Antimicrobial prescription habits of veterinarians and para-veterinarians in Nigeria

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OBJECTIVES

1. Investigate the antibiotic (AB) prescribing habits of Veterinarians and Para-veterinarians in Nigeria.
2. Assess the use and potential influence of AB regulatory guidelines on antibiotic use by vets and paravets.

INTRODUCTION

❖The growing populations and rising income levels in low and middle-income countries are increasing demand for animal protein and subsequently amplifying pressure on livestock farmers [1]. The attempt to deliver on such production demands have resulted in the gradual shift towards intensive farming systems and the consequential rise in antimicrobial use [1].

❖Low income and middle-income countries account for the majority of this projected increase in global antibiotic use. Nigeria was one of the top 50 consumers of antibiotics used in food-animal production in 2010, and is projected to increase food-animal antibiotic use by 167% in 2030 [2].

❖Veterinarians and para-veterinarians, and occasionally farmers, are responsible for administering antibiotics to animals in most sub-Saharan African countries. Understanding the prescribing habits of vets and para-vets can bridge a significant knowledge gap by helping to identify the most frequently used antibiotics, the patterns and reasons behind their usage, and the extent to which veterinarians utilise guidelines and diagnostics in their decision-making on antibiotic use.

METHODOLOGY

❖An online survey was designed to collect information on the antibiotic prescribing habits of vets and para-vets in Nigeria.

❖A non-probabilistic sampling method was adopted. Study participants were identified based on convenience as those who have access to android phones, tablets, or laptops, and have active social media or email accounts.

❖The survey was administered using the online survey platform Qualtrics, and was distributed to potential respondents primarily via SMS (WhatsApp) and emails, as well as telegram and Facebook. Survey questions investigated respondent demographics, AB prescribing practices, laboratory use, and AB usage regulation. At completion, survey data was downloaded and analysed in Excel.

RESULTS

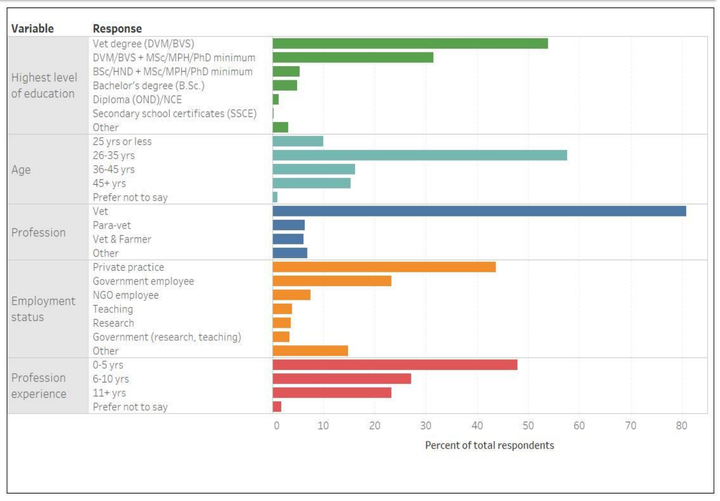
❖ A total of 413 respondents completed the survey. The majority of respondents (98%) prescribed antibiotics in their practice.

❖ A substantial proportion of vets and para-vets (33%) do not use laboratories to support diagnosis.

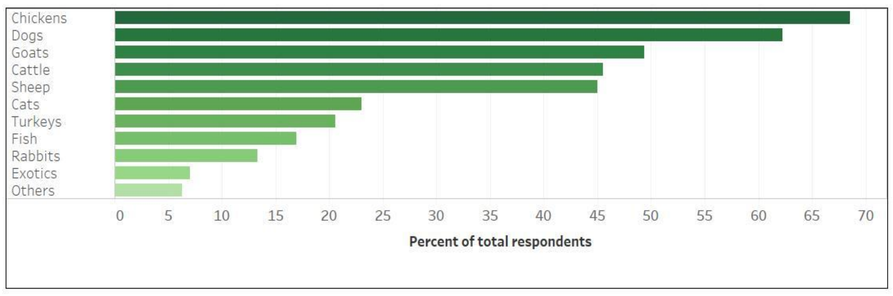
❖ Antibiotics were mostly used for therapy/prophylaxis (56%) of diseases.

