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Status on Implementation of Core Health Routine Practices Among Dog Owners in Shanzu, Mombasa County

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Abstract

Routine practices in dogs are those practices in addition to feeding and exercising your dog, that are needed to keep your dog healthy throughout its life. These include routine veterinary care for vaccinations, parasite control and dental care, grooming and protection from household hazards. Vaccination is a key component of preventive medicine in dogs and are given to stimulate the immune system against infections before exposure. Similarly, deworming and ectoparasite control are used to reduce parasite infestation that usually deprive the host of nutrients and can spread disease.

A questionnaire survey was carried out in Shanzu community of Mombasa County to determine the implementation status of these routine practices amongst dog owners. A total of 50 respondents were randomly selected and requested to answer the questions relating to vaccination, deworming and spraying of dogs.

Most (60%) respondents kept one dog and 62% kept the dogs to provide security while others kept them as companion animals (16%), and breeding (10%). It was found that 64% of the respondents had vaccinated their dogs mainly against rabies (42%) and parvovirus infection (20%). Veterinarians (36%) were the main providers of vaccine whereas, agrovets (16%), animal health assistants (8%), Veterinary clinics (2%) and conversely, 38% had not vaccinated their dogs. In regards to deworming, 76% of dog owners reported to have dewormed their dogs at different intervals. Most (52%) of them do the deworming monthly, 16% after every 3 months while the rest do it irregularly. Zerokrim® (74%) was the most common drug used for deworming followed by prazivet (2%), however, other respondents (24%) could not name the drug they used. Most of drug was either from a veterinarian (52%) or agrovet (38%).

More than half (56%) of the dog owners knew the drugs that could be used to control ectoparasites in dogs. Eighty percent of them said they washed their dogs weekly, 2% after every 2 weeks while 18% did it irregularly. A majority (66%) of them used Tixfix while the others (34%) used dudukrin where these acaricide and shampoo were sourced from veterinarians (64%) and (36%) from agrovets. The study established that slightly above 50% were aware of laws pertaining to dog keeping, however, 98% of them had no knowledge of dog control and welfare act of 2015. It was concluded that even though Shanzu community vaccinate their dogs, they only vaccinate against two conditions. Similarly, they know of only two anthelmintics and most of them are not aware on legislation pertaining dog control and welfare. Therefore, it is recommended that the community be sensitized on core vaccinations for dogs and civil education on the statutory laws on dog control and welfare.

Keywords: Dogs. Vaccination; Deworming; Ectoparasite control

Introduction

Dog's role among humans was mostly utilitarian until 18th century when the term man's best friend came into the lexicon. Their working roles are reduced today, but their importance at home has increased from pets to sporting companion to service dogs. And due to that quite a number of people have adapted some routine practices in dogs in addition to feeding and exercising to keep the dogs health. They include Vaccinations, parasites control, grooming and dental care. Having a routine is important especially for dogs, when a dog is on a consistent schedule each day the dog gains a sense of stability and a better idea of when they

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will go outside to pee, walk, fed etc.

Several vaccines are routinely given to dogs as the core vaccines against serious infections for example canine distemper, parvovirus, rabies etc. Several other noncore vaccines are important in certain regions and situations for example bordetella, Lyme disease [1]. Also routine vaccination against rabies helps to eliminate human rabies bite or rather decreases the incidence. Since the program supporting regular vaccination of dogs has contributed to both dog health and public health. A number of controversies surrounding adverse reactions to vaccine have resulted in authoritative bodies revising their guidelines as to the type and frequency and location for dog's vaccination. In 2010 and 2011 revised guidelines and addressed concern about adverse vaccine reaction.

The primary internal parasites of dogs include roundworms, hookworms, whipworms, and tapeworms. These worms damage the digestive tract and interfere with absorption of essential nutrients. Intestinal parasite infections are diagnosed by finding worm eggs or actual worms in fecal samples which should be tested periodically. The Center for Disease Control (CDC) and prevention recommended deworming treatments at 2, 4, 6 and 8 weeks of age for puppies [2] as well as current treatments given to the mother to eliminate re-activated larvae and prevent horizontal transmission from puppies that maybe shedding roundworms and hookworm's eggs [3].

Common external parasites include fleas, ticks, and mange mites. Monthly preventive treatments are available to control fleas and ticks and are administered as body sprays or spot on preparations that are placed on the skin between the shoulder blades. Mange mites can be detected by scraping the skin of infected areas for signs of mites or their eggs. Ectoparasites play an important role not only as pests but also as vectors of various infections to dogs. They can transmit different pathogens like viruses, bacteria, protozoa or act as intermediate host for filarids and cestodes [4]. Understanding the implementation of these important routine practices is important in communities with increasing population of free roaming dogs.

