

**Research Article**
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## Assessment of Community Knowledge, Attitude and Practice (KAP) About Rabies in Mizan Aman Town, SNNPRS, Ethiopia, 2024

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### ABSTRACT

**Introduction:** Africa is, together with Asia, the continent that suffers from most human deaths related to rabies. In Ethiopia, rabies is an important disease that has been recognized for many centuries. According to Mizan Teppi University Teaching Hospital annual report showed that rabies had been well established and become endemic in and around Mizan Aman town and majority of rabies cases were suspected dog bites. This study was conducted in Mizan Aman during January, 25 to April, 18 2024 to assess the knowledge, attitudes and practices of the communities on rabies.

**Methods:** A community based cross-sectional questionnaire survey was carried out with a face to face interview method and involved 392 participants by systematic random sampling technique. The data was entered in to a Microsoft excel 2007 spread sheet computer program. Data analysis was made by using pivot table.

**Result:** In this study dog bite (70.9%) was the principal source of human rabies exposure while wildlife was the next (26.5%). According to the study participant Bite, contact with saliva and scratch with teeth 63.5%, 13.3%, 13% respectively are the main mode of rabies transmission. Of the 392 respondents 35(8.9%) had dogs. The findings of this study indicate that the incidence/human exposures of dog bit were 13.5%.

**Conclusions:** The findings of this study indicate that the incidence/human exposures of dog bit were high. In this study dog bite was the principal source of human rabies exposure while wildlife was the next. We recommended the town administrative needs Inter-sectoral collaboration among Veterinary services, Public Health and Wild life.

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### List of Abbreviations

**ISAVET** In-Service Applied Veterinary Epidemiology Training  
**KAP** Knowledge Attitude and Practice

### Introduction

Rabies is caused by a virus within the virus family Rhabdoviridae. It is a disease of mammals, but the sensitivity to the virus can vary between different mammal hosts. The virus is spread through infected saliva in bites, scratches and through licks from infected animals in open wounds or on mucosal membranes [1,2]. Rabid animals can transmit virus early in the infection because of the spread of virus to the salivary glands and the saliva occur at the same time as the virus is spread in the central nervous system. Rabies causes most problems outside of Europe, but like other infectious diseases it poses a risk of being spread when people and animals are moving across borders [3]. Africa is, together with Asia, the continent that suffers from most human deaths related to rabies [1]. In Ethiopia, rabies is an important disease that has been recognized for many centuries [4]. The people who are most subject to the risks of rabies are Poor public awareness towards rabies, poor people and those living in rural areas, because there

might be a limited access of vaccine and economical resources in those areas [5]. A study in Bangladesh showed the knowledge of rabies differs among groups of people depending on various factors. Knowledge, attitudes and practices (KAP) studies have been widely used around the world for different applications in public health based on the principle that increasing knowledge will result in changing attitudes and practices to minimize disease burden [6]. KAP surveys have also been applied to the study of rabies. According to mizan teppi university teaching hospital annual report showed that rabies had been well established and become endemic in and around mizan aman town and majority of rabies cases were suspected dog bites [7]. There for conducting questioner survey to describe the level of community knowledge, attitude and practice (KAP) on rabies is important.

### Objectives

General objectives

- To describe the level of community knowledge, attitude and practice (KAP) on rabies specific objectives
- To describe rabies incidence/human exposures.
- To identify the source of human rabies

## Materials and Methods

### Study Area

Mizan-Aman town is the largest town surrounded by Dehub Bench and semen bench Woreda and administrative centre for Bench-Sheko Zone. This town has latitude and longitude of 7°0' N 35° 35' E/ 7.000° N 35.583°E and an elevation of 1451 m above sea level. The town is found at a distance of 583 Km from capital city Addis Ababa and 836 Km from Regional administrative city Hawassa. It is one of the reform towns in the Region and it is an administrative center of Bench-Sheko zone having six kibbles, ten sub-kibbles and 45 localities. The town has a total population of 52,210, of whom 18,625 are male and 33,585 females. The population distribution /density of the town are 1310 person per square kilometer or 13 people per hectare. The majority 45.97% of the inhabitants is Ethiopian Orthodox Christianity follower, 33.8% were Protestants, 17.71% were Muslim follower, and 1.05% practiced traditional beliefs. The town has one teaching hospital, one health center and five health posts. On the other hand, there were one regional veterinary laboratory, one veterinary clinic and two veterinary health posts and all are runned by the government. The main livestock species reared in the town are 15717 cattle, 3963 sheep, 566 goats, 234000 poultry and 392 equines. [8]. There for the study will be conducted in Mizan-Aman town from January, 25 to April, 18 2024.

### Source of Population

Adult men and women > than 18 years old found in Mizan Aman town.

### