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Research Article

Assessment of Knowledge, Attitude and Practices of Community Towards Rabies in Sinana District, Bale Zone, Oromia Region, Ethiopia

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Abstract

Rabies is a fatal neglected viral zoonosis which causes encephalitis in many animals and humans. It is an incurable disease once the clinical signs appear. However, it can be prevented via vaccination and community awareness. This study was conducted in Sinana woreda, Bale zone from October 2024 to May 2025 to assess the knowledge, attitude and practice of the community toward rabies using a community based cross sectional study supported by structured questionnaire survey and multistage sampling technique was used to recruit participants. Out of 200 people interviewed, the majority of participants 196 (98%) had been heard of rabies previously and 95.5% of respondents were aware that dog is the most commonly affected. About 90% of them answered bite is the major source of rabies transmission and 43% of respondents claimed that they had seen a rabid animal, whereas 53.5% of participants responded that they had not seen but heard about it. There was statistically significant difference in knowledge score and educational levels and religion ($P<0.05$). However, age group, gender, occupation type and marital status could not revealed significant association with knowledge score. The majority of participants, 197(98.5%), had positive attitude towards anti-rabies post exposure vaccine and had expressed their willingness for taking the shot if bitten by suspected dog. Furthermore, 163 (81.5%) of the study respondents were cognizant of seeking medical management if they or someone bitten by a suspected rabid animal. Occupation type and gender are among the variables that had statistically significant association ($P<0.05$) with attitude score. The practice scores was significantly different across occupational types, age and marital status ($p<0.05$). These findings showed that the resident population had a good level of knowledge about rabies. Thus, an education outreach should be conveyed to ensure accurate knowledge, improve attitude and practice about rabies in this area and although close collaboration and integration of veterinary professionals, public health experts, and local authorities should stand together to fight the disease as they are the key elements for preventing and control of this very serious and fatal disease.

Keywords

Attitude, Community, Knowledge, Practice, Rabies, Sinana Woreda

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1. Introduction

Rabies is a viral disease that affects the central nervous system of warm-blooded mammals, including humans [1]. It is a quickly progressing and lethal viral zoonosis produced by bullet-shaped viral particles of the Lyssa virus and Rhabdoviridae family, with an RNA nucleus [2].

It is spread to humans and other animals through the bite of an infected animal whose saliva contains the virus, as well as the contamination of scratches, abrasions, open wounds, and mucous membranes with infected animal saliva [3].

Following a rabid animal bite, the incubation period ranges from 5 days to several years (usually 2 to 3 months; rarely more than 1 year), depending on the amount of virus in the inoculums, the density of motor endplates at the wound site, and the proximity of virus entry to the central nervous system [4].

Rabies infection enters the body via injuries or direct contact with mucosal surfaces [5]. Rabies infection replicates in the bitten muscle (nearby popular expansion in non-neural tissue) and gains access (viral link) to motor endplates and motor axons to reach the focused sensory system and Virions are transported in transport vesicles [6] and reach the focused sensory system (CNS) by rapid retrograde transport along motor axons, with no take-up by sensory or sympathetic terminals [7]. The passage of infection inside the tissues of the mind leads to death through respiratory failure and consequent metabolic and circulatory disorders [8].

Rabies' clinical symptoms are comparable in most animals, however there is significant variance across individuals [1]. The course can be separated into three stages: prodromal, excitatory, and paralytic or terminal stage. However, this split has little practical value because of the diversity of signals and the irregular length of the phases [9].

Rabies virus produces inflammation of the brain in humans and other mammals with the symptoms of fever, anorexia, excessive salivation, paralysis, hydro and photophobia, restlessness, aggressiveness, biting inanimate objects, and change in behavior [5].

The disease must be diagnosed after the symptoms appear [4]. Rabies is diagnosed either in vivo or through dissection [10]. Lyssavirus infection is difficult to diagnose ante mortem [11]. While hydrophobia is highly suggestive, there are no medical signs of infection that are pathognomonic for this condition [12].

