

## **A RETROSPECTIVE STUDY PROFILING VETERINARY SURGICAL CASES IN SELECTED CITIES OF SOUTH-EASTERN NIGERIA**

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### **ABSTRACT**

*Veterinary medical record reviews are very important in that they not only generate hypothesis that can be tested prospectively, but also help to assess surgical procedures and outcomes. This study profiled the veterinary surgical records in three cities, Umuahia, Owerri and Abakaliki, of South-eastern Nigeria over an eight year period (2010 to 2017). Surgical case records and reports from these cities were profiled according to categories (cosmetic, reproductive, gastrointestinal, musculoskeletal, and ear, nose and throat (ENT) surgeries), the yearly and monthly distributions, and the species, sex and age profiles of patients. Of the 164 surgical cases recorded, musculoskeletal surgeries were predominant (43%), followed by the reproductive surgeries (28%). The surgical burden peaked in all three cities in 2016. The monthly profile showed high surgical burden in February and August-September in the three cities. Of all the species recorded, canine species were the most predominant in all three cities. More males than females were presented for treatment and a greater percentage of animals presented for surgery were young animals less than one year old. The percentage of pre-anaesthetic laboratory tests that were not recorded was 91% while 9% were recorded. Of the anaesthetic protocol, 76% were not recorded while 24% were recorded. For the post-operative care given, 63% were recorded while 37% were not recorded. This study provided reference data in this region and underscores the need to properly document patient's information from signalment to the given post-operative care.*

**Keywords:** Profile, Retrospective, Surgical cases, South-eastern Nigeria

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### **INTRODUCTION**

Medical records are critical elements of the veterinary care programme. The practicing veterinarians should establish, review, and oversee medical and animal use records [1]. Surgical outcomes should be documented and continually assessed to ensure that appropriate procedures are followed and improvements instituted where needed. The paucity of such data in sub-Saharan Africa had impeded evidence based clinical practice [2,3] and research in the region.

The retrospective study is a type of research design in which pre-recorded, patient-centered data are used to answer one or more research questions [4,5]. Retrospective reviews are widely applied in healthcare-based disciplines including epidemiology, quality assessment and clinical research [6]. Information gathered from such studies could be useful in the management of prevalent animal diseases [7,8], follow-up [9], research [10] and professionals for effective service delivery [11]. This Information can also be used to profile procedures and outcomes, and to direct subsequent prospective studies.

In Africa, and all over the world, retrospective studies using existing medical records have been used as a veritable tool to evaluate specific surgical procedures/cases or to investigate their prevalence [12, 13]. In Nigeria, similar works have been done; most of them focussing on prevalence of specific surgical procedures/cases in specific species [14,15]. However there is paucity of information giving a holistic profile of surgical cases in Nigeria in general and in the south-eastern region in particular.

This work seeks to profile the surgical cases in selected cities of South-eastern Nigeria for the purpose of reference, planning, research and forecasting of surgical outcomes.

## **MATERIALS AND METHODS**

### **Study area**

The study area included Umuahia (5°32'N 7°29'E), Owerri (5.485°N' 7.035°E) and Abakaliki (6°20N 8°06'E), the capital cities of Abia, Imo and Ebonyi States in south-eastern Nigeria.

### **Data collection and profiling.**

The surgical case records and reports of Government-owned Veterinary hospitals/clinics were the sources of data used for this retrospective study. The period under study was January, 2010 to September, 2017.

The surgical cases were profiled according to Categories (cosmetic, reproductive, gastrointestinal, musculoskeletal, and ear, nose and throat (ENT) surgeries). Cases were also classified according to years (2010 to 2017), month (January to December), species (canine, bovine, caprine, porcine, equine, feline, primate and ovine), sex (males and females) and age (< 1yr, 1-3 yrs and > 3 yrs) of the patients. The percentage frequency of the different profiles was calculated.

### **Data analysis**

The data obtained were summarized as percentages, analyzed using descriptive statistics and the results presented as graphs.

## **RESULTS**

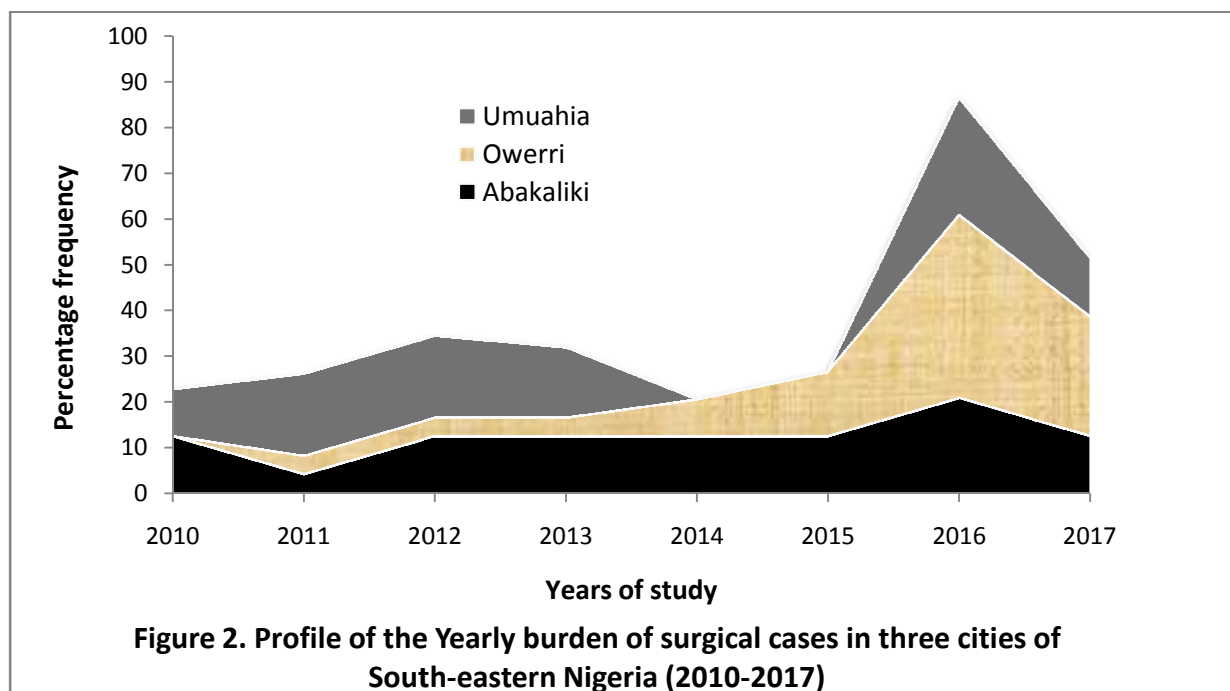
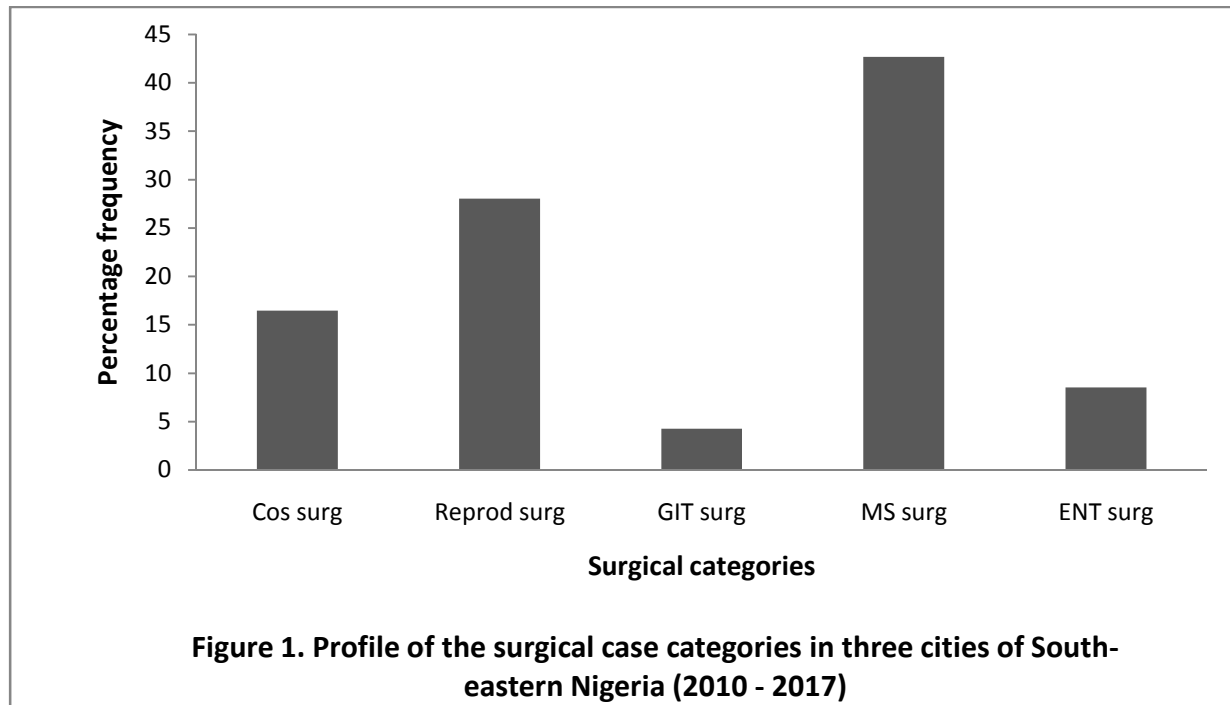
A total of 164 surgical cases were recorded in the three cities during the study period. The 164 cases comprised of 90 (55%) in Umuahia, 50 (30%) in Owerri and 24 (15%) in Abakaliki.

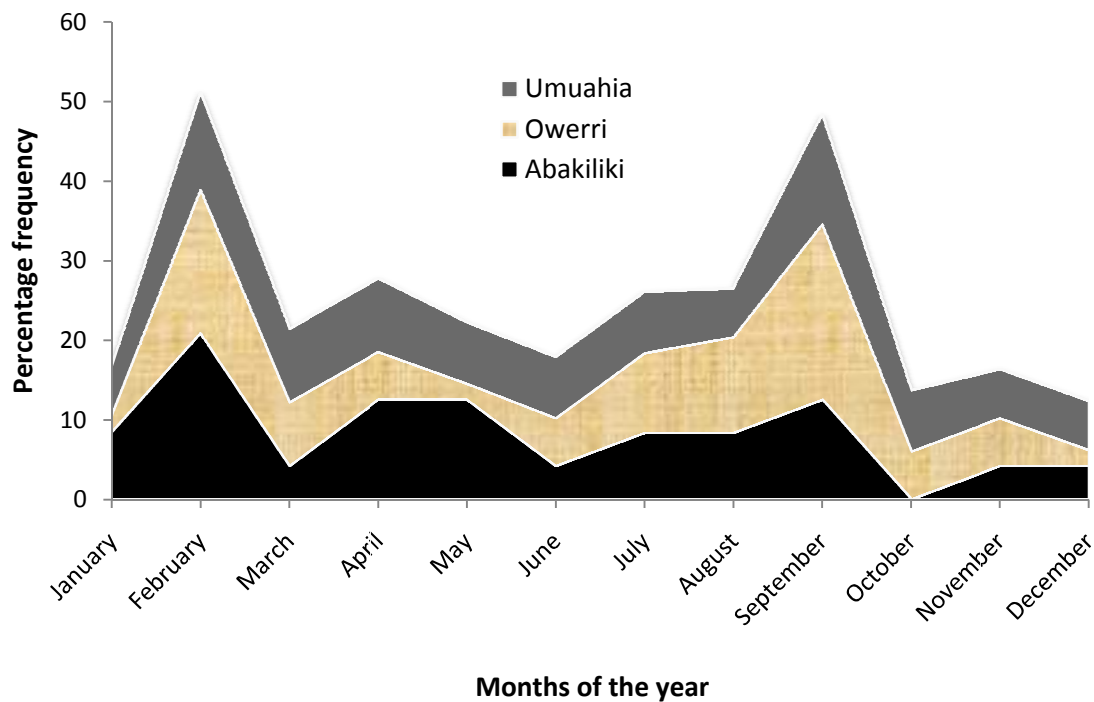
According to the surgical case categories, musculoskeletal surgeries accounted for 43% of the cases followed by reproductive surgeries (28%) (Fig.1). Cosmetic, ENT and Gastrointestinal surgeries respectively accounted for 16%, 9% and 4% of the cases recorded.

The highest yearly burden for each of the three cities was recorded in 2016 with 31%, 15% and 10% more surgical cases performed in Owerri, Umuahia and Abakaliki respectively during this period (Fig. 2). The monthly profile showed that there were high surgical burdens in February and August-September in each city representing two peak periods in the year for surgical cases in these cities (Fig. 3).

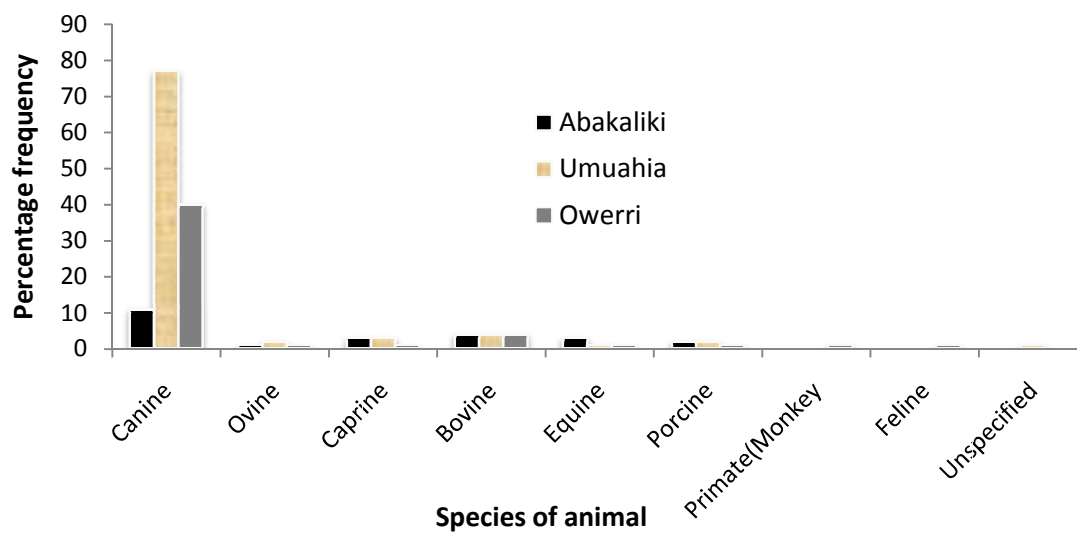
The result of the species profile as presented in Fig. 4 showed that canine species had the highest presentation in all three cities. The sex profile showed that generally, more males than females were presented for surgery (Fig. 5) with a greater percentage being young animals less than one year old (Fig 6).

The record of the surgical protocols showed that 91% of pre-anaesthetic laboratory tests carried out were not recorded, while only 9% were recorded (Fig. 7). Similarly, of the anaesthetic protocol, 76% were not recorded while only 24% were recorded. For the post-operative care given, 63% were recorded while 37% were not recorded (Fig. 7).

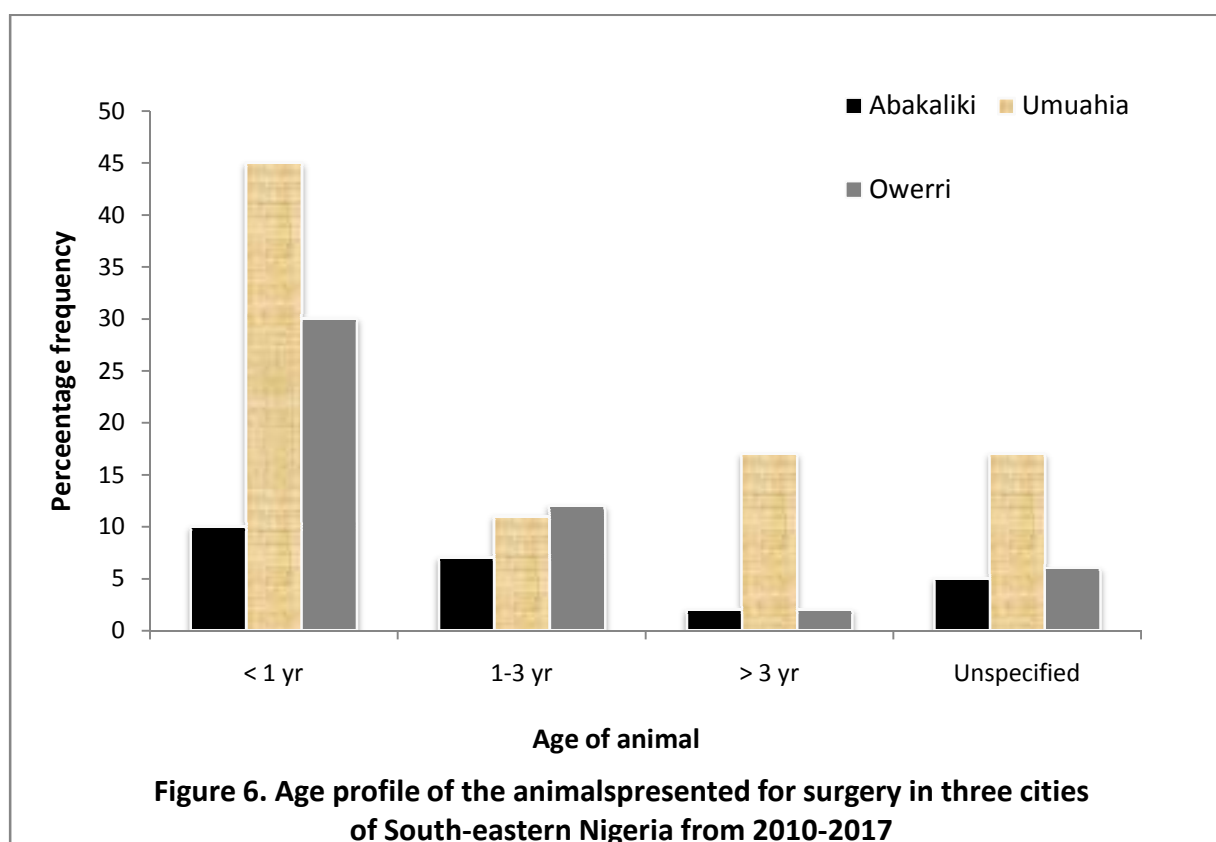
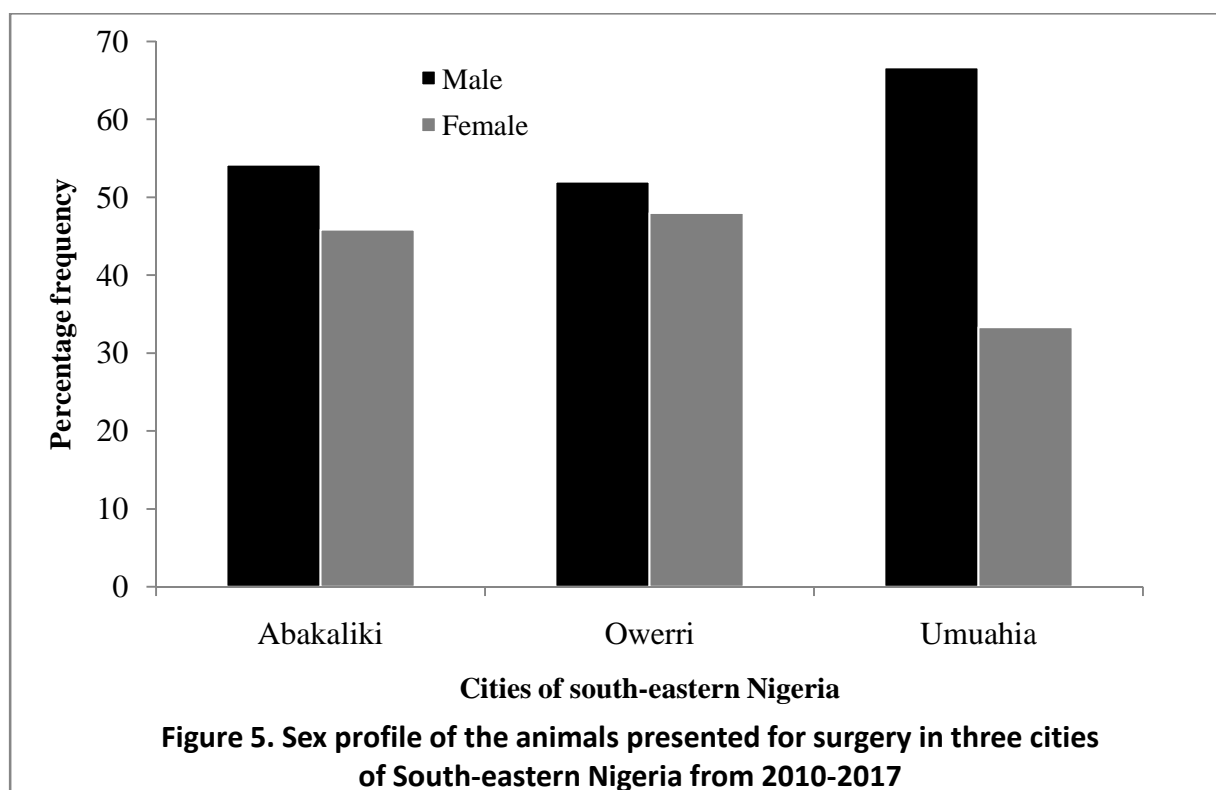


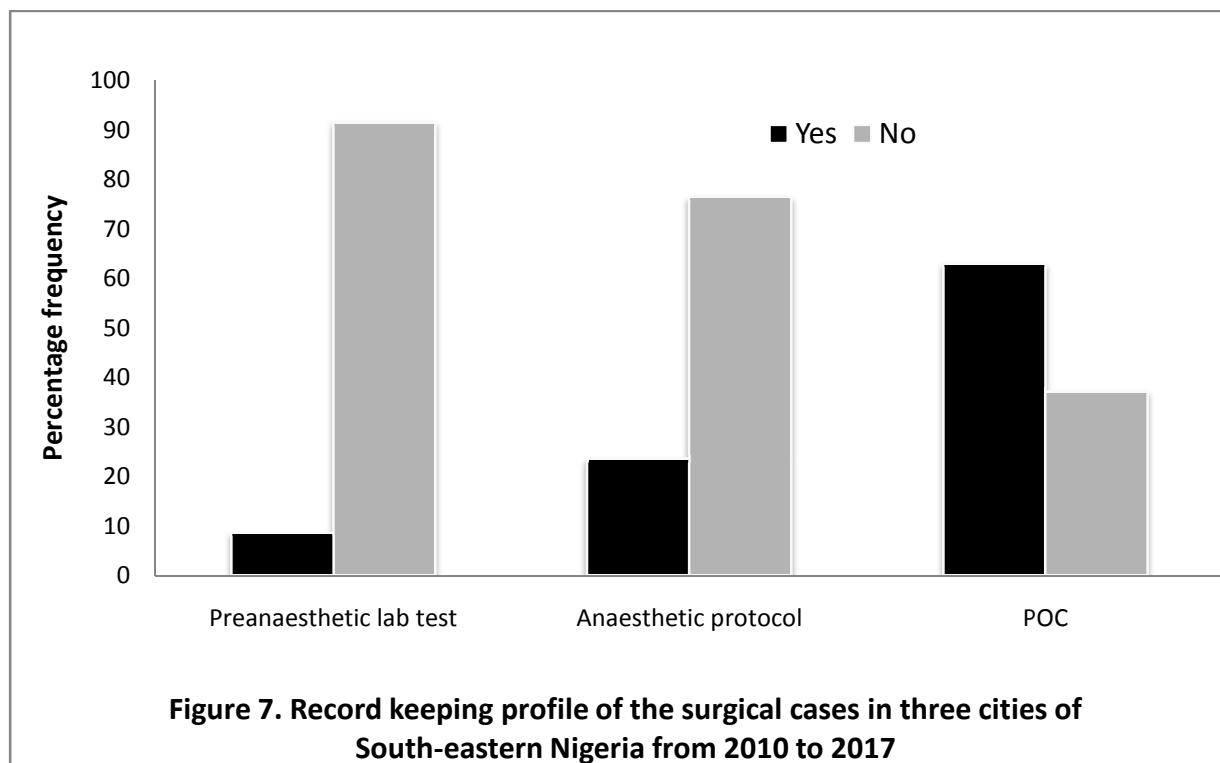


**Figure 3. Profile of the monthly surgical case distribution in three cities of South-eastern Nigeria (2010 - 2017)**



**Figure 4. Species profile of the animals presented for surgery in three cities of South-eastern Nigeria (2010 - 2017)**





## DISCUSSION

The high percentage of musculoskeletal surgeries recorded in this study for the three cities were mainly due to traumatic injuries including wounds from fights and fractures from accidents which are common in domestic animals, especially in the males [16,17] who, on the average are usually more aggressive than their female counterpart. The high percentage of reproductive surgeries was reportedly from dystocia cases and elective castration at the request of owners who wish to curb unnecessary straying in their male dogs.

The spike in surgical cases recorded in 2016 may not be unconnected to the economic recession experienced in the country at the time [18]. At such times farmers prefer to salvage existing breeding stock through surgery than seek for replacement stock.

The consistently high surgical burden in February recorded in the three cities over the eight years was probably because after the festivities of the Christmas season, January is generally a tough month financially and people are more likely to present their animals for elective surgeries in February. Another high surgical burden was seen in August-September, which were the long vacation period when owners probably had more time and more hands available to help present their animals for surgery. Umuahia, from personal interview has an additional factor in that some of the people are very fanatical about the cultural new yam ('Iriji') festival held around August-September every year. At that period, animals are known to sustain cuts and other forms of injuries from some of the excited, cutlass-wielding fanatics, especially youths who go about harassing people and animals.

Canine surgeries were the commonest in these cities as recorded in the study probably because they remain the predominant companion animal kept by animal lovers in the zone. A similar observation was

reported by Eze and Idowu [19] who recorded highest number of surgeries in canine and caprine species in Nsukka within the same study zone.

Generally, males are more territorial and have a higher tendency to roam/stray and thus get into fights more frequently than females [16]; which will probably account for more wounds, accidents and trauma cases among the males as recorded in this study.

The higher prevalence of surgery in young animals aged less than one year old may be attributed to the fact that elective surgeries like tail docking, ear cropping, and castration are preferred in young than adult animals.

Retrospective studies are generally heavily dependent on record keeping necessary for the standardization of practice among other things [20]. However, the results of this study suggest poor documentation of surgical cases and procedures from the pre-anaesthetic laboratory tests and the anaesthetic protocol used for surgeries to the post-operative care. The results of this study further emphasize the need for record keeping in both veterinary hospitals and clinics.

## CONCLUSION

In conclusion, the study provided reference data for future studies in the region and showed the importance of accurate case documentation from patient's signalment to the post-operative care given.

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