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A Study on Assessment of Community Knowledge, Attitudes and Practices Regarding Rabies in Ambo Town, Oromia Regional State, Ethiopia

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Abstract

Rabies is a severe zoonotic disease with significant public and veterinary health consequences worldwide, including in Ethiopia. However, the study area's information on community awareness and prevention remains limited. A cross-sectional study using a semi-structured questionnaire assessed knowledge, attitudes, and practices (KAP) related to rabies among Ambo town residents to bridge this gap. 384 randomly selected participants from six kebeles provided insights into their understanding and response to rabies. About 32.3% of respondents have awareness of zoonotic diseases with 82% recognizing rabies as a zoonotic disease. However, misconceptions persisted, including the belief that individuals bitten by rabid dogs could recover without significant effects (64.1%). While 93.8% acknowledged that rabies could be prevented through vaccination, only 25.8% were aware of post-exposure prophylaxis, and only 19.5% vaccinated their dogs. Rabies transmission through bites was widely recognized (75.8%), and a large proportion identified clinical signs in dogs, such as excessive salivation (52.9%). Regarding practices, 74.2% sought healthcare after a dog bite, but significant gaps were found in stray dog control and dog vaccination practices. Explanatory variables, such as gender ($P < 0.041$), age ($P < 0.000$), occupation ($P < 0.000$), educational level ($P < 0.000$), and pet ownership ($P < 0.001$), showed a statistically significant difference from important KAP-related questions. The aforementioned results underscore the necessity of focused educational initiatives to dispel misunderstandings, especially concerning topics like dog vaccination, stray dog control, and post-exposure prophylaxis.

Keywords: Attitude, Knowledge, Prevention, Rabies, Zoonotic

Introduction:

Rabies is the deadliest viral zoonosis, with bats serving as primary reservoirs. It causes fatal encephalomyelitis in humans and various terrestrial mammals, including pets, livestock, stray animals, and wildlife (Pal et al., 2024). The disease remains a significant global public health concern, claiming over 55,000 lives annually, with more than 95% of human deaths occurring in Africa and Asia. Additionally, an estimated 3 million people in Asia are bitten by rabid animals each year (Pal, 2017).

In Ethiopia, rabies is still a serious public health concern (Deressa et al., 2015). Researchers initially discovered the illness in the nation in 1903, and it still poses a major risk to both people and animals (Gebrehiwot et al., 2016). Due in significant part to a huge number of stray dogs and other contributing variables, 43% of the rabies-related human deaths in 1998 occurred in Ethiopia. Ethiopia is one of the most rabies-affected countries in the world, with an estimated 10,000 rabies deaths every year (Deressa et al., 2010). Rabies is a neurotropic disease caused by Lyssavirus, which belongs to the genus Lyssavirus in the family Rhabdoviridae of the order Mononegavirales. It is transmissible to all mammals. The WHO has identified 20 neglected tropical diseases. Rabies is nearly 100% lethal in humans and animals and kills 59,000 people annually (Rebuma and Mehdipour, 2024; WHO, 2018).

Rabies in mammals is fatal due to its impact on the nervous system. It is caused by a neurotropic, negative-sense, non-segmented, single-stranded RNA virus (Madhusudana et al., 2012). While rabies is a preventable viral zoonosis through vaccination, it remains a major public health concern in developing nations. Each year, approximately 15 million people receive post-exposure prophylaxis (PEP) for rabies (Dietzschold and Koprowski, 2005). The disease causes significant mortality in Asia and Africa, particularly among individuals living in rural areas of these regions (WHO, 2015). The global economic burden of rabies, including the cost of post-exposure prophylaxis (PEP), livestock losses, and other related expenses, is estimated at 8.6 billion USD annually (WHO, 2023).

Globally, an estimated 29 million individuals receive post-exposure prophylaxis (PEP) for rabies each year,

while over 59,000 people die from the disease (Hampson et al., 2015), primarily due to inadequate rabies control measures. Human rabies can be prevented with the prompt administration of PEP following exposure to rabid animals (Hemachudha et al., 2002). The disease affects a range of environments, from rural to urban areas, disproportionately impacting marginalized communities in low-income countries and threatening food security and livelihoods (Pal et al., 2024). However, individuals in these countries, particularly the impoverished, may not have access to this life-saving treatment due to the high cost, limited availability of PEP, or lack of awareness, which prevents them from seeking hospital care (Knobel et al., 2005).

