

COMMUNITY KNOWLEDGE, ATTITUDE AND PRACTICES ABOUT RABIES PREVENTION AND CONTROL IN ENDERTA WEREDA, TIGRAY

ABDELKADIR, K. S.^{1*} – BERHE, G.² – BSRAT, A.¹ – YOHANNES, G.¹

¹ College of Veterinary Science, Mekelle University, Mekele, Ethiopia.

² College of Health Science, Mekelle University, Mekele, Ethiopia.

**Corresponding author
e-mail: kedir12sid[at]gmail.com*

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Abstract. Rabies is a deadly viral disease transmitted through the saliva of infected animals via bites or scratches. It can be prevented through vaccination and by eliminating the disease from reservoir populations. Domestic dogs are the main source of transmission in many Asian and African countries. In Ethiopia, rabies is still a significant public health problem, with an estimated annual death rate of 10,000. Lack of awareness is a major obstacle to prevention and control efforts, especially in endemic areas. To assess the knowledge, attitude, and practices of the community in Enderta District regarding rabies disease. A cross-sectional study was conducted using multi-stage random sampling to select kebele and households to be included in the study. The required data was collected through face-to-face interviews using pretested and structured questionnaires from 591 households. The collected data were analyzed using the SPSS Windows version 20. Descriptive statistics techniques and multivariate analysis were used to manage the data. A total of 591 participants, of whom 73.1% were female, responded to the survey, yielding a response rate of 96.3%. Of the total participants, 585 (99%) reported having heard about rabies. Moreover, 6.3% of the study participants reported having experienced rabies in their lifetime. Almost half of the study participants (49.2%) agreed that all dogs are dangerous. Additionally, the majority of the participants (50.4%) agreed that stray dogs are dangerous. Despite this perception, 71.6% of the participants reported that their children actively touch dogs. Finally, the odds of individuals who follow informal reading and writing practices encountering rabies were found to be 60% less likely (AOR-0.4, 95% CI, (0.24-0. 81). The study indicates that education, religion, and media exposure have an impact on attitudes towards rabies, family size is linked to knowledge, and dog bites are linked to practice. The health and agricultural offices in Enderta Woreda should work together to eliminate rabid dogs. Conducting a future cross-sectional study and awareness campaign in schools, churches, and through various media outlets can also increase awareness of rabies.

Keywords: attitude, awareness, community, enderta, knowledge, practice

Introduction

Rabies, a fatal zoonotic disease, is one of the oldest and most feared human diseases since the early period of civilization (Nigus et al., 2015). This viral encephalitis, caused by lyssavirus infection, is invariably fatal once clinical signs develop in animals and humans (Ali et al., 2013). The rabies virus, as a classical zoonotic pathogen, has an extensive host range and can infect all warm-blooded mammals (Alie et al., 2015). It is transmitted through infected saliva via bites or scratches from rabid animals, particularly dogs (Ameh et al., 2014). The disease is characterized by motor irritation, clinical signs of mania and attack complex, salivation, inability to swallow (Edukugho, 2014) and progressive ascending paralysis that begins in the pelvic limbs (Brooks, 1990) and moves forward to the trunk and thoracic limbs. Prompt administration of pre-exposure prophylaxis (PEP) to victims of bites by rabid animals can prevent human

rabies (Brown, 2017). Elimination of infection at the source can be achieved through sustained mass vaccination of reservoir populations (Brusich et al., 2015). In most industrialized countries, rabies has been eliminated from domestic dog populations (CSA, 2015). However, in the majority of developing countries, rabies remains endemic in domestic dog populations and is poorly controlled. Rabies can affect any mammal, and the case fatality rate is always 100% if clinical signs appear (Digafe et al., 2015; EGA et al., 2015). Approximately 15 million people receive post-exposure prophylaxis (PEP) annually, and still, rabies poses a significant public health problem in many countries in Asia (56%) and Africa (44%), where 95% of human deaths occur, and 1.74 million DALYs are lost each year, where the dog plays a principal role as a reservoir and transmitter of the disease to humans (Ehimiyein and Ehimiyein, 2014). In addition to human life losses, rabies has been seriously neglected in Africa (Eke et al., 2015). Estimates of human mortality due to endemic canine rabies in Asia and Africa annually exceed 31,000 and 24,000, respectively (Yimer et al., 2002).

