

SHORT ARTICLE

Incidence of Dogbite in Dakshina Kannada, Karnataka: An Epidemiological assessment from 2009 to 2016

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Abstract

Background: Animal bites are the main cause of morbidity and death globally. Dog bite cases and rabies are under surveillance under Integrated Disease Surveillance Program in India. Efforts are taken to control dog population and prevent dog bites which are functioning effectively yet needs understanding of the burden of the problem and suitable measures to reduce the burden. **Aims and Objective:** To understand the incidence dog bite cases from 2009 to 2016 and suggest measures to control the problem. **Methods:** The cases of dog bite reported to Health facilities in the district were reported to District Surveillance Unit. These cases of dog bite from 2009 to 2016 were included and incidence analysis was done understand the Magnitude of dogbite cases in the District. **Results:** The article provides an overview of increasing incidence of dogbite cases in Dakshina Kannada from 2009 upto 2016. There is a need to increase effort to control dog population throughout the district and introduce cost-efficient vaccinations. **Conclusion:** Increasing number of dogs are posing a threat to the community. Majority of the dogs are not supervised, and several are left unvaccinated. The problem needs immediate attention and intersectoral coordination with public involvement.

Keywords

Dog bite; Dakshina kannada; stray dogs; waste disposal; Karnataka

Introduction

India faces many problems as uncontrollable population of animals specially dogs and cats is posing a threat to life. Pet animals like dogs and cats are often considered a part of the family and are most common pets in India. They are often effortlessly managed at homes. Yet they might not be good friends always as an estimated 4.5 million people are bitten each year and almost 100% of them are due to domestic dogs(1). Rabies is a fatal

disease caused by bite and virus-containing saliva of an infected host, and rarely through contamination of mucous membranes, droplet transmission etc. There has been no absolute record to calculate the burden of dog bites worldwide however the Integrated Disease Surveillance Program provides an estimate of dog bite cases in India.

Dogbite and rabies death numbers are not satisfactory in India. Studies reveal that stray dogs cause this problem (2). The State of Karnataka has a Rabies control program with involves establishment

of Dog bite clinics in Public Health centres with professionals to provide first aid and facilities to manage the dog bite cases with post exposure vaccination of the victims.

Aims & Objectives

1. To understand the incidence of Dog bite cases from 2009 - 2016 in Dakshina on the basis of cases reported to District Surveillance Unit.
2. To understand factors responsible and suggest measure to control the Problem related to Dog bites in Dakshina Kannada

Material & Methods

Dakshina Kannada is a district in Southern coastal region of Karnataka with the approximate area of 4866 sq.km. The population of the district is about 21 lakhs. It consists of 5 geographical subdivisions (Talukas). The cases of dogbite reported to public and private health facilities were reported to district Surveillance unit and the data from 2009 - 2016 was analysed in the District surveillance unit to understand the incidence of dog bite cases in the district over the years to understand the burden and assess the talukwise dogbite cases.

Results

The analysis of data on dog bite cases from 2009 to 2016 revealed that Mangalore taluk had highest incidence of cases per 10,000 population in 2009 which decreased over the years while the incidence of dogbite per 10,000 population in Sullia taluk has increased over the years as showed in [Figure 1](#). The incidence was maximum in 2013 (34.15 per 10,000) and least in 2012 (22.005 per 10,000) with 4585 (mean number of cases) as show in [Figure 2](#). The incidence analysis of dogbite cases in Dakshina Kannada showed that the incidence was more than 30 per thousand population.

Discussion

Number of dogs in Dakshina Kannada as per Kannada as per 2011 census was 2,21,401 (3) which was approximately 36 dogs per 10,000 population. The number is definitely increased over the years. Euthanasia was practiced to control stray dog population since 19th century. The magnitude of the problem did not show any decrease due to which it was replaced with mass sterilization of dogs which is practiced even today. There have been a number of efforts from the Government of India to prevent dog bites. The challenge is to control the increasing number of stray dogs alone. The Government

suggests the owners and dog caregivers to take up birth control measures for their dogs so as to control their population and also undergo vaccination (4). Even the stray dogs are targeted to be vaccinated (5). The Animal Welfare Board of India (AWBI) acts like an advisory body on matters related to Animal welfare and Animal rights and functions under the Prevention of cruelty to Animals Act. Various interventions are implemented to safeguard the public from the problems arising from stray dogs. In Dakshina Kannada the Department of Health and Family Welfare functions in collaboration with The City Corporation and Animal care trust (Non Profit Organization) which is recognized by AWBI. The stray dogs are identified, and captured from their location through vehicles. These dogs are vaccinated against Rabies and also undergo Animal birth control measures (ABC). They are then dropped back to their respective locations after recovery (6). Several hundred dogs are Vaccinated in the district so far. A similar effort including Animal Birth Control and sterilization of dogs was taken up in Delhi Urban, however such efforts have not been successful due to various reasons as the number of stray dogs increased as many dogs got disowned by the families due to illness, easily available carcasses for consumption and lack of infrastructure for sterilization and vaccination (7). This poses a question on the success rate of the intervention in the district as open waste disposal is done by many families along the streets.