In order to effectively increase awareness, the community's current knowledge gaps must be identified and filled. Preventing human rabies requires raising public awareness of rabies, including dog behavior, first aid for dog bites, and ways to avoid dog bites (Nilsson, 2014). Developing measures to manage rabies requires understanding how the community views the disease, including its sources, transmission, symptoms, treatment, and possible solutions. Along with encouraging responsible pet ownership, routine veterinarian care and vaccinations, and continuous professional development for healthcare professionals, it also aids in evaluating the effectiveness of upcoming therapies (Chernet and Nejash, 2017).

Rabies is recognized as a neglected tropical disease (NTD) that requires considerable attention, particularly in developing nations like Ethiopia, where its impact is significant. This issue is further intensified by substantial losses in the livestock industry; nonetheless, the focus on preventing rabies remains inadequate. Knowledge, attitudes, and practices surveys conducted in the country reveal ongoing deficiencies in disease control and prevention measures. Most human deaths from rabies occur in Asian and African countries, with Ethiopia being one of the hardest hit, largely due to domestic dogs being the primary carriers of human infections (Hampson et al., 2015).

Although rabies is one of the oldest diseases, it is often perceived as having low public awareness regarding transmission. The challenges in preventing this disease in both humans and animals persist. In addition, there is a lack of understanding of how human attitudes and behaviors influence rabies prevention efforts (Mapatse et al., 2022).The objective of this study was to assess the community's knowledge, attitudes, and practices regarding rabies prevention and control in Ambo Town, Oromia Regional State, Ethiopia.

Materials and Methods:

This study was conducted in Ambo Town, situated in the West Shewa zone of Oromia, focusing on selected kebeles such as Yai Geda, Hora Ayetu, Torban Kutaye, Awaro Kora, Kisose Odo Liban and Senkele Faris from July 2024 to January 2025. The study area situated 2185 meters above from sea levels and geographically co-ordinates are approximately between 8°56'30"N and 8°59'30"N latitude and between 37°47'30"E and 37°55'15"E longitude. The region's average yearly temperature is around 18.8°C, with maximum and minimum temperature recorded at 26°C and 10.76°C, respectively. The Ambo district is home to about 112,236 cattle, 24,966 sheep, and 16,399 goats (AAO, 2024). A mapping of the study area can be found in Figure 1.

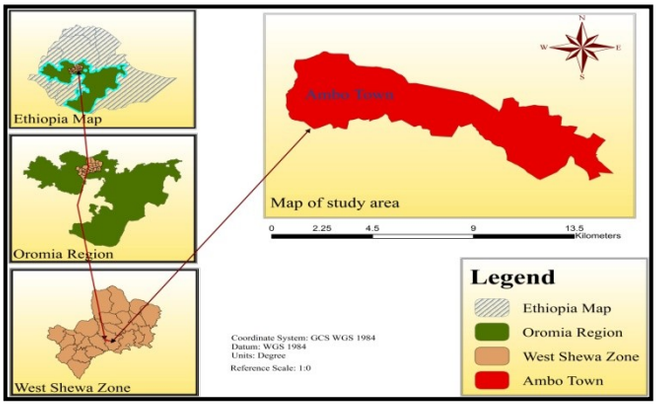

Figure 1: Map of Ethiopia shows the study area, (*Source:* Arc GIS, Version 15)

In this study, kebeles were chosen using a purposive sampling method based on the disease burden. The respondents were selected from the general population through a simple random sampling technique. To estimate the required sample size, knowledge, attitude, and practice levels were considered, with percentages of 46.1%, 56.5%, and 63.5%, respectively, along with a 5% margin of error and a 95% confidence level (Dabuma et al., 2017). Consequently, the calculated sample sizes for knowledge, attitude, and practice were 382, 384, and 356, respectively. The highest sample size of 384 was adopted for this study. Respondents were drawn from existing households in the selected peasant associations, using a proportional selection method based on the total number of households. The study participants consisted of community members from Ambo Town, specifically adults aged 18 years and older, as well as veterinary workers, local leaders, elder males, and farmers who had resided in the districts for over one year. This criterion ensured comprehensive information was gathered prior to the survey's initiation. In total, 384 respondents were involved in the study, focusing on evaluating their knowledge, attitudes, and practices related to both diseases.

A semi-structured questionnaire was utilized for data collection from community respondents in the survey areas. After collection of data put into an Excel spreadsheet then went through a thorough process of checking, filtering and scoring before use to SPSS version 26 for descriptive analysis like – percentage, frequency distribution, Chi-square test and p-value etc. A significance level of P-value < 0.05 was deemed statistically significant. Furthermore, KAP scores were classified, with scores below 50% categorized as "poor" and those above 50% as "good," thereby providing a clear framework for understanding the community's engagement with rabies-related issues.

