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Study on Knowledge, Attitude and Practice of Community on Rabies in Mogor Town, West Shoa, Oromia, Ethiopia

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Abstract

The current study were to determine the degree of KAP and awareness of animal-human transmission of rabies, a survey was designed among dog owners and inhabitants of west Showa Ada'a Berga woreda Mogor town central Ethiopia. A cross sectional questionnaire survey on 392 inhabitants of the Mogor town at house hold level. A simple random sampling was used to select the study subject and accordingly the eligible individuals were interviewed using a structured questionnaire 392 study subjects were interviewed. Out of which, 62.2% were male and the rest are female. A semi structured questionnaire was administered to 392 respondents comprised of 14.8% rural and 85.5% urban and 18 from town areas. Accordingly, the (83.9%) of the study participants had heard about rabies from different sources. Despite the fact that the majority of communities have effective KAP regarding rabies, very few residents have vaccinated their dogs, putting the neighbourhood at risk. It is hoped that the study's findings would deepen our grasp of the disease's issue and provide crucial information for creating educational programs. Campaign that targets at alleviating the problem of rabies in the town. Among study participant, 45.7 % of the respondents were not experienced for vaccinating their dog. There is typically a disparity in rabies awareness and openness to rabies control efforts. Governmental and non-governmental stakeholders should consider increasing awareness of the community about the rabies for controlling the disease using social Medias and formal training.

Keywords: Attitude; Dog; Knowledge; Mogor Town; Practice and Rabies

Abbreviations

KAP: Knowledge, Attitude, and Practice; RNA: Ribonucleic Acid; WHO: World Health Organization; OIE: Office International Des Epizooties; RABV: Rabies Virus; MTM: Mark to Market.

Introduction

Rabies is a rapidly progressive and fatal viral zoonosis that causes encephalitis and caused by bullet-shaped viral particles of the genus Lyssavirus and family Rhabdoviridae, whose nucleus is RNA. The widely distributed throughout

the world with the exception of Australia, New Zealand, Japan, a number of European countries and some Caribbean Islands. Sylvatic rabies is a growing hazard to the human population and to domestic animals in many countries, and it is carried by wild animals, which act as a sizable and often uncontrollable reservoir of the disease.

Rabies virus causes inflammation of the brain in humans and other mammals pronounced by early symptoms of fever, tingling at the site of exposure, anorexia and change in behaviour [1]. Rabies is transmitted to humans or other animals by the bite of an infected animal whose saliva contains the virus, aerosols of the virus that can be spread in caves where bats roost, or by contamination of scratches, abrasions, open wounds and mucous membranes with saliva from an infected animal.

The most common transmission method for rabies seems to involve the ingestion of contaminated saliva after being bitten by a rabid animal. Fresh saliva or neurological tissues may be infected if they encounter broken skin or mucous membranes in the mouth, nose, or eyes. The rabies virus (RABV) is a highly neurotropic disease that often causes animal and human mortality in its victims.

According to estimates, RABV causes close to 55,000 annual mortality in humans [2]. Despite the fact that the real figure is probably substantially higher because to unreported exposures or inadequate diagnosis.Rabies is still one of the most serious and dreaded hazards to public health in the twenty-first century. As a neglected zoonotic disease, rabies is present throughout the world, with many deaths in human beings occurring in Africa and Asia in children younger than 15 years. Rabies is regarded as under-reported in many regions [3].

Dogs are the principal vector for human rabies, and are responsible for more than 99% of human cases. Hence, controlling rabies in dogs, and especially free-roaming (stray) dogs, is the first priority for prevention of human rabies [3]. Internationally, more than 15 million people obtain rabies post exposure prophylaxis treatment [4]. People predicted 55,000 with dying from rabies per annum [5]. Africa and Asia record the maximum human rabies deaths internationally with an estimated 24,500 annual report human deaths [6].
In Ethiopia, rabies is an endemic disease with a high incidence rate that has been diagnosed from various species of domestic and wild animals. However, available evidences suggest that domestic dogs are the main reservoir and responsible species for human cases in the country [7].

For increasing awareness appropriately, the knowledge gap among the community should be assessed and targeted. Public awareness and an increase of knowledge about rabies disease, first aid measures after dog bites, increased knowledge about dog behaviour and how to avoid getting bitten by dogs are suggested methods to prevent rabies in humans [8].

Rabies is primarily a disease of dogs in Ethiopia, particularly in West Showa zone Adea Berga Woreda Mogor Town, no adequate research has been done to address the knowledge gab on the disease through assessing the knowledge, attitude and practice of the community toward the disease. Therefore, the main aim behind the present study was to address the current information available on rabies in the study area through assessing the gap on knowledge, attitude and practice of the community toward rabies by conducting a questionnaire survey.

Statement of the Problem

Few studies have been done in Ethiopia to evaluate population awareness about rabies [9]. Rabies is a significant zoonotic disease that still affects both humans and animals [10]. The main source of infection for both humans and animals is dogs [7].