❖ The majority of practitioners are unaware of guidelines and most consider guidelines as influential on AB stewardship.

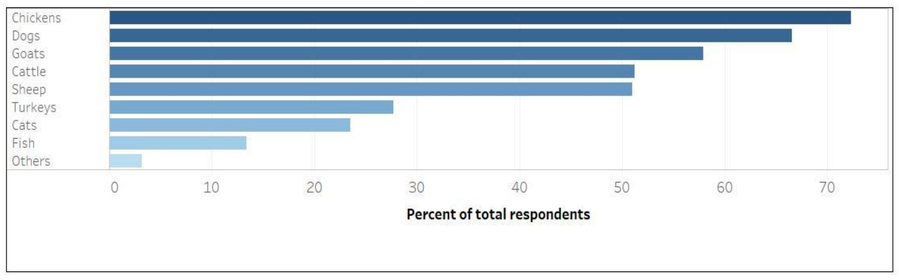
Demographics of survey respondents



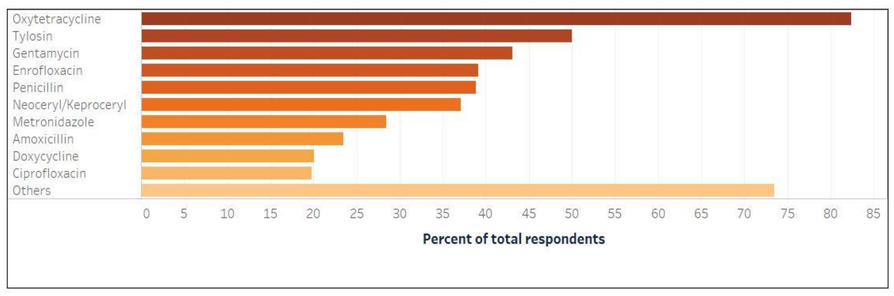
Species most commonly seen in practice



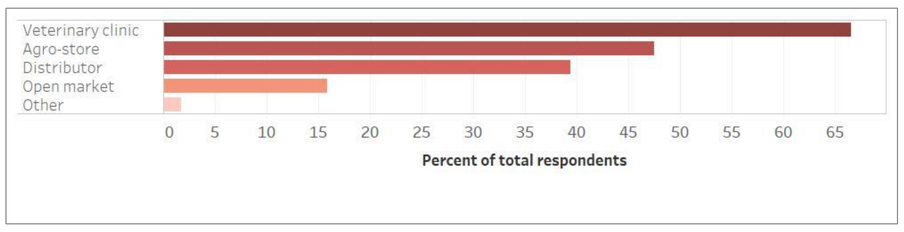
Species most commonly prescribed antibiotics



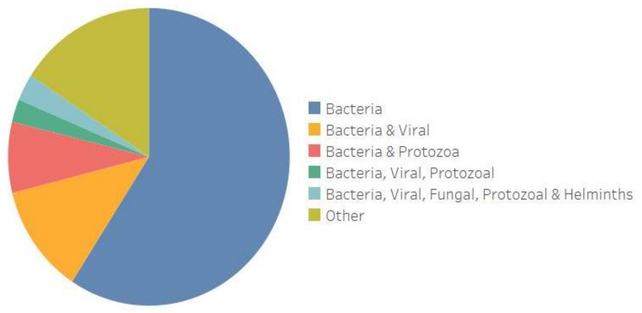
Most commonly prescribed antibiotics



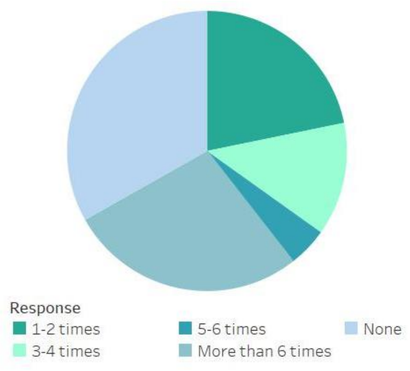
Most common sources of antibiotics used



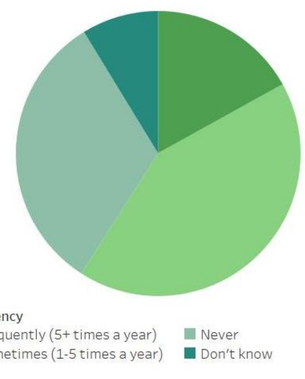
Pathogens targeted for antibiotic use in practice