Rabies remains one of the most feared highly endemic infectious diseases in Ethiopia (G/hiwot et al., 2016), and the annual death due to rabies is estimated to be 10,000, making it one of the worst-affected countries in the world (G/hiwot et al., 2016). The presence of a high free-roaming dog population, together with poor management, contributes to the high endemicity of canine rabies in Ethiopia (Guadu et al., 2014). The available information on rabies in Ethiopia is largely based on passive reports to the Ethiopian Health and Nutrition Research Institute zoonosis laboratory, the only rabies diagnostic laboratory in the country (Jayawardene and Gunawardena, 2015). In the Tigray region, there are fragmented activities that are not sufficient to control the disease. These include vaccinations of very few dogs, especially in cities and towns, destruction of stray dogs, and utilization of post-exposure anti-rabies treatments. However, the vaccination coverage of the region, destruction of stray dogs, and awareness creation, which were previously conducted in the region, were very minimal. Previously, little was known about the awareness of the people about the disease, which hindered the effective control measures in the study area. Poor public awareness towards rabies is one of the major obstacles in any prevention and control scheme for the disease, especially in rabies-endemic areas. This might be due to the low level of awareness of people about rabies, zoonotic diseases, and their route of transmission to humans. Therefore, this study aimed to assess the knowledge, attitude, and practices (KAP) of the community about rabies prevention and control in the Enderta district.

Problem Sstatement

Rabies is a highly infectious and potentially fatal viral disease that affects both humans and animals, and it is one of the most neglected diseases in the world. According to statistics, the disease claims the lives of approximately 55,000 people annually, with most fatalities occurring in Africa and Asia. It is worth noting that the majority of those affected are children, particularly young boys who often play with dogs (Fekadu and Baer, 1908). Despite its high health impact in Africa, rabies remains a neglected disease, with governments and other responsible bodies paying little attention to its control and prevention. This is mainly due to the increasing number of free-roaming dogs, particularly in urban and rural areas, which has resulted in a yearly increase in rabies cases (Jemberu et al., 2013). Ethiopia is one of the countries where rabies is prevalent, and the situation is quite dire. For instance, 95% of fatal human rabies cases and 96% of animals examined after being implicated in biting humans

during the period 1990-2000 were due to rabies. Although two dogs were inoculated with the rabies virus strain in Ethiopia and recovered from clinical rabies, during the year 2000, a total of 1540 people received post-exposure anti-rabies treatment in Addis Ababa and its surrounding area, of which 1443 (93.70%) were reported (Jibat et al., 2015). During the same period, exposure to rabies treatment was given to 2219 people in Addis Ababa alone. A total of 322 human deaths were reported due to rabies at the Zoonosis Laboratory of EHNRI, with an annual range of 17 to 54 cases. Among the reported fatal human rabies, 38.82% were children, 45.03% were adults, 13.98% were elderly people, and 2.17% had an unknown age (Yimer et al., 2002). Additionally, 95% of the fatal human rabies cases were due to dog bites. In the Tigray region, an estimated 4000 dog bite cases were reported from 2009-2012, resulting in approximately 40 fatalities. In 2013, 19 (31.66%) suspected cases were reported (Jayawardene and Gunawardena, 2015; Jibat et al., 2015; Guadu et al., 2014; Jima et al., 2014; Jemberu et al., 2013).

With no post-exposure prophylaxis, the fatality rate of rabid dog bites is up to 100%, and about 99% of rabies in humans arises due to bites from free-roaming dogs. Dogs are considered the major biting animals and the most important source of rabies to humans in Ethiopia (Jayawardene and Gunawardena, 2015). The other most important factor that contributes to the dog population density and transmission of rabies, particularly at the country level, is not well studied. Additionally, community awareness of rabies in the study area is lacking, and the knowledge, attitude, and practices (KAP) of the community on rabies incidence and human exposures concerning free-roaming dogs are not yet well-defined. The problem addressed in this study is the lack of comprehensive understanding of community knowledge, attitudes, and practices about rabies prevention and control in Enderta Wereda, Tigray, Northern Ethiopia. This knowledge gap hinders the effective implementation of rabies prevention strategies and puts the community at risk of rabies transmission. The low level of public awareness, poor attention, and lack of resource allocation by the government are major problems that hinder the control of rabies in Ethiopia. There is also a gap in the utilization of modern anti-rabies vaccines. To address these issues, it is necessary to assess the knowledge, attitude, and practices of the community towards rabies in the Enderta district. Such an assessment will improve rabies control and prevention practices and break the cycle of neglect towards rabies.