Results and Discussion:

Socio-demographic characteristics:

The socio-demographic characteristics of the study participants in Ambo town indicated that a significant majority of the respondents were male, comprising 60.9% of the total population. In contrast, female participants accounted for 39.1%. Regarding age distribution, most of the respondents fell into the 31-50 age group (39.9%), followed by 18-30 (29.4%), 51-60 (25.8%), and those older than 61 years (4.9%). Equal representation was observed across the six kebeles surveyed; - Awaro Kora, Hora Ayetu, Kisose Odo Liban, Senkele Faris, Torban Kutaye, and Yai Geda with each contributing 16.6% of the respondents.

In terms of marital status, 79.4% of participants were married, while 20.6% were single. Education levels varied significantly, with a large proportion (40.6%) being illiterate, 29.4% having completed secondary school, 20% having primary education, and only 9.9% having attended college or university. This indicates limited access to higher education among the participants. Occupationally, the majority of respondents (51.3%) identified as farmer, followed by un-employed (21.1%), self-employed individuals (20.3%), government employees (4.7%), and veterinarians (2.6%). Lastly, most participants (70.5%) reported living with pet animals, while 29.5% did not, highlighting a potential link between pet ownership and awareness of zoonotic diseases. The socio-demographic information of the participants in Ambo town, as presented in Table 1, includes various characteristics that provide insights into the population involved in the study.

Knowledge of respondents toward rabies in Ambo town:

Table- 2 presents respondents' general knowledge about rabies in Ambo town, showing variations in awareness, understanding of causes, transmission, prevention, and effects. Among respondents, 32.3% were aware of zoonotic diseases, and 82% recognized heard rabies as a zoonotic disease. Regarding sources of information, animal health workers were the primary source (30.7%). Most respondents identified rabies as a disease (51.3%) or a change in behavior (44.0%), and dogs were recognized as the primary cause of rabies (60.9%). Similarly, dogs (43.5%) and humans alongside domestic animals (36.7%) were identified as affected species. A majority (87.2%) knew rabies is fatal, and 52.6% recognized vaccination as a prevention method. This finding is consistent with the observation of Bahiru et al. (2022), who reported that 76.8 per cent of participants did not own dogs but still had a good level of awareness about rabies. These high levels of awareness are likely due to the population's greater access to various communication and education channels, including radio, television, mobile phones, and educational institutions.

While 75.8% understood the modes of rabies transmission, and bites was the most identified route (54.9%). Regarding symptoms, 80.7% could describe rabies signs in dogs. All age groups were identified as most affected (71.9%); misconceptions were noted, with 64.1% believing a person bitten by a rabid dog might recover without serious effects. These results demonstrate gaps in knowledge and the need for targeted educational interventions, particularly in clarifying misconceptions about rabies prevention, transmission, and outcomes.

However, the present findings were compared with the findings of Bihon et al., (2020) conducted a survey in North East Ethiopia and they were found 82 per cent of the interviewees had heard about rabies from various sources. Our findings are in line with a survey conducted in and around South Gondar, North West Ethiopia, among various community members. According to Ejeta and Pal, (2024) reported near about 78 per cent respondents informed about rabies in Meta Robi, Oromia Region, Central Ethiopia, But another study was conducted at Mersa town by Gebeyaw et al., (2020) was found that the majority of participants (83.33%) had never heard of rabies, which contrasts with the findings of the current study. Regarding sources of information, 62 per cent of participants reported learning about rabies from informal sources, such as family and neighbours, 1 per cent from formal media (including media outlets and animal health professionals, and 37% from both sources. The lack of rabies education and media coverage in the study area likely accounts for this discrepancy.

Community's knowledge indicator statements on transmission and clinical sign of rabies:

The community's knowledge of study participants regarding the transmission and clinical signs of rabies is summarized in Table 3. Most respondents (84.4%) acknowledged that rabies could be transmitted from a rabid animal to a healthy animal. Similarly, a large

majority (95.3%) recognized transmission from rabid animals to humans, but when asked about the mode of transmission, 71.9% identified biting as the primary route, followed by saliva contact with open wounds (22.7%), scratches (2.9%), and inhalation (2.6%).

Regarding clinical signs of rabies in dogs, 52.9% reported excessive salivation, 23.7% noted sudden changes in behavior, and 12.8% mentioned cessation of eating and drinking. Fewer respondents identified hydrophobia (9.1%) or hallucinations (1.6%). These findings suggest that while awareness of rabies transmission is high, there is variability in understanding the modes of transmission and clinical signs, indicating the need for targeted education to address these gaps.