The historical reliance on the finding of accumulated Negri-bodies is no longer considered appropriate in support of the diagnostic evaluation, because of short sensitivity and alternative, some laboratory-based tests have been developed for confirmation of infection option, some research center-based tests have been created for affirmation of disease [13].

Routine or emergency implementation of low-cost or free rabies vaccination clinics is a significant tool for improving public and animal health as well as domestic animal rabies control [14]. Rabies can be prevented in domesticated animals through vaccination and avoiding contact with infected wild animals. The most realistic and cost-effective strategy to eliminate canine rabies is widespread dog vaccination, which saves the lives of both dogs and people [15].

Despite the fact that rabies is a vaccine-preventable disease, an estimated 29 million people worldwide need post-exposure prophylaxis (PEP) for it each year, and over 59,000 people die as a result [16]. Africa is the second continent most plagued by rabies after Asia, and the disease has been known for many centuries in Ethiopian society as Mad Dog Disease [17].

In Ethiopia, the disease was recorded by the scientific communities in 1903, and it remains an important zoonotic disease both in humans and animals to this day. The highest recorded human death (43%) due to rabies for the year 1998 was reported from Ethiopia, and the magnitude was associated primarily with the presence of a large population of stray dogs and other associated factors [18].

In Ethiopia, as in many other underdeveloped countries, the dog is the species most responsible for human exposure; nevertheless, same animal is also responsible for more than 94% of all rabies cases in other animals [19]. Rabies is a severe public health problem, especially in resource-poor communities [20].

Methods to prevent rabies in humans include raising public awareness and education about rabies disease, providing first aid after dog bites, learning more about dog behavior, and avoiding being bitten by dogs [21].

In general, low public awareness of rabies is regarded as one of the most difficult difficulties for disease prevention and control, particularly in areas where canine rabies is prevalent. Thus, the knowledge, attitude, and practice analysis in this study was targeted at providing information to identify knowledge gaps, behavioral patterns, and practices hampering rabies control and worsening the disease burden in Sinana woreda. Therefore, this study was designed to assess the knowledge, attitude, and practices of rabies prevention and control among selected communities in Sinana woreda, Oromia region, south eastern Ethiopia.

2. Materials and Methods

2.1. Study Area

A study was conducted in Sinana woreda, which is located in Bale zone, Oromia region (Figure 1). This is located 430 kilometres southeast of Addis Ababa. Sinana Woreda is located at 60 50"N-70 17"N latitude and 400 06"E-400 24"E longitude. According to the country's agro-ecological zone, the majority of Sinana district is classified as sub-humid, tepid, or cool highland. 97.46% of the population of the woreda depends on agriculture for their livelihood, and the majority of them live in areas that are considered potential cereal producers [22].

According to the 2007 national census, this woreda's total

population was 118,594, with 61,968 men and 56,626 women; none of its residents lived in cities. The majority of the population identified as Muslim, with 59.99% claiming this belief, while 38.93% identify as Ethiopian Orthodox Christian. The district capital, Robe, also acts as the zonal capital for the Bale Zone, making it a key supplier of inputs and services, as well as trading and processing. A portion of the district has a well-developed road network. The majority of Sinana district is designated as Agro-Ecological Zone (AEZ)'moist dega. The area receives between 900 and 1150 mm of rainfall every year. The average temperature varies with height, however the majority of the area falls between 15-18 ℃ [23].