Only 40% of the dogs in India are completely supervised (8) Various countries demand license to own a pet. In the state of New York, Dog license cost is \$8.5 and \$34 for spayed and non-spayed dogs respectively. This rather encourages owners to sterilize their pets (9). Lack of strict measures to implement contraceptive procedures in pets has also contributed significantly to their increasing number. Adding to this is the high cost of animal vaccination, veterinary services which leaves many dogs unvaccinated. As per AVMA an average expenditure per dog in United states is \$227 which includes mandatory vaccination and their health care (10) and average expenditure on dog vaccination in India is about \$50 in first month alone.

However, the surveillance for dog bites is active in the District and every case is notified to the Integrated Disease Surveillance Unit from the Public and Private Health Institutions. The District Surveillance Unit in Dakshina Kannada notifies all the

dogbite cases in the District to the State (11). The Rabies Control Program in the state is strengthened and every health facility is required to have a dogbite clinic with necessary facilities to conduct post exposure prophylaxis of wound. This also includes provision of Immunoglobulin and vaccination against rabies. The data on increasing dog bites is an incite to plan measures in collaboration with other departments. Moreover, the interventions for dog control is carried out in Mangalore urban and need to be extended to other parts of the district as well which might contribute to the overall incidence of cases in the district.

Conclusion

Dakshina Kannada is one district in Karnataka showing the burden of the problem. Many more cases will be pooled in if all dog bite cases were to be reported. The cases have been increasing from 23 to 32 per 10,000 population from 2009 to 2016. The cases were seen highest in Mangalore since 2009 and interventions are planned in Mangaluru by combined effort of District Health department, City Corporation and Animal Care trust. Extra funds may be required to plan interventions for all the Taluks which might draw people's attention towards the rising problem. Interventions to control dogbite needs public involvement. Owing pets is much easier in India. There needs to be a dog licence made mandatory. This needs to be associated with regular vaccination and control of their population. An multisectoral collaboration of various sectors and NGOs and a positive response from the community is vital factor for the success of the implementations. Improving Health literacy, emerging veterinary clinics, lessons learnt from experience and support of the health authorities can make it possible to contain the problem of dog bite which is expected to rise gradually in next two years. Strict measures to control dog population and promote veterinary health can prevent diseases caused by them.

Recommendation

The study and the lessons learnt from the similar studies denote that there needs to be robust actions taken to control Dog population. The budget for such activities need to be increased so as to involve more NGOs like Animal Care Trust, who can perform Animal birth control measures and vaccination throughout the state in all other Talukas. Licensing of dogs should be done so as to improve supervision of animals. Proper waste and disposal carcasses need

to be done to make it inaccessible to dogs so as to prevent pooling of animals in streets.

Limitation of the study

Cases not reported to the District Surveillance Unit were not included in the study

Relevance of the study

The study gives an alarming number of increasing Dog bite cases and need for collaborative efforts of Waste management, NGOs and equal efforts and initiative from the citizen to control the public health problem.

Authors Contribution

All authors have contributed equally in the article.

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Figures

FIGURE 1 THE TALUK WISE DOGBITE CASES FROM 2009 TO 2016

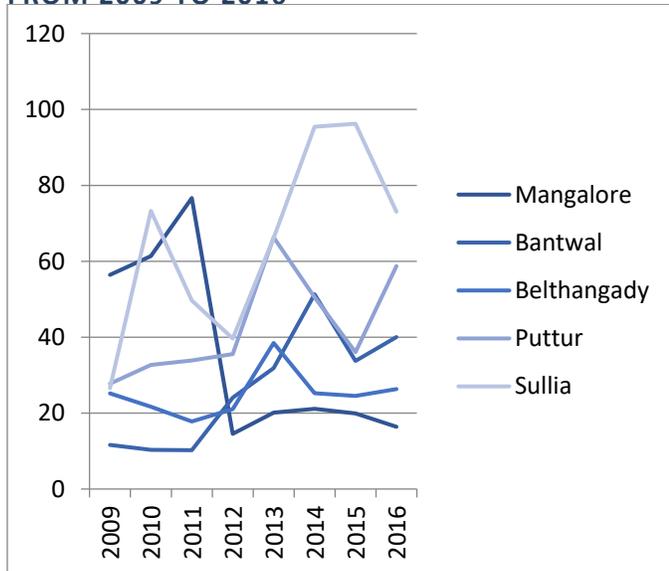


FIGURE 2 YEAR WISE INCIDENCE OF DOG BITE PER 10,000 POPULATION