The significant of the study

It is important for animal handlers and the general public to be aware of the potential for disease transmission from animals, as many diseases common to humans can also be found in animals. While there is no need for panic, it's essential to respect this potential and take preventive measures. It is worth noting that prevention is much easier than treatment. Rabies is one such disease that can be transmitted to humans through contact with infected animals, whether wild or domestic. Unfortunately, many people are unaware of this disease, and public health concerns related to rabies have not always been prioritized. To address this issue, there must be more collaboration and communication in all aspects of healthcare for humans, including public health. Furthermore, new strategies for disseminating multidisciplinary research findings related to rabies need to be developed. This study focuses on the rabies disease in a specific area and aims to gather data on the awareness and practices of the local community towards the disease. By taking into account the knowledge and best

practices of the local community, the study will inform subsequent control and prevention strategies for rabies disease.

Objective of study

This study aims to assess the knowledge, attitudes, and practices of the local community of Enderta Woreda towards rabies disease. Specifically, the objective are: (1) to assess the knowledge of the community towards about disease; (2) to assess attitude of the community about rabies disease; and (3) to assess practices of local communities in relation towards rabies disease.

Materials and Methods

Study area

The study was conducted in the Enderta District from June to November 2016. Enderta is situated in the newly established Southeast Zone of the Tigray region and surrounds the city of Mekelle. The district spans from 39°30'30"E to 47°30'30" and 13°00' to 13°30" N, with a total area of 88,055 hectares and a population of 114,297. There are 28,518 household heads in the district, with 19,832 male-headed and 8,686 female-headed households. The area's agro climatic classification is 1% highland, 96% temperate, and 3% lowland, with a land formation of 35% plain and the remaining 65% consisting of mountains and valleys. The mean annual rainfall ranges from 450 to 500mm, and temperatures range from 10-24°C (36) (Figure 1)

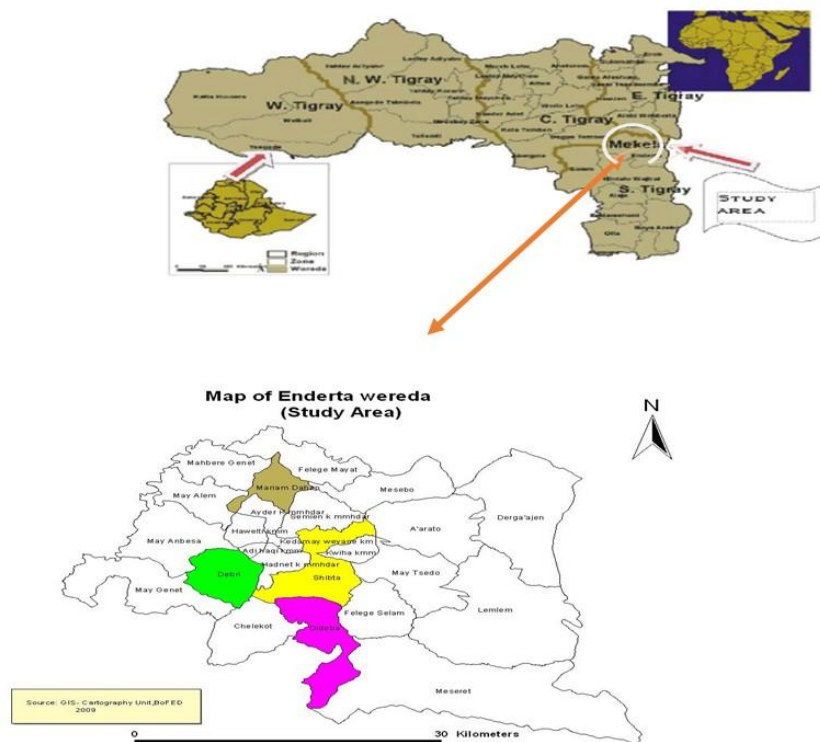


Figure 1. Map of Enderta district as study area.