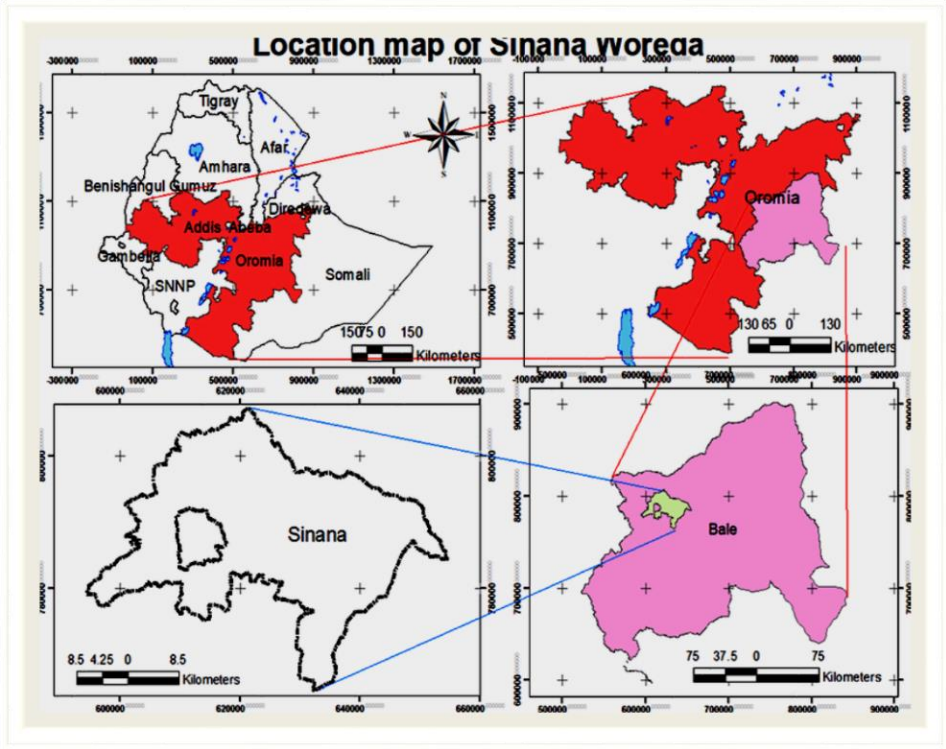

Figure 1. *Location map of sinana woreda [23].*

2.2. Study Design

A community-based cross-sectional study design was utilized to collect data that would aid in assessing the community's knowledge, attitudes, and practices (KAP) on rabies and related issues in Sinana woreda. The study was condected between October 2024 and May 2025..

2.3. Sample Size Determination

The required number of population samples was estimated using [24] formula. N = 0.25 / SE2, where N is the sample size and SE is the standard error (5%). As a result, the required sample size was 100. However, to improve precision and representativeness, the sample size was doubled.

2.4. Sampling Method

The participants were recruited using a multistage sampling technique. Sinana woreda is divided into twenty kebeles. Four kebeles were chosen at random using the lottery method. The chosen kebeles were Ilu Sambitu, Kabiira Shayya, Walta'ii Bariisaa, and Hawsho. Each kebele received a proportional allocation of the overall sample size. The requisite households from each kebele were chosen using a systematic random selection procedure. When the selected household was found to be locked, the next household was immediately substituted for the interview. The target demographic included any member of the selected household who has lived in the area as a permanent resident for more than six months. This survey includes persons of both genders, at various levels of education, and over the age of 18.

2.5. Questionnaire Survey

This study used a pretested semi-structured questionnaire with closed-ended questions. A questionnaire with four sections and twenty-two questions was created and used to assess knowledge, attitude, and practices. Section 1 featured thirteen questions about the participants' demographic information; Section 2 contained thirteen questions about responders'

knowledge; Section 3 contained six questions about attitude; and Section 4 contained three questions about rabies behaviors. The interviewer read the questions to the respondents in their local language (Oromiffa and Amharic) and recorded their responses in English.

2.6. Data Management and Analysis

After collection, the data was cleaned and verified for completeness. Following a thorough examination, the data were coded and entered into Microsoft Excel before being transported to Statistical tools for Social Science (SPSS) version 20.0 statistical tools for Windows, where analysis was performed. Descriptive statistics was applied to variables of interest to determine the frequency distribution of socio-demographic parameters. Pearson's Chi square test was used to determine the relationship between socio-demographic parameters (explanatory variables) and the community's KAP on Rabies. All P values less than 5% were considered statistically significant. The number of questions for which the respondent provided correct answers was recorded and scored. The scores were then combined, and the mean score was calculated to determine respondents' overall knowledge, as well as respondents who scored greater than or equal to the mean value for the specific independent variable recorded as "Good knowledge" or less than the mean value as "Poor knowledge" score.