In Ethiopia, dogs are the main victims of rabies, while other domestic and wild animals have also been afflicted. Due to the high frequency of human-dog contact, it is also a prevalent issue among people. There is however, lack of information to determine the magnitude of rabies in man and other domestic animals in the country [11].

One of the barriers to the prevention and control of the disease in Ethiopia, particularly in metropolitan areas where canine rabies is endemic like Mogor town, is the general lack of public awareness about the disease. An essential first stage in creating control strategies for the disease and defining the extent to which plans will be carried out in Mogor town is to ascertain how communities see the source, route of transmission, symptoms, treatment, and potential intervention measures of rabies. Therefore, current research was conducted because of the high negative economic impact due to rabies disease in the Mogor town.

Objectives

- To assess the Knowledge, Attitude and Practice (KAP) of the community toward rabies disease in the Mogor Town.

Materials and Methods

Study Area

The study was carried out in Adea Barga district, Mogor Town, West Showa Zone, Oromia Regional State, Ethiopia.

Mogor town is located at 86 km from Addis Ababa the capital city of the country. The total land area of Mogor Town is about 1343 hak and it has two Industries. According to data of (MTM =2022) the total human population of the MTM is 20,000 (male= 12,500, and female= 7,500).

The data taken from Adea Barga livestock and fishery resource development office the livestock population includes 166,882 cattle, 58900 sheep, 32284 goats, 11,356 horses, 14,915 donkeys and 95,800 poultry and 7200 dog. Animal population in mogor town was 30,000 cattle, 8580 sheep, 540 goats, 990 horses, 1400, donkeys and 15,800 poultry, 750 dog [12].

Study Population

The study population was the communities of Mogor town those simple randomly selected individuals from Mogor town who live in at least one year.

Study Design

A cross-sectional questionnaire-based survey study was conducted from Dec 2021 to July 2022. A standard questionnaire was also designed and employing face to face interview on assessing knowledge, attitude, and practices among communities living in Mogor town regarding rabies disease.

Sample Size

The community of Mogor town and who are lived in the Mogor town for at least one year was included in this study. The required number of population to be sampled was calculated using the formula given by Yamane formula the questionnaire survey. A 95% confidence interval was considered to calculate the sample size. A total of 392 individual participants were selected randomly.

$$n = \frac{N}{1 + N \times (e)^2}$$

Where is n -sample size,
N-population size = 20000 of Mogor Town.
e- Acceptable sampling error
*95% confidence level and p= 0.05 are assumed. Hence, the total sample size was calculated to be 392

Method of Data Collection

A questionnaire was presented to each randomly selected individual. A structured questionnaire will be prepared to assess the knowledge, attitude, and practice of the community settled on urban of the study areas. In addition, the socio-demographic history of each respondent was recorded. The target groups of the study will be randomly selected individuals who live within the different locality of the study areas.

The questionnaire was administered to the population by common local language in Afaan Oromoo during the interview. Besides, they was briefed about the objective of the survey and asked for their consent before the interview was commenced. It was carried out by interviewing individuals.

Data Management and Statistical Analysis

All collected data were entered into the Microsoft Excel 2016 spread-sheet and imported to STATA version-14 statistical software for descriptive statistical analysis, and test of association between different risk factors and outcome variables.

Pearson's chi-square (x^2) test was used to access knowledge, attitude and practice with their respective age, sex, education level and occupation on Rabies disease. In all the analysis, confidence level was be held at 95% and statistical analysis was consider significant at $p<0.05$.

Results

Socio-Demographic Characteristics of the Respondents

The socio-demographic characteristics of the study subjects are detailed in Table 1. In this study, 392 indivuals were interviewed and 62.2% were male and 37.8% were female respondents. The vast majority of the study participants were high school and above 43.9 %. Regarding educational status, respondents were stratified according to their educational background as illiterate 19.1%, 37% were elementary, and 43.9 were high school and above. Occupational statuses of study participant were merchant 30.7%, farmer 28.3%, unemployed 20.9% and government employee 20.2%.

Knowledge Indicator Responses

The vast majority of the respondents (83.9%) have ever heard of the disease called rabies as shown in Table 2. When asked to know the cause for rabies, 53.3% of the respondents reported know cause and 46.7% were did not know. Half of the respondents, 48.6%, reported that they had seen a rabid dog or cat. Most of study part pant knows clinical sign of rabies, which is 73 %.

There is in general a good level of knowledge among the study participants regarding the possibility of rabies transmission from animals-to-animals, as mentioned by over 85.2% of the respondent.

Socio-demographic characteristics of the respondents	Frequency (%)
Gender	
Male	244(62.2)
Female	148(37.8)
Age (year)	
18-35	240(62.2)
36-55	129(32.9)
56-85	23(5.8)
Education	
Illiterate	75(19.1)
Elementary	145(37.)
Secondary and above	172(43.9)
Occupation	
Unemployed	82(20.9)
Farmer	111(28.3)
Merchant	120(30.7)
Governmental employee	79(20.2)
Marital status	
Married	288(73.5)
Un married	104(26.5

Table 1: Socio-Demographic Characteristics of the Respondents.

