUSSION

Of the 100 cats examined, 63.0% of them were infected with gastrointestinal parasites. The species of gastrointestinal helminth parasites identified during this study are as follows.

Toxocara cati, *Toxascaris leonina*, *Ancylostoma tubaeforme*, *Dipylidium caninum*, *Capillaria putonii*, *Taenia taeniaeformis* and *Heterophyes heterophyes* while gastrointestinal protozoan parasites identified were *Toxoplasma gondii*, *Sarcocystis felis*, *Isospora felis* and *Giardia felis* However, their prevalences are shown in Tables 1 and 2. Infection rate in each of the location were as follows in order of abundance Nwaniba road axis (15%), Abak road axis (14%) Itu road axis (13%) Ikpa road axis (11%) and Urua Ekpa axis (10%), (Table 3). Prevalence of

parasites with respect to age groups showed that infection was higher in growing and young cats than the adult cats ($P < 0.05$) (Table 4) infection rate was slightly higher in tom (male) cats than in the queen (female) cats ($P < 0.05$) (Table 5).

Table 1 Prevalence of gastrointestinal helminth parasites of cats identified during the study.

Species identified	No infected	Percentage infection
<i>Toxocara cati</i>	21	45.6
<i>Toxascaris leonine</i>	7	15.2
<i>Ancylostoma tubaeforme</i>	8	17.4
<i>Dipylidium caninum</i>	3	6.5
<i>Capillaria putorii</i>	2	4.3
<i>Taenia taeniaeformis</i>	2	4.3
<i>Heterophyes heterophyes</i>	3	6.5
Total	46	100

Table 2 Prevalence of gastrointestinal protozoan parasites of cats identified during the study.

Species identified	No infected	Percentage Infection
<i>Toxoplasma gondii</i>	2	11.7
<i>Sarcocystis felis</i>	3	17.6
<i>Isospora felis</i>	7	41.2
<i>Giardia felis</i>	5	29.4
Total	17	100

Table 3 Comparison of number and prevalent rate of cats examined from the 5 selected locations in Uyo.

Locations	No of cat examined in each location	No of cats infected	Percentage infection (%)
Nwaniba axis	20	15	23.8
Ikpa Road axis	20	11	17.6
Abak Road axis	20	14	22.2
Urua Ekpa axis	20	10	15.8
Itu Road axis	20	13	20.6
Total	100	63	100

Table 4 Prevalence of gastrointestinal parasites of cats based on age groups

Age group	No examined	No infected	Percentage infection
4-6 months	21	17	26.9
7-8 months	35	25	39.6
9-10 months	20	11	17.4
11 months and above	24	10	15.8
Total	100	63	100

Table 5 Prevalence of gastrointestinal parasites of cats based on sex

Sex	No examined	No infected	Percentage infection
Male (tom)	45	36	57.1
Female(queen)	55	27	42.8
Total	100	63	100

DISCUSSION

The overall prevalent rate of gastrointestinal parasites infecting cats in Uyo in this study was 63.0% and this result is related to the result obtained by (Khalafalla, 2010) in a study conducted in kafrelsheikh province Nothern region of Nile delta of Egypt with a prevalent rate of 91% for 113 cats examined. However, it is lower than the prevalent rate of 108% obtained by (Mohsen and Hossein, 2012) in kashan province of Iran. The above prevalent rate of gastrointestinal

parasites could be as a result of practices such as daily cleaning and routine deworming of the cats and the use of effective antihelminthic drugs at the right time (Mohsen and Hossein, 2012).

This study shows a higher prevalent rate of helminth and protozoan infections similar to that of (Hassan, 2011) with prevalent rate of *Toxocara. cati* at 28.8% and that of (Mohsn and Hossein, 2012) with *Toxocara cati* having a prevalent rate of 13.3% and that of (Yamaguti, 2007) carried out in Sokoto, Nigeria with a prevalent rate of (16.67%) with *Toxocara. cati* parasite taking the lead. This could be due to ineffective management practices and the neglect of deworming cats regularly. The result of this study showed that prevalent rate of gastrointestinal parasites is higher in growing or young cats than in the adult cats. This is because the young cats are more susceptible to infection than the adult which might have acquired some immunity from previous infections.

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