Attitude of the participants indicating statements on prevention and control of rabies:

The participants' knowledge about rabies prevention and control is presented in Table-4. Only 25.8% of respondents in the study were aware of post-exposure prophylaxis for rabies, and the majority (93.8%) recognized that vaccination could prevent rabies, though this knowledge. Regarding the vaccination interval for pets, only 27.9% of participants were aware of the schedule, and the importance of rabies vaccination was recognized by 93.8% of respondents.

Additionally, 93.5% of respondents expressed a willingness to vaccinate their pets. While these findings demonstrate strong awareness of the value and effectiveness of rabies vaccination, they also highlight significant gaps in knowledge regarding post-exposure prophylaxis and recommended vaccination schedules. This underscores the importance of strengthening education and awareness campaigns that emphasize the timely administration of vaccines and their critical role in preventing and managing rabies.

Practices of the participants towards prevention and control of Rabies:

The participants' practices for rabies prevention and control, highlighting both areas that needed improvement and areas that were positive is shown in Table 5. Most respondents (89.1%) owned dogs primarily for guarding, and the majority of families (69.8%) permitted contact with dogs or cats, while only 8.6% reported a family history of rabies infection. Encouragingly, 95.6% of participants reported washing their hands after touching pets and 27.6% had been bitten by a dog. Regarding immediate actions after a rabid animal bite, 74.2% sought health institutions, 11.2% washed with soap and water, 10.9% used traditional healers, and 3.6% did nothing. This finding contrasts with studies conducted by Alie et al. (2015) in and around Addis Ababa and by Matibag et al. (2007) in Sri Lanka, where reporting practices were less favorable. Similarly, 65.4% of the respondents had negative attitudes toward reporting dog bites to authorities. In the study majority (84.4%) thought that killing stray dogs suspected of having rabies was a good way to control the disease, while a minority (15.6%) disagreed. While 65.4% would inform authorities after a dog bite our findings concour with the observations of Gebeyaw and Teshome (2016) in Dessie City, but diverge with the study of Tandon et al. (2017) in Jammu, India, which found that residents were proactive in informing authorities about stray dogs and dog bite cases.

Notably, only 19.5% vaccinated their dogs or had vaccination certificates, and both practices. Regarding dog care, 49.2% allowed free movement, 34.1% specified other care methods, and 16.7% kept dogs indoors. Lastly, 99.5% recognized dog registration and licensing as helpful for rabies control. These findings highlight positive practices, such as seeking healthcare after exposure and hand hygiene, but also underline significant gaps, particularly in dog vaccination and stray dog control measures, emphasizing the need for improved public awareness and veterinary services. Dog vaccination practices were still low in the study area. Despite better community awareness, respondents identified key challenges, including lack of access to vaccines, unavailability of veterinary clinics, and limited vaccine supply. Among the study participants, only 75 (19.5%) of household heads reported vaccinating their dogs. This proportion was higher than the 4.8% reported in Jimma by Kabeta et al. (2015) but lower than the 42% observed in Gondar by Digafe et al. (2015) and the 35.8% in Dessie towns by Gebeyaw and Teshome, (2016). These variations may be attributed to differences in vaccine availability, the timing of the studies, and local community practices regarding information sharing.

Factors associated with community KAP scores towards rabies:

Table 6 presents the factors associated with participants' knowledge scores on rabies. More than half of the respondents exhibited poor knowledge, attitude, and practice (KAP) levels. KAP scores varied significantly by age, with older participants (51–60 and >61 years) displaying notably poorer KAP levels ($p = 0.000$). Younger respondents, particularly those aged 31–50, tended to have better KAP levels. There was no significant difference in KAP scores between males and females ($p = 0.401$). Marital status showed no significant correlation with KAP levels ($p = 0.755$). Education level had a strong influence on KAP, with those having a college or university education showing the highest proportion of good KAP ($p = 0.000$). Occupation also significantly impacted KAP, with government employees and veterinarians demonstrating the highest good KAP levels, while farmers had the lowest ($p = 0.000$).

Participants who lived with pet animals were more likely to have poor KAP levels compared to those without pets (p = 0.000).

