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Investigation of Dog Bites Victims in Kebribeyah District: Ethiopian Somali Region, Eastern Ethiopia, December 2013

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Short Communication

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ABSTRACT

Introduction: Dogs bite are the most important public health concern in Ethiopia, following the report of dog bites from Kebribeyah District of Region, investigation was conducted to verify the existence of the dog bite and conducting public health intervention.

Methods: Cross-sectional descriptive study was conducted between 20-22/11/2013 in the town and surrounding areas. Line list was developed from registration book. Questionnaire was developed & used to elicit the required information. Epi Info 3.5.3 software & Microsoft Excel 2007 did analysis & entry.

Result: Starting from 01/11/2013 to 30/11/2013, total of 16 animal bites reported from kebribeyah. Both sexes were equally bitten eight (50%) each. Majority of the victims 10 (62.5%) were in the age group of one -20 years. Most of the victims exposures 14 (87.5%) were WHO Classification of category III, whereas 2 (12.5%) victims were category I. common site of bite was the leg 8 (50%) victims. About eight (50%) of the victims has been reported within 24 h of the bite. Majority of the victims 13 (81.3%) were Unprovoked bites. All bites were due to stray dogs. About 14 (87.5%) of the cases received post exposure prophylaxis (PEP). Health professionals working at health center do not have exposure on administration of PEP. There is no coordination between the animal health and public health services. Wound management, active case searching & referring cases to Karamara hospitals for PEP, were among interventional activity conducted.

Conclusion: There were dog bites in Kebribeyah Woredas of Somali Region. Keeping sanitation of abattoir (fencing), on job training on administration of PEP and Inter sectoral collaboration both veterinary and public health staff (one health approach) is recommended.

INTRODUCTION

The world population of domestic dogs is approximately 500 million and it is considered that a substantial number of this population of dogs are stray, owned but free roaming or inadequately supervised ^[1]. Human injuries due to dog bites are very common and are a major worldwide public health problem. Several systemic diseases may be transmitted via dog bite ^[2].

According to WHO report, animals (especially Dogs) around the world, considered for prophylaxis and treatment against rabies and almost (55,000), bite ten million people die from this disease annually ^[3].

Dog attacks, by street or domestic dogs, with injuries from very minor to significant and severe to fatal, are not uncommon. Attacks on the serious end of the spectrum have become the focus of increasing media and public attention ^[3].

Bites and scratches related to dogs and cat represent the most important public health concern because of the associated physical and psychological trauma, they cause wound infection by different microorganisms and the risk of rabies transmission ^[4,5].

As a disease that mostly affects poor communities, rabies is a classic example of a neglected tropical disease. A vaccine-preventable disease, most deaths from rabies arise due to lack of awareness and poor access to proper health services. It is estimated that around half of the global human population lives in canine rabies-endemic countries and is at risk of exposure [6]. In Ethiopia, approximately 76 persons per million of the population receive anti-rabies post-exposure treatments annually due to the widespread nature of dog rabies in the country [7].

In Ethiopia especially In Addis Ababa where dogs are the commonest domestic animal, the total dog population and the number of stray dogs are estimated to be 250,000 and 120,000 respectively according to the Urban Agriculture Extension Core process [4].

On 19/11/2013, Ethiopian Somali Regional Health Bureau received report from kebribeyah District about the dog bite situation in which 10 people was bitten by dog. Following the report, regional PHEM (Public Health Emergency management) sends the teams composed of Field Epidemiologist & Health Officer to the site having the objectives verify the existence of dog bites, provide technical support for District, and characterize the situation by time, place, & person and to recommend for the future based on the finding.

METHODS

Study area

Kebribeyah town is the capital town of District & found 50 km away from Jijiga town. The town has four kebeles and one-refugee camps. The town has one governmental health centers & one-refugee health centers.

Study design & period

Cross-sectional descriptive study was conducted between 20-25/11/2013 in the town and surrounding areas.

Data collection methods

Reviewing of health center records, visiting of private clinic, ARRA health center, meeting with health professional, with agriculture office head of District & community. Line list was developed from registration book & from interview with bitted people at karamara hospitals. Questionnaire was developed & used to elicit the required information on the kind of animal causing the bite, and the bitten human's subjects regarding the age, site of bite and/or scratch and other important variables.

Case definition used was any person bitten by animal in kebribeyah town and surrounding kebeles between December 1-30/2013. Classification of exposures was done as per guidelines given by World Health Organization (WHO). A bite was considered as provoked, if it resulted from subject initiating interaction with the dog such as playing with the dog or annoying the dog during his meal.

Environmental investigation

We visited sites from which cases were reported.

Data entry & analysis

Data entry, cleaning was done by Epi Info software and Microsoft Excel 2007 did Data Analysis.

RESULTS

Starting from 01/11/2013 to 30/11/2013, a total of 16 dog bites reported from kebribeyah district. The male female ratio was 1:1. Patients were aged between 5 years and 50 years (median 15 and mean 21 years.). Majority of the victims 6 (37.5%) were in the age group of 11-20 years, followed by >30 (31.25%), while least number of cases 1 (6.5%) were 21-30 years. Cumulatively age group of 0-20 years accounted 10 (62.5%) victims, 31-50 year age group accounted for six (37.5%) victims (**Table 1**).

Table 1. Showing distribution cases by Sex and Age Kebribeyah district 2013, Eastern Ethiopia (n=16).