2.7. Ethics Approval and Consent to Participate

Ethical consent was obtained from BHU-RRC (2024). The purpose of the study was well explained to the selected person before begining interview and informed consent was obtained to interview he/she through verbal consent.

3. Results

3.1. Socio-demographic Profile of Respondents

Out of 200 responders, 109 (54.5%) were men and 91 (45.5%) were women. The majority of responders were between the ages of 25 and 40 years. (Table 1) displays the socio-demographic profile of the respondents.

Table 1. Socio-demographic status.

Variable	Category	Frequency (%)
Gender	Male	109(54.5%)
	Female	91(45.5%)
Age (Years)	18-24	49(24.5%)
	25-40	89(44.5%)
	>40	62(31%)
Religion	Muslim	97(48.5%)
	Christian	89(44.5%)
	Others	14(7%)
Marital status	Single	68(34%)
	Married	118(59%)
	Divorced/ Widowed	14(20%)
Occupation	Government employee	56(28%)
	Businessman	61(30.5%)
	Daily labourer	12(6%)
	Farmer/pastoralist	8(4%)
	Jobless/housewives	63(31.5%)
Educational level	Cannot read and write	25(12.5%)
	Elementary school	64(32%)
	Secondary school	42(21%)
	Above grade 12	69(34.5%)

3.2. Pet/Livestock Ownership

One hundred seven (53.5%) respondents claimed owning pet animal in their house when enquired regarding pet ownership. Of which 57(53.3%) had cat alone, 26 (24.3%) had dog alone and 24(22.4%) of respondents had both cat and dog.

3.3. Assessment of Knowledge Towards Rabies

Thirteen (13) questions were used to measure the knowledge of communities in Sinana woreda about the cause, signs, mode of transmission, case management and prevention of Rabies. The mean knowledge score for the participants was 9.97 (SD= 2.2, Range 1-13), suggesting an overall correct answer rate of 76.69% (9.97/13*100), and the range of the correct answer rate of the participants concerning the 13 knowledge questions varies from 7.7% to 100%. Out of 200 respondents, almost all (98%) of respondents were heard about rabies. Their sources of information were; community (73.5%), TV (37%), human health professionals (23%), Veterinarian (12%), Radio (6.5%) and Newspaper (2.5%) (Table 2).

From the interviewed participants, only 49(24.5%) knew that the germ/virus is the cause of rabies. Majority 193(96.5%) responded that dog is the common animal which transmits the disease followed by equine (21.5%). Similarly, 95.5% of respondents were aware that dog is the most commonly affected animal. About 90%, 37% and 17.5% of the respondents knew that bite, contact with saliva and scratches are common mode of transmission of rabies animal to human or other animals, respectively (Table 2).

About 86(43%) of respondents claimed that they had seen a rabid animal, whereas 107(53.5%) responded that they had not seen but heard about it. Among the respondents, 65.5%, 45%, 66.5%, 4% and 5% mentioned behaviour change, salivation, aggression, water phobia and paralysis were the clinical symptoms of rabies in animals, respectively (Table 2).

Table 2. *Response to Rabies knowledge items.*

Question	Frequency	Percent
Have you ever heard about rabies?		
Yes	196	98
No	4	2
What is the cause of rabies?		
Heredity	16	8
Mental problem	75	37.5
Spiritual	19	9.5
Germ/Virus	49	24.5
I don't know	41	20.5
Which animal can be affected by rabies?		
Dog	191	95.5
Cattle	73	36.5
Cat	30	15
Equine	79	39.5
Wild animal	35	17.5
I don't know	5	2.5
Have you ever seen a rabid animal?		
Yes	86	43
No	7	3.5
I haven't seen but heard about it	107	53.5
What are the symptoms of such animals?		
Behaviour change	131	65.5