Study design

In this study, we employed a community-based, cross-sectional quantitative design to evaluate the knowledge, attitudes, and practices (KAP) related to rabies among the residents of Enderta Woreda. This research aimed to assess the level of awareness of the disease, as well as to identify any gaps in knowledge and potential areas for intervention. Through the use of surveys and statistical analysis, we were able to gather valuable insights into the community's understanding of rabies and its transmission, as well as their attitudes towards vaccination and animal control measures. These findings can be used to inform targeted public health campaigns and policies aimed at reducing the incidence of rabies in the region.

Study population

The study was conducted on households located in the Enderta District as the source population. The study encompassed a range of Enderta district communities within four administrative zones, specifically Didiba-Debri, Maryam-Dihan, and Kedamay-Weyane, which were selected at random. A sample of 614 households residing in Enderta District was chosen, accounting for a 10% non-response rate. Of these, 20 respondents were excluded due to incomplete answers. Individual who have at least six months as permanent resident in the study area and those who are willing to participate in the study area were included in this study; while individual who have at least six months as permanent resident in the study area and those who are willing to participate in the study area were included in this study.

Sample size determination and sampling technique

To determine the appropriate sample size, single population proportion was used. The assumptions for this calculation included a 95% confidence interval, a marginal error of 0.5, and an awareness level proportion of 50%. Based on these parameters, the calculated a sample size was 384 using the formula $(n=[Z \alpha/2]^2 P(1-p)/d^2)$, where $Z \alpha/2$ is 1.96, P is 0.5 (due to lack of previous studies in the area), and d is 0.05. To account for a 10% non-responsive rate and design effect by added 1.5 times the initial sample size and arrived at a final required sample size of 614. A sample frame which consists of Kebele lists was used. Then the study participants were selected from their sample frame by simple random sampling method (*Figure 2*).

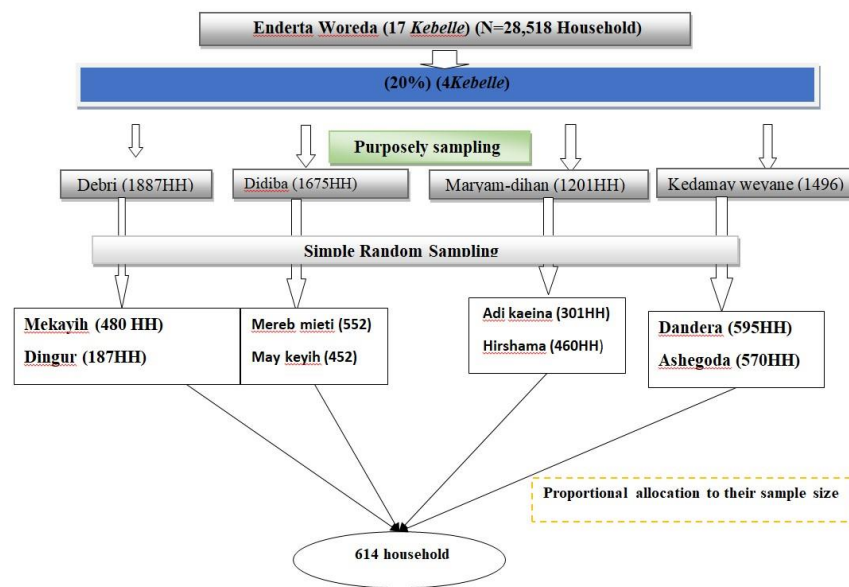


Figure 2. Sampling procedure.

A cross-sectional study was conducted using a multi-stage sampling technique. Four Kebele were selected based on accessibility, time, and previous disease occurrence. The sample sub-districts chosen were Debri, Didiba, Maryam-Dihan, and Kedamay-Weyane. From each Kebele, two Kushet were selected using a simple random sampling method. To collect data, individual household heads were invited to participate in an interview via a lottery system. The number of households included in each administrative area was determined by proportional allocation based on the total number of households in that area (Table 1).

Table 1. Sample frame and sample size.