Age	Sex		Total	Percentage
	Male	Female		
<10	1	3	4	25%
11- 20	4	2	6	37.5%
21-30	1	0	1	6.25%
>30	2	3	5	31.25%
Total	8	8	16	100%

Majority of the victims 14 (87.5%) were of category III, there were two (12.5%) victims of category II but no victims has been reported in category I.

Most common site of bite was the leg, which accounted for eight (50%) victims, Followed by hand 6 (37.5%), while least was Neck 1 (6.3%) (**Table 2**).

Table 2. Showing distribution according to the site of bite Kebribeyah district 2013 Eastern Ethiopia (n=16).

Site	Number of cases	Percentage %
Hand	6	37.5%
Leg	8	50.0%
Leg & Arm	1	6.3%
Neck	1	6.3%
Total	16	100.0%

Majority of the victims has reported within 24 h of the bite 8 (50%), followed by 24-48 hours 5 (31.7%), while those ranging >48 h constitute 3 (18.7%) (**Table 3**).

Table 3. Showing distribution of cases by time of visit health facility Kebribeyah district 2013, Eastern Ethiopia (n=16).

Time (h)	Number	Percentage (%)
<24	8	50%
24- 48	5	31.3%
>48	3	18.7%

Unprovoked bites were seen in majority of the victims 13 (81.3%) whereas provoked bites were seen in only three (18.7%) victims (**Table 4**).

Table 4. Showing distribution of cases by provoking Kebribeyah district 2013, Eastern Ethiopia.

Provoking	Number	Percentage %
Yes	3	18.8%
No	13	81.3%

All of the victims were due to stray dogs 16 (100%).Majority of the cases received PEP 14 (87.5%), while two (12.5%) of the cases did not received PEP.

Inter-sectoral collaboration

No coordination between the animal health (Agricultural Office) and Health office at District. Each office was running by their own. ARRA (Administration of Refuge & Returns Affair) was playing an important role in provide logistic support. District health bureau & local health center play important role in wound management.

Environmental investigation

The regional team tried to assess the places/kebeles from which most bitted cases were reported & accordingly, the team observed that most cases 13 (81.3%) of cases were from kebeles 01 (Slaughtering place) area of town. The plain field on which the municipality slaughtering was not kept clean and large number of bones and blood was found.

Interventional activity done

Wound management, Active case searching, Referring cases to Karamara hospitals for PEP & Strengthening of surveillance were among interventional activities conducted.

DISCUSSION

The finding of this investigation showed that the victims of dog bite report & referred to ARRA health centers and Karamara hospital, Ethiopian Somali region, between December 1-30 and 2013.

In current investigation, both sexes affected equally unlike most studies which males affected more than female. The sex distributions dog bite victims in our cases differed from those in other studies, which frequently involved men ^[2,3,5,8-13], the difference in our investigation may be due to less number of study participant in study area.

All of the cases of the dog bites were by stray dogs that attacked their victims aggressively without being provoked. Similar finding was reported by ^[11]. This is attributed to the fact that there are many stray dogs roaming on street in study areas, which are contributing higher bite.

The median age of victims in our study was 15 years; this is in line with study ^[6,12-14]. Children because of their curiosity, lack of inhibition, limited knowledge, and experience about dog behavior and most importantly inability to protect themselves from attacks from dogs may be partly responsible for the higher number of bites in pediatric population ^[13].

During our current investigation, Most cases were self-referred to health facilities to get PEP at this may indicate the awareness of community toward severity of bites.

The majority of bites were on legs followed by hand, multiple body parts and other body parts and the least was on the neck and at the back. This may be due to Attempts at using; the foot and hand to avoid animal bite may be the possible reason for these parts being affected more. Similar study was reported ^[11-13,15].

The plain field of slaughtering was not kept clean and large number of bones and blood was found & this may favors attraction of stray dogs to the area. Similar finding was reported by ^[16] Abattoir wastes and their disposal in cities of Nigeria have been poor & attract dog population. Slaughtering area was without fences and we have seen goats & donkey around those areas & if bitten by the dogs may cause another problem. According to resident of the areas, the numbers of stray dogs coming to those areas restrict their movement during night time. The noise of barking of large group of dogs disturbed the community.

The sources of stray dogs were traced, as Somali communities do not have culture of living with dogs. There was military camps having number dog population & when the camp was shifted to other site this dog became stray this is in line with ^[13], In some countries with high population of stray dogs, dog bites are known to be common. Moreover, such large population of stray dogs arises from poor dog ownership where dogs belonging to individuals and/or families are left uncared for and unsupervised with partial or no restriction and some other times the stray dogs might have migrated from other areas.

There was people did not receive any treatment their main reason were financial problem to go to Jijiga (capital town of the region where hospital was located).

Even though Regional Health Bureau provide PEP for District, health professional working at health facility do not have the exposure on administration of PEP, this causes patients travelling long distances, extra expense, & those not having capacity to travel to Jijiga do not get treatment this may suggest on job training of on administration of PEP for local health professional is mandatory ^[17,18].

Unavailability of preparedness at woreda level, not collecting of laboratory sample by regional agricultural office was among limitation in current investigation.

CONCLUSION

There was a dog bite in Kebribeyah district of Somali Region; living around the slaughtering may be contributing risk factor to be bitten by dog. Keeping sanitation of abattoir (fencing), On job training on administration of PEP, Sensitization of schoolchildren on prevention, treatment and control strategies and Inter sectoral collaboration both veterinary and public health staff (one health approach) is recommended.

COMPETING INTERESTS

The authors declare that they have no competing interests.

AUTHORS' CONTRIBUTIONS

YM was principal investigator and developed the manuscript.

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