Factors associated with attitude scores of participants towards rabies:

The study examined factors influencing participants' attitudes towards rabies, revealing several significant associations (Table-7). Age showed a notable impact on attitudes, with individuals aged 31–50 exhibiting the most positive attitudes, while those aged 18–30 and over 61 had higher proportions of negative attitudes ($\chi 2$=23.936, p=0.000). Education level was also strongly associated with attitudes ($\chi 2$=69.613, p=0.000), as participants with college or university education displayed exclusively positive attitudes, whereas illiterate individuals were predominantly negative. Occupation played a significant role as well ($\chi 2$=48.782, p=0.000), with veterinarians and government employees showing only positive attitudes, while farmers had the highest proportion of negative attitudes.

Conversely, gender and marital status were not significantly associated with attitude scores, with p-values of 0.435 and 0.397, respectively. Similarly, living with or without pets did not significantly influence participants' attitudes ($\chi 2$=2.399, p=0.121). Overall, age, education, and occupation emerged as critical factors shaping attitudes towards rabies, while gender, marital status, and pet ownership were less impactful.

The results of the current study indicated that independent variables such as age, educational status, occupation, and living with pet animals were statistically significant (P < 0.05) factors associated with respondents' knowledge of rabies. This finding aligns with studies conducted in other parts of Ethiopia, including South Gondar by Alie et al. (2015) and Bahir Dar by Guadu et al. (2014).

Factors associated with practices scores of participants towards rabies:

The analysis of factors associated with participants' practices towards rabies revealed significant influences of age, education, and occupation (Table-8). Age was a critical factor (2=23.936, p=0.000), with individuals aged 31–50 exhibiting the highest proportion of good practices, while younger (18–30 years) and older participants (>60 years) were more likely to demonstrate poor practices. Education showed a strong association with practices ($\chi 2$=69.613, p=0.000); participants with a college or university education displayed exclusively good practices, whereas those who were illiterate exhibited predominantly poor practices. Similarly, occupation was significantly linked to practices ($\chi 2$=48.782, p=0.000), as veterinarians and government employees demonstrated only good practices, while farmers had the highest proportion of poor practices.

There was no discernible correlation between practice scores and gender or married status (p = 0.435 and p = 0.397, respectively). Furthermore, rabies-related behaviors were not substantially impacted by pet ownership (χ^2 = 2.399, p = 0.121). These results demonstrate that age, education, and occupation had a significant role in determining rabies-related behaviors, whereas gender, marital status, and pet ownership had no bearing.

Table 1: Socio-demographic information of the study participants in Ambo town of Ethiopia

Variables	Categories	Frequency	Percentage (%)
Gender	Male	234	60.9
	Female	150	39.1
Age	18-30	113	29.4
	31-50	153	39.9
	51-60	99	25.8
	>61	19	4.9
Kebele	Awaro Kora	64	16.6
	Hora Ayetu	64	16.6
	Kisose Odo Liban	64	16.6
	Senkele Faris	64	16.6
	Torban Kutaye	64	16.6
	Yai Geda	64	16.6
Marital status	Single	79	20.6
	Married	305	79.4
Education	Illiterate	156	40.6
	Primary School	77	20
	Secondary School	113	29.4
	College/University	38	9.9

Occupation	Un-employed	81	21.1
	Government employer	18	4.7
	Farmer	197	51.3
	Self-employment	78	20.3
	Veterinarian	10	2.6
Live with pet animals	Live with a pet	271	70.5
	Live without pet	113	29.5

Table 2: General knowledge of respondents about rabies in Ambo town, Ethiopia

Statements	Categories	Frequency	Percentage (%)
Do you know zoonotic disease?	Yes	124	32.3
	No	260	67.7
Have you heard about rabies?	Yes	315	82
	No	69	18
Do you get awareness of rabies?	Yes	183	47.7
	No	201	52.3
Where do you get information about rabies?	Animal health worker	118	30.7
	Health extension worker	20	5.2
	Health profession	38	9.9
	No response	198	51.6
	TV/Radio	10	2.6
What is rabies?	Change in behavior	169	44.0
	Disease	197	51.3
	Do not know	18	4.7
Species affected by rabies	Dog	167	43.5
	dog and human	141	36.7
	human and other domestic animals	76	19.8
Rabies is fatal	I don't know	29	7.6
	No	20	5.2
	Yes	335	87.2
Rabies can be prevented by vaccination?	I don't know	54	14.1
	No	128	33.3
	Yes	202	52.6
Do you know mode of transmission of rabies?	No	93	24.2
	Yes	291	75.8
Which one are the most transmission routes of rabies?	Bite and saliva	87	22.7
	bite only	211	54.9
	contact with saliva only	13	3.4

	not response	73	19.0
Animal species transmit rabies to human?	dog and cat	65	16.9
	dog only	286	74.5
	Other domestic animals	33	8.6
Could you describe symptoms of rabies in dogs?	No	74	19.3
	Yes	310	80.7
Which age group is mostly affected?	Adult	31	8.1
	All age group	276	71.9
	Female	27	7.0
	Male	9	2.3
	Young	41	10.7
Fate of a person or animal bitten by rabid dog?	Carrier	37	9.6
	Die	56	14.6
	I don't know	45	11.7
	Nothing happen/cure	246	64.1

Table 3: Community's knowledge indicator variables on transmission and clinical sign of rabies

Statements	Categories	Frequency	Percentage (%)
Transmitted from rabid animal to healthy animal?	Yes	324	84.4
	No	60	15.6
Transmitted from rabid animal to human?	Yes	366	95.3
	No	18	4.7
Mode of transmission from rabid animal to healthy animals/human?	Biting	276	71.9
	Inhalation	10	2.6
	Scratch	11	2.9
	Saliva contact with open wound	87	22.7
Clinical signs of rabid dog?	Salivation	203	52.9
	Sudden change of behavior	91	23.7
	Stop eating and drinking	49	12.8
	Hydrophobia	35	9.1
	Hallucination	6	1.6

Table 4: Attitude of the participants for prevention and control of Rabies

Statements	Categories	Frequency	Percentage (%)
Do you know about post exposure prophylaxis?	Yes	99	25.8
	No	285	74.2
Can we prevent rabies by vaccination?	Yes	360	93.8
	No	24	6.2
Do you know the vaccination interval for pets?	Yes	107	27.9
	No	277	72.1
Do you think rabies vaccine is important?	Yes	360	93.8
	No	24	6.2
Are you willing to vaccinate your pet?	Yes	359	93.5
	No	25	6.5

Table 5: Practices of the participants towards prevention and control of rabies

Statements	Categories	Frequency	Percentage (%)
Purpose of owning dog?	Guarding	342	89.1
	Guarding and hunting	42	10.9
Do any of your family members touch your dog or cat?	Yes	268	69.8
	No	116	30.2
Family history of rabies infection?	Yes	33	8.6
	No	351	91.4
Do you wash your hands after touching the dog or cat?	Yes	367	95.6
	No	17	4.4
Have you ever been bitten by a dog?	Yes	106	27.6
	No	278	72.4
Immediate action taken after bite by rabid animal?	Washing with soap and water	43	11.2
	Use traditional healer	42	10.9
	Visit health institution	285	74.2
	Do nothing	14	3.6
What measures do you take to control stray dogs?	Killing	324	84.4
	Aware of the owner	60	15.6
Would you inform the authorities if you bite by a dog?	Yes	251	65.4
	No	133	34.6
Did you vaccinate your dog?	Yes	75	19.5
	No	309	80.5
Can you show the dog's vaccination certificate?	Yes	75	19.5
	No	309	80.5
Where do you care for your dog?	Free to move	189	49.2
	Kept indoors	64	16.7
	Other specified	131	34.1
Does dog registration and licensing help control rabies?	Yes	382	99.5
	No	2	0.5

Table 6: Factors associated with knowledge scores of participants towards rabies

Variables	Category's	Poor knowledge	Good knowledge	χ2	p-Value
Age	18-30	72	41	49.675	0.000
	31-50	85	68		
	51-60	93	6		
	>61	18	1		
Gender	Male	167	49	0.706	0.401
	Female	101	67		
Marital status	Single	54	25	0.097	0.755
	Married	214	91		
Education	College/University	0	38	164.456	0.000
	Illiterate	114	42		
	Primary School	41	36		
	Secondary School	72	41		
Occupation	Un-employed	48	33	111.284	0.000
	Government employer	0	18		
	Farmer	176	21		
	Self-employment	44	34		
	Veterinarian	0	10		
Live with pet animals	Live with a pet	205	66	14.970	0.000
	Live without pet	63	50		

Table 7: Factors associated with attitude scores of participants towards rabies

Variables	Category's	Positive attitude	Negative attitude	χ2	p-Value
Age	18-30	46	67	23.936	0.000
	31-50	82	71		
	51-60	26	73		
	>61	3	16		
Gender	Male	92	142	0.610	0.435
	Female	65	85		
Marital status	Single	29	50	0.718	0.397
	Married	128	177		
Education	College/University	38	0	69.613	0.000
	Illiterate	42	114		
	Primary School	36	41		
	Secondary School	41	72		
Occupation	Un-employed	34	47	48.782	0.000
	Government employer	18	0		
	Farmer	61	136		
	Self-employment	34	44		
	Veterinarian	10	0		
Live with pet animals	Live with a pet	104	167	2.399	0.121
	Live without pet	53	60		

Table 8: Factors associated with practices scores of participants towards rabies

Variables	Category's	Poor practice	Good practice	χ2	p-Value
Age	18-30	67	46	23.936	0.000
	31-50	71	82		
	51-60	73	16		
	>61	16	3		
Gender	Male	142	92	0.610	0.435
	Female	85	65		
Marital status	Single	50	29	0.718	0.397
	Married	177	128		
Education	College/University	0	38	69.613	0.000
	Illiterate	114	42		
	Primary School	41	36		
	Secondary School	72	41		
Occupation	Un-employed	47	34	48.782	0.000
	Government employer	0	18		
	Farmer	136	61		
	Self-employment	44	34		
	Veterinarian	0	10		
Live with pet animals	Live with a pet	167	104	2.399	0.121
	Live without pet	60	53		

Conclusions:

The study highlights significant gaps in knowledge, attitudes, and practices (KAP) regarding rabies among residents of Ambo town. While there is general awareness of rabies as a zoonotic disease, misconceptions persist, particularly about the severity of rabies following a dog bite and the critical importance of post-exposure prophylaxis. Although participants recognize the importance of vaccination in preventing rabies, only a small proportion are familiar with the necessary procedures or take the required actions to protect themselves and their animals. Furthermore, issues such as stray dog management and the low dog vaccination rate continue to present critical challenges. These findings suggest that while awareness of rabies exists, the implementation of effective control measures and preventive behaviors remains insufficient.

Based on the above conclusion, the following recommendations are recorded:

- There is an urgent need for comprehensive public health education campaigns to address misconceptions, particularly about the severity of rabies after a dog bite, the necessity of post-exposure prophylaxis, and the importance of timely medical intervention.
- The concerned, in particular, veterinarians and health professionals, should be aware of the community impact of the disease, so that seeking immediate post-exposure treatment on time if exposed unknowingly culminates in necessary death.
- Outreach education is needed to ensure accurate knowledge and to improve the attitude and practice of the community in this area.

Conflict of Interest:

Nil

Author's Contribution:

All authors made significant contribution for the preparation of the manuscript.

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References:

AAO. Ambo Agricultural office livestock statistical data report. Ethiopia, 2024.

Alie A, Assefa A, Derso S, Ayele B. Assessment of knowledge, attitude and practice on rabies in and around Debretabor, South Gondar, Northwest Ethiopia. International Journal of Basic and Applied Virology. 2015; 4 (1):28-34.

Bahiru A, Molla W, Yizengaw L, Mekonnen SA, Jemberu WT. Knowledge, attitude and practice related to rabies among residents of Amhara region, Ethiopia. Heliyon. 2022; 8(11): e11366.

Bihon A, Meresa D, Tesfaw A. Rabies: knowledge, attitude and practices in and around South Gondar, North West Ethiopia. Diseases. 2020; 28(1):1-13.

Chernet B, Nejash A. Review of rabies preventions and control. Journal of Medicine, International Journal of Public Health Science. 2017; 6: 343-350. DOI:10.11591/ijphs.v6i4.10781

Dabuma T, Kabeta T, Mengist HM. Assessment of basic knowledge, attitude and practice of community on rabies and retrospective survey in and around ambo town, west Shoa zone of Ethiopia. Journal of Medical Microbiology and Diagnosis. 2017; 6 (4). https://doi.org/10.4172/2161-0703.1000263

Deressa A, Ali A, Beyene M, Selassie BN, Yimer E, Hussen K. (2010) The status of rabies in Ethiopia: a retrospective record review. Ethiopian Journal of Health and Development. 2010; 24:127-32.

Deressa A, Pal M, Kobayashi Y, Kassa T. Molecular epidemiology of rabies virus isolates in Ethiopia. International Journal of Livestock Research. 2015; 5(10), 21-33.

Dietzschold B, Koprowski H. Screening of organ and tissue donors for rabies. The Lancet 2005; 365 (9467): 1305.

Digafe RT, Kifelew LG, Mechesso AF. Knowledge, attitudes and practices towards rabies: questionnaire survey in rural household heads of Gondar Zuria District, Ethiopia. BMC Research Notes. 2015; 8(1): 1-7.

Ejeta I, Pal M. Assessment of knowledge, attitude and practices of community towards rabies in Meta Robi district, oromia region, central Ethiopia. Journal of Biology and Medicine: Open Access. 2024; 4 (1): 1-15.