S.N.	Name of Kushet	Household size	Questionnaire distributed	Questionnaire collected
1	May keyih	480	86	83
2	Dingur	187	34	32
3	Mereb mieti	552	101	99
4	May keyih	452	82	79
5	Adi kaeina	301	54	50
6	Hirshama	460	84	82
7	Dandera (595HH)	595	71	68
8	Ashegoda (570HH)	570	102	100
Total		3597	614	594

Data collection, management and analysis

The data collection process utilized a pre-tested interviewer-administered structured questionnaire. The questionnaire was developed based on the information gathered from existing literature and community practices. Initially prepared in English, it was later translated into Tigrigna-the local language. To administer the questionnaires, ten high-school graduate data collectors and a nurse supervisor were recruited and trained. They went from house to house and spent an average of 30 minutes with each respondent. The process was thorough and detailed, ensuring accurate data collection. Data were

collected using semi-structured questionnaires and interviews to evaluate the degree of respondents (KAP and the generated data was entered into an MS-Excel program (version 2007) and analyzed using SPSS version 20 for analysis. Descriptive statistics (frequencies, mean, SD and percentage) including chi-square for possible explanation of associations between independent variables and KAP scores. The multi-nominal logistic regression was used to analyze possible influencing factors associated with the respondent's knowledge, attitude and practice. A P-value of less than 0.05 was considered to be statistically significant at a 95 % confidence interval.

Operational selection

In knowledge, it is expected to have 7 outcomes (perception on severity of the diseases, how children acquired rabies, treatment and prevention of rabies), continues by attitude with 7 outcomes (perception on severity of the diseases, how children acquired rabies, treatment and prevention of rabies), as well as practice with 14 outcomes (information on practice of first aid application, health service utilization, traditional healer practice and supervision of pets). A questionnaire consisting of ten questions was designed to evaluate respondents' knowledge of rabies, with "Yes" indicating correct answers and "No" indicating incorrect answers. Those who answered at or above the mean were deemed to have a good level of knowledge, while those who scored below the mean were categorized as having poor knowledge. Similarly, a section on attitude towards rabies was included in the questionnaire, which consisted of seven statements that participants were asked to rate on a scale of 1 to 2 (with 1 indicating agreement and 2 indicating disagreement). Those who scored at or above the mean were classified as having a positive attitude, while those who scored below the mean were considered to have a negative attitude. Finally, a section on practice was included in the questionnaire, which consisted of fourteen Yes or No questions. If a participant answered at or above their mean, they were categorized as having good practice, while those who scored below the mean were deemed to have poor practice (Reta et al., 2014).

Data quality assurance and ethical consideration

To ensure high data quality, significant attention was paid to the design of data collection instruments, particularly socio-demographic ones. Prior to conducting the survey, a pre-test of 20 questionnaires (representing 5% of the sampled household population) was conducted. Both the data collector and the principal investigator underwent two-day training. Data collected was thoroughly reviewed and checked for completeness before being entered, with incomplete data being discarded. Ethical clearance was obtained from the Mekelle University College of Health Science prior to conducting the research. Informed verbal consent was obtained from all selected participants, confirming their willingness to participate. Participants who declined to take part in the research were given the right to do so without any negative consequences. The findings of this study were shared with the Mekelle University College of Health Science School of Public Health Department, the Woreda office in the study area, and the Regional Health Office. Further, the study is expected to be submitted to several academic journals once all the necessary requirements have been met.

Results and Discussion

Socio demographic characteristics, knowledge, attitude & practice

The study included 591 participants with a response rate of 96.3%. Of the total participants, 159 (26.8%) were male and 432 (73.1%) were female. In terms of age distribution, 213 (36%) were between the ages of 15-29, 345 (58.4%) were between the ages of 30-45, and the remaining 33 (5.6%) were over the age of 45 (*Table 2*). Out of all the study participants, 585 (99%) had heard about rabies. Thirty-seven (6.3%) of the participants reported having had rabies at some point in their lives. Additionally, 546 of the participants (92.4%) knew that rabies can be prevented. Furthermore, 555 of the respondents (93.9%) exhibited good knowledge of rabies, as shown in *Table 3*. According to a recent study, nearly half of the participants (49.2%) agreed that all dogs pose a threat. The majority of respondents, comprising 50.4% of the study's population, opined that stray dogs are dangerous. Of the total 353 participants, 59.7% demonstrated a favorable attitude towards managing and handling rabies, as indicated in *Table 4*. These findings have significant implications for stakeholders involved in dog ownership, public health, and animal welfare. According to the study, a majority of participants (71.6%) reported that their children engage in physical contact with dogs. Interestingly, 59 respondents shared that they have never come across a rabid dog on the street, while only a small percentage (1.4%) reported ever being bitten by one. Notably, approximately 47.5% of all participants demonstrated good practices when it comes to managing and safeguarding against rabies, as indicated in *Table 5*.