Methodology

The study was done in Shanzu community within Mombasa County, Kenya. Shanzu lies 20km from Mombasa and is a small agricultural area with hot and humid weather and average ambient temperature average of 17.50C and an average annual precipitation of 695mm. The project targeted the dog owners in the Shanzu community. Respondents were randomly selected and structured questionnaires were used to collect data on dog ownership, vaccination, deworming, ectoparasite control and the general knowledge on dog population control and welfare. Data obtained from the survey was entered in Microsoft excel program 2016 and exported to Statistical Package for Social Sciences (SPSS version 22) and analyzed, then descriptive statistics done for the various variables.

Results

Demographic Information

From the 50 respondents who participated in this study, (40%) were aged between 26-35 years, (32%) between 18-25, (24%) between 46-60 years and (4%) above 60 years. Most (62%) of the dog owners were male while females formed the remaining (38%). Those with post-secondary and primary school levels each had 44%, with 10% having secondary education and only 2% with no formal education.

Slightly above have of the dog owners were Christians, (38%) Muslims and (12%) orthodox. Majority (60%) of the dog owners kept 1 dog in their homesteads with the rest keeping more than one. The study further revealed that the dogs were kept for different reasons; (62%) for security, (16%) as companion animals, (16%) for breeding purposes whereas (10%) did not give the compelling reasons for keeping dogs. Apart from dogs, other animals were kept in the homesteads including cats, cows, goats and poultry.

Dog Vaccination

Results indicated that (64%) of the dog owners had vaccinated their dogs against either rabies (42%) or parvovirus (20%). Most vaccine was either given by a veterinarian or an animal health assistant with (90%) of the respondents having been issued with vaccination certificate.

Dog Deworming

Most of the respondents (76%) had at least administered anthelminthic medication to control endoparasites at different intervals. Most (52%) of them did the deworming monthly,(16%) of them after every 3 months while some do it irregularly. A trivalent anthelminthic (Zerokrim® composed of Praziquantel, Pyrantel Pamoate and Febentel Chewable Tablets) is the most common drug used for deworming (74%) whereas only (2%) had used Prazivet® (Praziquatel/Pyratel Pamoate/Febatel). It was further established that a larger majority (66%) of them were not aware of other drugs which could be used as alternatives for deworming. The anthelmintics were mainly sourced either from veterinarians (52%) or agro vets (38%). At least (28%) of the respondents admitted to administer anthelmintic

themselves.

Ectoparasite Control

Eighty percent of them wound wash their dogs weekly, (6%) after every 2 weeks and some did it irregularly. A majority (66%) of them used Fluazuron (Tixfix®) while the others (30%) applied Pyrethrins (dudukrin®) when washing their dogs. These acaricide and shampoo were sourced from veterinarians (64%) and (36%) from agro vet.

General Results

The findings from this study revealed that over 50% of the dog owners were aware of laws pertaining to dog keeping, however, 98% of them did not know of dog control and welfare act 2015. It was further established that 92% had knowledge on dog population control methods mainly castration (74%) and spay (20%). In regards to puppy deaths, respondents reported parvo virus (68%), lack of milk (24%), poor nutrition (2%) and poor management. Majority (86%) of the respondents kept their dogs outdoor at night, with 52% feeding their dogs once a day. It was established that 82% of the respondents were aware of rabies with 78% describing the steps to take in case of a dog bite including washing with soap and water and seeking medical attention. Regarding the actions on biting dog, more than half (56%) would report it to a veterinarian, 26% confining the dog 14% would do nothing whereas 4% would kill the dog.

Discussion

Despite its importance [5] accurate data on pet animal vaccination remains elusive [6] partly because pet sector lacks national over site of population health. On a brighter side more than 80% of dog owners in this study population had recorded vaccination of their dogs. Though these 20% unvaccinated dogs help vaccine preventable pathogens persist in the population, especially in areas of higher socioeconomic deprivation despite the fact the vaccines are often free in the studied population [7].

Most established vaccine guideline groups have defined a core set of vaccine antigen that every dog should benefit from [8].Interestingly, and in contrast to overall vaccines dogs in this study area receive more of core vaccines than noncore most especially rabies with 80% than parvo virus vaccine with 20% suggesting vaccine guidelines and information on vaccination of rabies is more than other diseases e.g. parvo virus. Rabies vaccine in some countries is a core vaccine [9].

As per the results from our dog owners 76% do deworm their dogs and 24% didn't. Most owners 52% dewormed monthly 16% after 3months and 32% irregularly. In contrast with the study in Netherlands where 10.8% of dogs had never received any anthelmintic treatment, 21.5% were treated once a year, 19.3% twice a year, 11.6% three times a year, 16.2% four or more times a year and 12.8% were treated because of indication [10] and the most important factor influencing deworming frequency was the frequency of veterinary visits or if owners visited their veterinarian more than once a year. The percentage distribution on how the dogs receive their deworming is by veterinarian and so they have a key role in instructing the dog owners with regard to helminthoses and their prevention. The remaining percentage of deworming frequencies despite the high potential parasite infection risk suggests dog owners need advice and more information to be improved to ensure 100% of dog deworming in this study area. Regarding the anthelmintic used majority of dog owners 74% use Zerokrim 2% prazivet and 34% others and due to this results the veterinarian do have a role to play in educating the owners on several licensed and effective anthelmintic to be used thus to achieve the goal of better implementation of expert recommendation. The study also shows most owners 68% knew of the possibility of transmission of parasite to human and most owners aware were significantly higher in owners with secondary and academic degree, In contrast to a Portuguese study report that 35% did not know about the transmission of parasite to themselves [11].