Question	Frequency	Percent
Salivation	90	45
Paralysis	10	5
Aggression	133	66.5
Water Phobia	8	4
I don't know	18	9
Have you ever seen a human being who suffered from rabies?		
Yes	50	25
No	27	13.5
I haven't seen but heard about it	120	60
Madness	97	48.5
Hallucination	34	17
Paralysis	19	9.5
Aggression	136	68
Water/light Phobia	5	2.5
I don't know	41	20.5
How rabies is transmitted?		
Bite by any rabid animal	180	90
Consumption of rabid animal product	38	19
Inhalation	10	5
Through scratches	35	17.5
Contact with saliva	74	37
I don't know	16	8
Can rabies be transmitted from one human to another human?		
Yes	87	43.5
No	15	7.5
I don't know	97	48.5
What could be the fate of a person bitten by a rabid animal and didn't visit a health institution?		
Will die	161	80.5
Will remain sick	14	7
Nothing happens	1	0.5
I don't know	24	12
How rabies suspected bite is managed		
Herbal Medicine	30	15
Specific drugs	26	13
Vaccination	111	55.5
Holy water/Quran	6	3
I don't know	27	13.5
Is it possible to prevent animals from rabies?		
Yes	141	70.5

Question	Frequency	Percent
No	2	1
I don't know	56	23
What are the symptoms in human?		
Madness	97	48.5
Hallucination	34	17
Paralysis	19	9.5
Aggression	136	68
Water/light Phobia	5	2.5
I don't know	41	20.5
How rabies is transmitted?		
Bite by any rabid animal	180	90
Consumption of rabid animal product	38	19
Inhalation	10	5
Through scratches	35	17.5
Contact with saliva	74	37
I don't know	16	8
Can rabies be transmitted from one human to another human?		
Yes	87	43.5
No	15	7.5
I don't know	97	48.5
What could be the fate of a person bitten by a rabid animal and didn't visit a health institution?		
Will die	161	80.5
Will remain sick	14	7
Nothing happens	1	0.5
I don't know	24	12
How rabies suspected bite is managed		
Herbal Medicine	30	15
Specific drugs	26	13
Vaccination	111	55.5
Holy water/Quran	6	3
I don't know	27	13.5
Is it possible to prevent animals from rabies?		
Yes	141	70.5
No	2	1
I don't know	56	23

3.4. Assessment of Attitudes Towards Rabies

Out of the total responders, 197 (98.5%) had a positive attitude toward the anti-rabies post-exposure vaccine and expressed a willingness to take the shot if bitten by a questionable dog. Around 44.5% of respondents were aware that traditional healers could not provide a cure for rabies. One hundred sixty-three (81.5%) of survey participants were aware of the importance of obtaining medical attention if they or someone else was bitten by a suspected rabid animal. Similarly, 86.5% of interviewed respondents got a good response when reporting to the authorities (Table 3).

Table 3. *Descriptions of attitude respondents toward rabies.*

No	Question	Agree	Don't agree	Not sure
1	Traditional healer couldn't be a solution for rabies?	89(44.5%)	53(26.5%)	58(29%)
2	If I become bitten by a rabid animal, I'll immediately visit a health institution	177(88.5%)	11(5.5%)	12(6.0%)
3	Eating the roasted meat of an animal died of rabies could be a medicine for rabies	17(8.5%)	143(71.5%)	40(20.0%)
4	Burning the rabid animal and inhaling the smoke which come out of it could be a medicine for rabies.	21(10.5%)	128(64.5%)	51(25.5%)
5	Crossing a river before 40 days once somebody becomes infected with rabies could prevent disease development.	19(9.5%)	151(75.5%)	30(15.0%)
6	Are you willing to take vaccination if you bitten by suspected dog?	Yes 197(98.5%	No 3(1.5%)	

3.5. Assessment of Practice Towards Rabies

The current finding showed that 81.5% do medical management, 50% killing dog, 34% washing wound, 13 consulting traditional healer, 9.5% confining dog while suspected bitten by rabid animal. However 0.5% nothing doing (Table 4).