Table 2. *Socio-demographic characteristics of study participants in Nenderta Worede in 2016 (N=591).*

Indicators	Response	Frequency (N)	Percentage (%)
Sex of the respondent	Male	159	26.9
	Female	432	73.1
Age of he respondent	15-29	213	36.0
	30-45	345	58.4
	Greater than 45	33	5.6
Household size	1-3	411	69.5
	4-6	180	30.5
Educational status of the respondent	Cannot read and write	527	89.2
	Informal can read and write	64	10.8
Occupation	Farmer	565	95.6
	Jobless	21	3.6
	Housewife	5	0.8
Martal status	Single	179	30.3
	Married	407	68.9
	Widowed	5	0.8
Religion	Christian	458	77.5
	Muslim	133	22.5
Source of information for rabbies	Mass media	260	44.0
	Not mass media	310	52.5
Dog ownership	Yes	435	73.6
	No	131	22.2
Family exposure to animal bite	Yes	21	3.6
	No	570	96.4

Table 3. *The distribution of knowledge among the local community of the Enderta Woreda with respect to rabbies disease in 2016 (N=591).*

Indicators	Response	Frequency (N)	Percentage (%)
Have you ever had hear about rabies?	Yes	585	99.0

	No	6	1.0
Can people get rabbies?	Yes	37	.3
	No	552	93.4
Can rabbies be prevented?	Yes	546	92.4
	No	45	7.6
Can rabbies be treated?	Yes	35	5.9
	No	556	94.1
If you get rabbies, will you die?	Yes	29	4.9
	No	562	95.1
Do you think that you and your family are at risk of getting rabies?	Yes	327	55.3
	No	264	44.7
Do you think dogs should be allowed to play with children?	Yes	185	31.3
	No	406	68.7
Can you believe that rabies can affect all warm blooded animals including human beings?	Yes	327	55.3
	No	264	44.7
What are the cause of rabies?	Virus	288	44.7
	Starvation	152	25.7
	Anger of God	151	25.5
Which species affected by rabies?	Dog only	234	39.6
	Dog and human	277	46.9
	Human and other	78	13.2
	Domestic animal	2	0.3
What are rabies transmitted through?	Bite only	310	52.5
	Contact with saliva only	241	40.8
	Bite and saliva only with open wound	37	6.3
	Unknown	3	0.5
Animal species transmit to human	Dog only	391	66.2
	Dog and cat	186	31.5
	Other domestic animal	14	2.4
Sig of rabies	Salivation	247	41.8
	Sudden change of behavior	344	58.2
Have you ever get training education program regarding rabies?	Yes	334	56.5
	No	257	43.5
Do you want to get a rabies vaccination?	Yes	497	84.1
	No	94	15.9
Knowledge	Good	555	93.9
	Poor	36	6.1

Table 4. The distribution of attitude of local community of the Enderta Woreda towards rabbies disease in 2016 (N=591).

Vriables	Response	Frequency (N)	Percentage (%)
All dogs are dangerous	Agree	291	49.2
	Don't agree	300	50.8
Stray dog are dangerous	Agree	298	50.4
	Don't agree	293	49.6
Rabies is a problem in your kebele	Agree	146	24.7
	Don't agree	445	75.3
Children are at a greater risk of contracting rabies than adults	Agree	396	67.0
	Don't agree	195	33.0
Rabies can be effectively prevented by vaccinating dogs	Agree	456	77.2
	Don't agree	135	22.8
Rabies can be effectively prevented by euthanizing (killing) stray dogs	Agree	497	84.1
	Don't agree	94	15.9
Rabies can be prevented educating people about the disease.	Agree	471	79.7
	Don't agree	120	20.3
Attitude	Good	353	59.7
	Poor	238	40.3

Table 5. The distribution of pttactive of local community of the Enderta Woreda towards rabbies disease in 2016 (N=591).