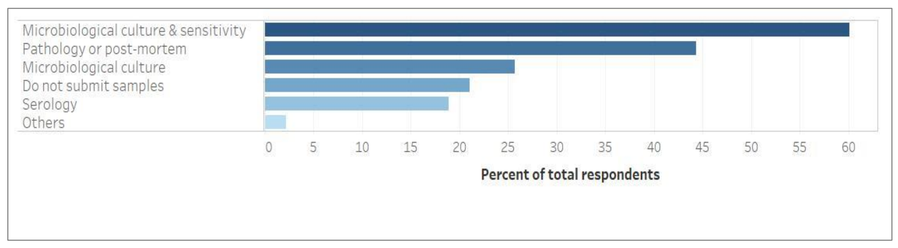
Use of laboratories for clinical diagnosis in previous year



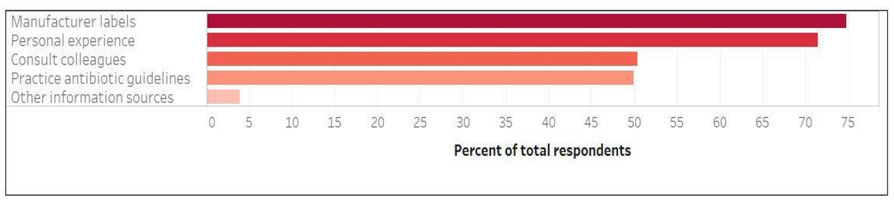
Frequency of antimicrobial sensitivity testing



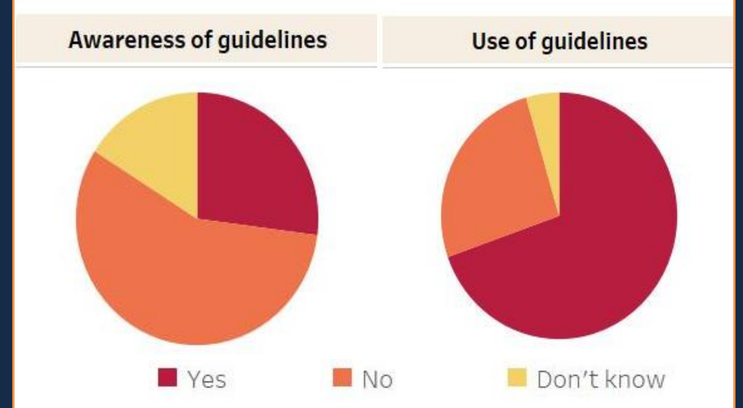
Laboratory test requested for diagnosis



Information sources guiding antibiotic use



Government-issued guidelines on antibiotic use



DISCUSSION

❖ Study findings indicate there is limited use of lab diagnostics and antimicrobial sensitivity testing to guide decisions on antimicrobial use. Diagnosis (Dx) is mostly made from clinical history and empirical evidence only and may be inaccurate. Microbiological identification, culture and sensitivity is needed to inform Dx, treatment and AB choice [3].

❖The reported use of oxytetracycline and tylosin by most animal health professionals is of concern as a high level of tetracycline resistance has been reported in animals as well as humans in this region, highlighting the need for better stewardship [4].

❖A significant number of practitioners use AB for diseases of protozoan, viral, and fungal origin. The indiscriminate use of AB is likely to promote selection for resistant bacteria [5].

❖Though awareness of AB guidelines were low, a high proportion of practitioners aware of them reported their use in guiding prescribing decisions. The lack of awareness however may reduce access to AB information resulting in improper antibiotic usage.

CONCLUSIONS

❖ Promoting the use of laboratories for clinical diagnosis and antimicrobial sensitivity testing would help guide decisions on appropriate antibiotic use and lower misuse of ABs in veterinary practice.

❖ Absence and lack of adherence to robust regulatory guidelines could be negatively impacting on choice of ABs by animal health practitioners. There is need for proactive action by regulatory bodies to increase awareness of AB guidelines among veterinary professionals such as by providing current and widely publicized information.

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