Table 4. *Descriptions practice of respondents toward rabies.*

Question	Frequency	Percentage
1. What should someone do if he/she becomes bitten by a suspected rabid animal?		
Nothing	1	0.5
Washing wound	68	34
Medical management	163	81.5
Consulting traditional healer	26	13
Confining dog	19	9.5
Killing dog	101	50.5
Other	3	1.5
2. If you saw a dog with signs of rabies would you inform to the municipal authorities?		
Yes	173	86.5
No	27	13.5
3. What kind of exposure needs vaccination?		
Animal bite	186	93
Animal scratch	90	45

Question	Frequency	Percentage
Animal lick	26	43
Other	2	1

3.6. Evaluation of Knowledge Score

Pearson's Chi square was used to calculate the association between independent variables and rabies knowledge scores. The Chi-Square results demonstrated a significant difference in knowledge ratings across religion ($\chi2=20.4$, $P<0.05$), with Orthodox individuals being more aware than Muslim ones about rabies. A significant correlation was found between knowledge score and educational level ($\chi2=13.78$, $P<0.05$). Respondents in grade 12 or higher (82.6%) had a greater percentage of strong knowledge scores than those in elementary school (64.1%), secondary school (57.1%), and illiteracy (48.0%) (Table 5).

There were no significant differences ($\chi2= 2.56$, $P>0.05$) in knowledge scores between respondents who own dogs and those who do not. However, respondents with pets had a higher knowledge score (72.0%). Furthermore, no significant differences in knowledge score were observed among age groups, genders, career types, or marital statuses (Table 5).

Table 5. *Association of demographic characteristics and Knowledge Scores about rabies (N=200).*

Variables	Category	Knowledge score		χ2	P value
		Good	Poor		
Gender	Male	73(67%)	36(33%)	0.00	0.557
	Female	61(67%)	30(33%)		
Age	18-24	32(65.3%)	17(34.7%)		
	25-40	56(62.9%)	33(37.1%)	2.18	0.335
	>/=41	46(74.2%)	16(25.8%)		
Religion	Muslim	50(51.5%)	47(48.5%)		
	Christian	73(82%)	16(18%)	20.4	0,000
	Other	11(78.6%)	3(21.4%)		
Educational level	Cannot read & write	12(48%)	13(52%)		
	Elementary school	41(64.1%)	23(35.9%)	13.78	0.003
	Secondary school	24(57.1%)	18(42.9%)		
	Above grade 12	57(82.6%)	12(17.4%)		
Occupation	Government employee	41(73.2%)	15(26.8%)		
	Businessman	42 (68.9%)	19(31.1%)	4.57	0.334
	Daily labourer	8(66.7%)	4 (33.3%)		
	Farmer/pastoralist	3(37.5%)	5 (62.5%)		
	Jobless/housewives	40(63.5%)	23(36.5%)		
Marital status	Single	44(63.8%	25(36.2%		
	Married	82(69.5%	36(30.5%)	0.833	0.659
	Divorced/ Widowed	8(61.5%	5(38.5%		
Pet ownership	Pet owners	77(72.0%)	30 (28.0%)	2.56	0.109

Variables	Category	Knowledge score		χ2	P value
		Good	Poor		
	None pet owners	57(61.3%)	36(38.7%)		

3.7. Evaluation of Attitude Score

Pearson's Chi square was used to calculate the relationship between independent factors and attitudes toward rabies. Chi-Square results indicate that occupation type and gender have a statistically significant association (P<0.05) with attitude scores. The (Table 6) contained a full description.

Table 6. Evaluation of Attitude scor (Mean= 4.40, SD=1.34).