Vriables	Response	Frequency (N)	Percentage (%)
Do any of the children touch dog(s) or cat(s)?	Yes	423	71.6
	No	168	29.4
Do the children wash their hands after touching the dog(s) or cat(s)?	Yes	377	63.8
	No	214	36.2
Have you ever meet a rabid dog in the street?	Yes	59	100
	No	532	90.0
Have you been bitten by a dog?	Yes	8	1.4
	No	583	98.6
If yes from above, is it:	Family dog	2	16.7
	Stray dog	10	83.3
Where were you when you got bitten	At home	11	100
If you got bitten by a dog, where should you seek help?	At health institution	2	18.2
	At home	9	81.8
It is good to vaccinated your dog	Yes	518	87.6
	No	73	12.4
Dog handlers should wear protective clothing	Yes	417	70.6
	No	174	29.4
It is good to wash dog bite wounds with soap	Yes	369	62.4
	No	222	37.6
Dog handlers should take human anti-rabies vaccine	Yes	413	69.9
	No	178	30.1
Is that eating roasted meat of an animal died of rabies could be medicine for rabies?	Yes	154	26.1
	No	437	73.9
Is that traditional healer couldn't be a solution of rabies?	Yes	395	66.8
	No	196	33.2
Is that post exposure prophylaxis prevent disease development?	Yes	375	63.5
	No	216	36.5
Practice	Good	281	47.5
	Poor	310	52.5

Assocciated factors

To determine the association, strength, and direction of association between the dependent variable and the various independent variables, binary and multiple logistic regression analyses were conducted. The study found that family size was the only factor associated with knowledge on rabies among the participants. Specifically, households with a family size of 1-3 were 50% less likely to know about rabies compared to those with a family size of 4-6 (AOR=0.5, 95% CI: 0.24-0.92) (Table 6). Based on the study, it was found that the educational level, religion, and mass media consumption were significant factors that influenced the attitude of the respondents towards rabies. After controlling for other variables, it was revealed that educational level was a key factor associated with the attitude of the participants towards rabies. Specifically, individuals who can read and write informally were found to be 60% less likely to encounter rabies (AOR=0.4, 95% CI, (0.24-0.81), as shown in Table 7. In the multivariable analysis exposure to dog bite was significantly associated with practice of rabies among the study participants. Individuals who did not have any dog bites were 70% (AOR=0.3, 95% CI, (0.08-0.77) less likely to protect themselves from dog bites practically compared to those who did have dog bites before (Table 8).

Table 6. Factors associate with knowledge of rabies among study participants in the local community of Enderta Woreda in 2016 (N=614).

Variables	Responses	Knowledge		COR (95% CI)	AOR (95% CI)
		Good N (%)	Poor N (%)		
Family Size	4-6	163 (90.6)	17 (9.4)	Reference	Reference

1-3 392 (95.4) 19 (4.6) 0.5 (0.24-0.92) 0.5 (0.24-0.92)

Table 7. Factors associate with attitude of rabies among study participants in the local community of Enderta Woreda in 2016 (N=614).

Variables	Responses	Knowledge		COR (95% CI)	AOR (95% CI)
		Good N (%)	Poor N (%)		
Educational level	Cannot read and write	304 (57.7)	223 (42.3)	Reference	Reference
	Informal can read and write	49 (76.6)	15 (23.4)	0.4 (0.23-0.76)	0.4 (0.24-0.81)
Religion	Christian	291 (63.5)	167 (36.5)	Reference	Reference
	Muslim	62 (46.6)	71 (53.4)	1.9 *1.35-2.95)	1.7 (1.17-2.62)
Mass media	Mass media	167 (64.0)	94 (36)	Reference	Reference
	Not mass media	170 (54.8)	140 (45.2)	1.4 (1.08-10.08)	3.2 (1.04-9.87)

Table 8. Factors associate with practice of rabies among study participants in the local community of Enderta Woreda in 2016 (N=614).