Gebeyaw J, Kidanemariam F, Fesseha H. Assessment of community knowledge, attitude and practice towards rabies in Mersa town, Amhara Regional State, Ethiopia. International Journal of Research Studies in Microbiology and Biotechnology. 2020; 6 (2): 6-13.

Gebeyaw S, Teshome D. Study on community knowledge, attitude, and practice of rabies in and around Dessie City. Australian Journal of Veterinary Science and Animal Husbandry. 2016; 3(1): 10-20.

Gebrehiwot TT, Sime AG, Deresa B, Tafese W, Hajito KW, Gemeda DH. Community health seeking behavior for suspected human and animal rabies cases, Gomma District, Southwest Ethiopia. PloS one. 2016; 11(3): e0149363.

Guadu T, Shite A, Chanie M, Bogale B, Fentahun T. Assessment of knowledge, attitude and practices about rabies and associated factors: in the case of Bahir Dar town. Global Veterinaria. 2014; 13 (3): 348-54.

Hampson K, Coudeville L, Lembo T, Sambo M, Kieffer A, Attlan M, Barrat J, Blanton JD, Briggs DJ, Cleaveland S, Costa P. Estimating the global burden of endemic canine rabies. PLoS neglected tropical diseases. 2015; 9(4): e0003709.

Hemachudha T, Laothamatas J, Rupprecht CE. Human rabies: a disease of complex neuropathogenetic mechanisms and diagnostic challenges. The Lancet Neurology. 2002; 1(2): 101-9.

Kabeta T, Deresa B, Tigre W, Ward MP, Mor SM. Knowledge, attitudes and practices of animal bite victims attending an anti-rabies health center in Jimma Town, Ethiopia. PLoS Neglected Tropical Diseases.2015; 9(6): e0003867.

Knobel DL, Cleaveland S, Coleman PG, Fèvre EM, Meltzer MI, Miranda ME, Shaw A, Zinsstag J, Meslin FX. Re-evaluating the burden of rabies in Africa and Asia. Bulletin of the World health Organization. 2005; 83: 360-8.

Madhusudana SN, Subha S, Thankappan U, Ashwin YB. Evaluation of a direct rapid immunohistochemical test (dRIT) for rapid diagnosis of rabies in animals and humans. Virologica Sinica. 2012; 27: 299-302.

Mapatse M, Sabeta C, Fafetine J, Abernethy D. Knowledge, attitudes, practices (KAP) and control of rabies among community households and health practitioners at the human-wildlife interface in Limpopo National Park, Massingir District, Mozambique. PLoS Neglected Tropical Diseases. 2022; 16 (3): e0010202.

Matibag GC, Kamigaki T, Kumarasiri PV, Wijewardana TG, Kalupahana AW, Dissanayake DA, De Silva DN, Gunawardena GP, Obayashi Y, Kanda K, Tamashiro H. Knowledge, attitudes, and practices survey of rabies in a community in Sri Lanka. Environmental Health and Preventive Medicine. 2007; 12(2): 84-9.

Nilsson M. Effect of rabies education programs on rabies awareness, attitudes towards dogs and animal welfare among children in Lilongwe, Malawi. Examensarbete. 2014; 26.

Pal M. Can immunization be an effective tool in rabies control ?. EC Microbiology. 2017; 10 (1): 01-02.

Pal M, Rebuma T, Regassa M, Gutema C, Mazzeo A. Endemic rabies in Ethiopia in the One Health era. American Journal of Public Health. 2024; 12 (2), 22-32.

Rebuma T, Mehdipour S. Rabies virus: A major neglected tropical disease. International Journal of Medical Parasitology and Epidemiology Science. 2024; 5(3): 88-91.

Tandon S, Kotwal SK, Malik MA, Singh M, Kumar D, Shafiq M, Kumar M. A community-based survey on rabies control and prevention using KAP in Jammu, India. Journal of Animal Research.2017; 7(6): 1019-28.

WHO. The control of neglected zoonotic diseases: from advocacy to action and Report of The Fourth International Meeting Held at WHO Headquarters, Geneva, Switzerland. 2015; 19-20 November.

WHO. Zero by 30: the global strategic plan to end human deaths from dog-mediated rabies by 2030. World Health Organization; Food and Agricultural Organization (FAO); World Organization for Animal Health (WOAH) Retrieved from. 2018 https://www.who.int/publications/i/item/9789241513 8 38.

WHO. Neglected tropical diseases. World Health Organization (WHO). Retrieved from, 2023. https://www.who.int/health-topics/neglected-tropical-diseases#tab=tab_1.

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