Variables	Category	Attitude		χ2	P value
		Positive	Negative		
Gender	Male	46(42.2%)	63(57.8%)	7.4	0.006
	Female	56(61.5%)	35(38.5%)		
Age	18-24	22(44.9%)	27(55.1%)	2.58	0.274
	25-40	51(57.3%)	38(42.7%)		
	>/=41	29(46.8%)	33(53.2%)		
Religion	Muslim	59(60.8%)	38(39.2%)	7.28	0.026
	Christian	37(41.6%)	52(58.4%)		
	Other	6(42.9%)	8(57.1%)		
Educational level	Cannot read & write	13(52%)	12(48%)	10.64	0.014
	Elementary school	41(64.1%)	23(35.9%)		
	Secondary school	23(54.8%)	19(45.2%)		
	Above grade 12	25(36.2%)	44(63.8%)		
Occupation	Government employee	29(51.8%)	27(48.2%)	14.9	0.005*
	Businessman	40(65.6%)	21(34.4%)		
	Daily labourer	6(50.0%)	6(50.0%)		
	Farmer/pastoralist	6(75.0%)	2(25.0%)		
	Jobless/housewives	21(33.3%)	42(66.7%)		
Marital status	Single	26(37.7%)	43(62.3%)	8.2	0.017
	Married	67(56.8%)	51(43.2%)		
	Divorced/ Widowed	9(69.2%)	4(30.8%)		
Pet ownership	Pet owners	51(54.8%)	42(45.2%)	1.02	0.311
	None pet owners	51(47.7%)	56(52.3%)		

3.8. Evaluation of Practice Score

Table 7. *Evaluation of Practice score (Mean= 2.78, SD=0.49).*

Variables	Category	Practice				χ2	P value
		Good		Poor			
		Frequency	Percent%	Frequency	Percent%		
Gender	Male	81	74.3	28	25.7	3.1	0.074
	Female	77	84.6	14	15.4		
Age	18-24	32	65.3	17	34.7	10.3	0.006
	25-40	70	78.7	19	21.3		
	>/=41	56	90.3	6	9.7		
Religion	Muslim	71	73.2	26	26.8	4.16	0.125
	Christian	76	85.4	13	14.6		
	Other	11	78.6	3	21.4		
Educational level	Cannot read & write	18	72	7	28	2.62	0.453
	Elementary school	52	81.2	1	18.8		
	Secondary school	36	85.7	6	14.3		
	Above grade 12	52	75.4	17	24.6		
Occupation	Government employee	51	91.1	5	8.9	20.78	0.000*
	Businessman	54	88.5	7	11.5		
	Daily labourer	9	75	3	25		
	Farmer/pastoralist	5	62.5	3	37.5		
	Jobless/housewives	39	61.9	24	38.1		
Marital status	Single	47	68.1	22	31.9	8.02	0.018
	Married	99	83.9	19	16.1		
	Divorced/ Widowed	12	92.3	1	7.7		
Pet ownership	Pet owners	69	74.2	24	25.8	2.4	0.120
	None pet owners	89	83.2	18	16.8		

Using Chi-Square, a number of variables, including respondents' age, marital status, education level, pet ownership, occupation, gender, and religion, were analyzed to see if they were associated with rabies behaviors. The Chi-Square results revealed significant differences in practice scores based on occupational type ($\chi2=20.78$, $P=0.000$), age ($\chi2=10.3$, $P<0.05$), and marital status ($\chi2=8.02$, $p<0.05$). Educational level, religion, gender, and pet ownership had no significant relationship with practice scores. (Table 7) provides a thorough description.

4. Discussion

Knowledge, Attitude, and Practice studies have been widely utilized to increase community knowledge, change attitudes, and improve practices related to disease prevention and control [25, 26]. In this study, the overall accuracy rate on the knowledge questionnaire was 76.69%, indicating that the majority of respondents are informed about Rabies. The current study found that the majority (98%) of respondents had previ-

ously heard about rabies disease through various communication channels, with approximately 73.5% citing local communities (parents, neighbours, and friends) as their primary sources of information. This study's findings were consistent with those of a study conducted in Gomma district, Jimma zone, which reported that [27] and 96.4% [28] of respondents were aware of rabies and had heard about the disease.

One of the survey's key findings was that 75.5% of respondents misunderstood the cause of rabies. They believed that the disease was caused by mental disorders, hereditary conditions, and spiritual issues. This figure is higher than 51.6% in Atsbi Wonberta, Mekelle [19], and 49.6% in and around Dessie town [29]. The discrepancy could be due to differences in community awareness levels.

In the current study, dogs (96.5%) were identified as the predominant animal hosts who transmit the virus to humans through bite, scratch, or licking. Several researchers reported similar findings [30, 31]. It is true that, in many regions of the world, particularly in Africa and Asia, dog bites account for 85-95% of human rabies cases.