Variables	Responses	Practice		COR (95% CI)	AOR (95% CI)
		Good N (%)	Poor N (%)		
Educational level	Cannot read and write	304 (57.7)	223 (42.3)	Reference	Reference
	Informal can read and write	49 (76.6)	15 (23.4)	0.5 (0.31-0.68)	0.8 (0.45-1.28)
Exposure to bite	Yes	6 (28.6)	15 (71.4)	Reference	Reference
	No	232 (59.3)	338 (59.3)	0.5 (0.08-0.75)	0.3 (0.08-0.77)

The present study aimed to evaluate the knowledge, attitude, and practices of the local community of Enderta Woreda regarding rabies. The study revealed that educational level was significantly associated with the understanding of rabies. This finding is consistent with a study conducted in Bahirdar, where the level of education had a significant relationship with the knowledge, attitude, and practices (KAP) of rabies (p-value .000) (Bitsu et al., 2016). The similarity between the two studies might be explained by the cultural, religious, and political similarities between Bahirdar and Enderta Woreda. However, this finding was not consistent with a study conducted in Nigeria, where there was no statistically significant association between KAP of rabies and educational level (p-value 0.58) (Lal et al., 2005). This inconsistency might be due to the majority of the Nigerian population not considering dogs as good animals and, therefore, not taking them home due to religious concerns. Another possible reason could be the strong law on eliminating street dogs in Nigeria. The study also revealed that family size was associated with KAP. This finding is consistent with a study conducted in Bahir Dar, where households had a significant relationship with the KAP of rabies (p-value .000) (Bitsu et al., 2016). The similarity between the two studies might be due to the difficulties in rearing and controlling large families, which could result in children playing with dogs on the street. However, a study conducted in Addis Ababa showed that there was no statistically significant association between the KAP of rabies and the household of the respondents (p-value 0.036) (Morters et al., 2013). This might be because families in Addis Ababa have a small number of members compared to those in other areas of the country, making it easier to control their children. The study also showed consistent findings with studies conducted in Arba Minch and Bahir Dar, where there was a significant association between religion, exposure to animal bites, and KAP of rabies. A study conducted in Arba Minch revealed that there was a statistically significant association between the perception of rabies and religion (p-value 0.052) (Ortiz-Prado et al., 2016). On the other hand, the same study conducted in Bahir Dar showed that people who were exposed to animal bites did not have a significant relationship with the KAP of rabies (P-value .08) (Bitsu et al., 2016). The

consistency between these studies could be explained by the socio-economic and political similarities in a given country.

The strength of this study was utilized primary data from study subjects through interview and was also used daily checked up filled questioners. It is assumed that respondents may have been somehow informed about rabies before they were interviewed. Hence, this may resulted in some biases in the responses of the study participants and may not reflect the level of true KAP of rabies. This Study has also encountered with certain challenges in the course of collecting data from the study areas. The first challenge was the difficulty of getting the randomly selected households on schedule in the course of collecting primary data from households. Second, several questionnaires had to be dropped either because of incomplete information or data recording errors on the part of enumerators.

Conclusion

In summary, the study found that a person educational level, religion, and exposure to mass media can influence their attitude towards rabies. Additionally, family size was associated with knowledge, while exposure to dog bites was associated with practice. To prevent zoonotic diseases from spreading through dogs and other pets, it's important for veterinarians, public health workers, schools, and media outlets to raise awareness. Collaborative efforts that involve all stakeholders are needed to promote the importance of proper dog management and vaccination, as well as the risks of contracting zoonotic diseases. The study suggests that to effectively eliminate the issue of rabid dogs, the Enderta Woreda health office should collaborate with the Woreda Agricultural office and implement a new system. This system should aim to control the population of rabid dogs in the area. Furthermore, to prevent the spread of rabies, it is recommended to introduce health education programs at the community level. This education should focus on raising awareness and promoting safe practices, such as avoiding contact with stray dogs and seeking medical attention in case of a bite.

The study also highlights that households with larger families are more susceptible to rabid dog attacks. This is because parents may have less control over their children, who may not be aware of the dangers of approaching stray dogs. To ensure safety within these households, it is suggested that parents teach their children how to identify and evade rabid dogs. This can be done through education programs or by involving children in activities that promote awareness and safe practices. In the future, it is recommended that another cross-sectional study be conducted to increase awareness and knowledge of rabies. This study can help in identifying areas that require improvement and in developing more effective strategies to address the issue. Additionally, it is suggested to carry out awareness campaigns in schools, churches, and through various media outlets, including radio and TV, to sensitize the community to the dangers of rabies. These campaigns can help in promoting safe practices and encouraging people to seek medical attention in case of a bite.

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Conflict of interest

The authors confirm that there is no conflict of interest involve with any parties in this research study.

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