Categories regarding Knowledge of respondents	No. of respondents	Percentage (%)
Did you know about Rabies		
Yes	329	83.90%
No	63	16.10%
Causes Rabies		
Yes	209	53.30%
No	189	46.70%
Common source of Rabies		
Dog	79	79%
Wild bird	18	18%
Cattle	3	3%
Clinical sign of rabid animal		
Yes	286	73%
No	106	27%
Mode of transmission of rabies		
Yes	256	63.30%
No	136	34.70%
Curable after showing clinical signs in man		
Yes	218	55.60%
No	174	44.40%

Table 2: Respondents' Understanding of the Research Area's Rabies Transmission, Etiology, Host Range, and Clinical Signs.

Attitude towards Rabies Practice towards Rabies Preventive Measures

More than 54.4 % of the respondents were willing to vaccinate their pets, and almost all respondents (75.3%) agreed to both consult health professionals and traditional medication if they were bitten by dogs. However, 74.2% the respondents had strong believe on traditional medicine for rabies prevention and treatment. 40.8 % of the respondents were in favour of implementing the mass vaccination program.

Out of the 392 only 54.1% vaccinate their pets against rabies and most dog owners kept their animals safe by tying them up in a compound or keeping them in a cage. 45.7 % of the respondents did not vaccinate their dogs due to lack of knowledge on vaccine availability (Table 3).

Categories regarding attitudes and practices of respondents	No. of respondents	Percentage (%)
Action for bitten animal		
Treatment	44	11.20%
Isolate	104	26.50%
I don't know	84	21.40%
Action for rabid dog		
Killing	87	87%
Tie	13	13%
Seek for health professions immediately after bite		
Yes	58	58%
No	42	42%
Do you vaccinate your dog?		
Yes	213	54.40%
No	179	45.70%
Did you get training regarding rabies		
Yes	202	48.50%
No	190	51.50%

Table 3: Attitudes and practices of respondents regarding rabies in the study area.

Discussion

The findings of this study indicated that the majority of the respondents had moderate level of knowledge and attitude towards rabies and satisfactory level of rabies prevention practices. The present study indicated that the almost all (83.9%) of respondents had previously heard about rabies disease. The finding of this study was in line with a study conducted in different parts of Gondar and its surroundings with the report of 98% [13], report from Guadu, et al. indicated that about 99% of respondents had previous information related rabies, 96.4% [14] in which respondents were aware of rabies and heard about the disease and 98% [15] in which respondents were aware of rabies and heard about rabies. However current finding is all most similar with reports from Ali A [9] in which about 83% of study respondents heard about rabies through similar communication channels as indicated by the current study participants.

In the present study, among the 209 respondents, about 53.3% had understanding on the cause of the rabies they believed that the disease is caused by germs that agree with the finding of Fesseha H [15] in Mekele town with (51.6%).

The present finding, about 74.2% of respondents prefer traditional medicine as a primary choice of treatment than visiting the hospital for post-exposure treatment. Similar KAP study from Ali A [9] and in Mekele Fesseha H [15] reported 58.3% and 39% respectively that the study participants had strong beliefs in traditional medicine. Even a higher number of responses (84%), that prefer traditional medicine was reported by Jemberu TW [13] indicated that strong preferences on using traditional treatments against rabies. The current finding showed that almost all respondent owners 45.7% did not vaccinate their dogs that agree the finding of (95.3%) [16].

The reason for low dog vaccination practice in the study area could be due to large dependency on the traditional treatment using herbs, limitation of on availability, of vaccine. This is in agreement with Paulos Y [11] who noted that, dog vaccination practice was generally very low and non-existent in rural district of the current study area [17-41].

Conclusion and Recommendations

When left untreated, rabies, a serious viral virus spread by dogs, whether they are owned or strays, can be fatal. In this study finally, rabies was considered as the disease of both a veterinary and public health importance in the study area. All most all (83.9%) respondents had heard about rabies previously and 86% of respondents knew that rabies could be transmitted from animal to human that is good knowledge. However, knowledge deficiency was observed regarding cause and mode of transition of rabies. The presence of low vaccination coverage of dog, minimum formal training about rabies and high dependency on traditional medicine in the study area, were also well indicated. Disparities in rabies awareness and receptiveness to rabies control initiatives are common.

The following recommendations were given based on the aforementioned findings.

- Social media and official training by governmental and non-governmental stakeholders should be taken into consideration in order to raise community knowledge of the condition.
- Regular intervention should be targeted by stake holders such as Veterinary and health offices in the study area at controlling stray dogs and vaccination of dogs should be employed to control the disease.
- Regular vaccinations are necessary for domestic animals, particularly dogs and cats.
- Health and veterinary experts should focus on raising community knowledge of rabies and implementing preventative measures.

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