90% of respondents identified bite as the route of rabies transmission to humans, followed by contact with saliva (37%), and scratches (17.5%). This is consistent with the 85% finding from a research conducted in Atsbi-Wonberta, Mekelle [19]. However, investigations conducted in Gondar [28] and Bahir Dar [32] revealed lower responses than the current data.

A significant percentage of participants (8%) stated that they were unaware of how rabies was transmitted in both people and animals. Approximately 65.5% of respondents were aware of the common clinical indications of rabies in animals. The finding is reinforced by research conducted in Bahir Dar [32].

After being bitten by dogs, approximately 81.5% of respondents seek medical attention from health clinics, in contrast to a research conducted in Dabat, Gondar, which indicated that 84% of respondents employed traditional medicine when exposed to the disease. This huge variance could be due to a lack of community perceptions regarding health centers for rabies, as well as their preference for traditional treatments over health centers for rabies cases [1, 19, 32]. However, this data agreed with a study from Sri Lanka, in which practically all respondents seek medical attention in the event of an animal bite [33]. The current study also found that the majority (98.5%) of respondents had a positive attitude toward anti-rabies post-exposure immunization, and 86.5% of interviewed people had a positive response when reporting to the authorities.

A statistically significant connection ($P<0.05$) was found between knowledge scores and educational levels, with higher levels of education related with higher knowledge scores. One possible explanation is that an educated person has better access to knowledge and is more likely to grasp the sickness. This conclusion is corroborated by the findings of research undertaken in Flagstaff [34] and Bahir Dar [35].

Knowledge scores were considerably different across religion ($P<0.05$), with Orthodox individuals being more knowledgeable than Muslim participants about rabies. This could be due to dog ownership, as the majority of Muslims do not keep dogs and hence have minimal concern about rabies.

The respondents' attitudes and practices were also substantially connected with their occupation. According to the study, businessmen, followed by government employers, had a more positive attitude and practice than other respondents. One probable explanation is that most people who work in these types of industries are educated and have better access to information, making it easier to grasp the disease [36, 37].

5. Conclusion and Recommendations

The findings of the present study revealed that there is good level of knowledge, positive attitude and acceptable practices towards rabies in the residents of Sinana woreda. The results show the utmost need to increase knowledge about cause, clinical signs of rabies in the resident of Sinana woreda through health literacy, which can also result in improvements in the attitudes and practices of the population regarding the disease. Those aware of the disease had good knowledge and attitudes but demonstrated poor practices. A significant knowledge gap was identified concerning the cause, clinical signs, and prevention of rabies. This lack of awareness could negatively affect public and animal health, with annual dog vaccinations not practiced in the area. Religion and exposure history significantly influenced the communities' knowledge and attitude scores, while the attitude score was significantly associated with practice scores. Additionally, a significant portion of the population prefers to consult traditional healers and use local remedies instead of seeking medical facilities to treat dog bite injuries.

Based on the above conclusion, the following recommendation were forwarded:

1. Rabies awareness campaigns and education initiatives should raise community awareness about first-aid treatments for dog bites and how rabies is transmitted.
2. The lethal nature of rabies, as well as the availability of preventive measures such as vaccinations for humans and dogs, should be explained through mass media and education campaigns, with a focus on mode of transmission, clinical indicators, wound management, and the need for an anti-rabies vaccine.
3. Vaccinate your dogs and cats against rabies, promptly wash your wound with water and soap, seek anti-rabies vaccine after being bitten by a rabid animal, and remember that all mammals are susceptible to rabies.

Abbreviations

CNS	Central Nerve System
KAP	Knowledge, Attitude and Practices
PEP	Post-Exposure Prophylaxis

RNA	Ribonucleic Acid
WH	World Health Organization
X^2	Chi-Square

Author Contributions

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Gelan Dule Dahesa: Data curation, Software, Writing – review & editing

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Data Availability Statement

All the datasets generated or analyzed during this study are included in this manuscript.

Conflicts of Interest

The authors declare no conflicts of interest.

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