Results in this study shows that most people are aware of parasitic control in dogs (54%) although some owners administered drugs at irregular intervals which may render them ineffective. Parasiticides are an essential component of any parasite control regime. 80% treated their animal weekly against external parasite 6% every two weeks and 14% irregularly. This results contrast with other international studies, namely from Portugal [12] where 92.2% of the dogs surveyed were treated against external parasite(although all-year round or seasonally (at monthly intervals) in just 50.5%.In UK, control of ectoparasite infestations remains a considerable challenge due to the absence of clear treatment standards, and high prevalence of ectoparasites in dogs [13] and many other parts of the world. 66%used tixfix and this could lead to the fear of resistance. Most of the owners go the treat from the vet.

The results of the present study have shown that a relatively higher proportion of dog owners (82%) in survey area are well informed on rabies as a zoonotic disease and how it's transmitted to humans, 18% don't.The Nairobi county government recently passed and gazetted the dog Control and Welfare act 2015, Number 10 of 2016.This Act is

a public health measure that aims at licensing all dogs within the city boundaries. It's clearly from the study that very few people are aware of this Act 98%have no knowledge of the Act. And only 50% knew about all the laws of dog keeping in the Kenya.

Systematic review found that dog population management is conducted in many countries globally [14].Similarly from the results of this study majority of respondents were aware of the dog population control methods (92%),most especially the fertility control measures this can be achieved through surgical or chemical sterilization or contraception, [15].Surgical sterilization is the predominant method of fertility control this results in a reduced desire to seek out mates, as well as reduced sexual competition, which can cause weight gain [16] and decrease aggression between individuals. Like in my study 74% knew of castration as a population control, 20% spays. This method involves collecting dogs and carrying out spay or castrations surgery in either a fixed location or mobile clinic . This has been carried out in several countries and states ,for example in Italy [17]. Surgical sterilization is generally more social acceptable and most known than culling or any other methods. Population management therefore typically focuses on free-roaming dogs [18] to control the population size and depending on the approach taken to improve dog health and welfare and mitigate against public health and environmental problems [19].

High mortality in canine neonates are related to many factors including prolonged labour ,maternal neglect or carelessness, lack of milk, plus congenital abnormalities and acquired disorders in the neonates [20].The immature status of the new born puppies makes them vulnerable and totally depending on intensive care from the dam. 24% of respondents have knowledge about lack of milk as a cause of pups' death, colostrum is vital for passive transfer of immunity to the new borns. Also milk is important so that the pups don't die of starvation. A puppy that is apparently normal at birth but fails to survive is referred to as a fader the cause of this syndrome is due to poor mothering, inadequate nutrition and infections [21].

There were significantly higher numbers of pups death, this loses were due to the occurrence of parvo virus and herpes virus infection. The prominence of infectious disease in this period may be as a result of the in utero transfer of immunoglobulins. It has shown that even without the ingestion of colostrum, a pup is usually protected for at least one week due to a small amount of in utero transfer of immunoglobulin [22].In my study 68% of respondent were aware of parvo virus infection as a cause of puppy mortalities.

Also, from the study most people prefer keeping their dogs outside 86% than inside14%. According to Ryan Llera, a number of meals a dog eats depends completely on the family schedule, dog should eat at least two meals each day but breakfast, lunch and dinner schedule is an equally great option, in contrast to my study 52% people feed ones a day and 48% twice a day. Finally, 78% knew what to do in case of a dog bite and 22% didn't know, 44% would seek medication. 34% wash of the wound. In other studies where people have experienced dog bites, they have practiced washing of the wound with water and soap was the best option [23]. Washing of rabies infected wounds with soap and water can increase survival by 50% [24]. 56% would report on to the vet, 26% would confine the dog and 14% do nothing.

Conclusion

Most dog owners in Shanzu community vaccinate their dogs but they only vaccinate against two conditions. Similarly, they know of only two anthelmintic and most of them are not aware on legislation pertaining dog control and welfare. Generally, vaccines and anthelmintic are readily available to Shanzu residents though with limited options.

Recommendation

The Shanzu community should be sensitized on core vaccinations for dogs and civil education on the statutory laws on dog control and welfare. They should also be educated on the importance of worms and ectoparasite control and the various drugs that can be used. The dog owners should be educated on the dog control and welfare and control Act of 2015.

Conflict of Interest

Authors have none to declare

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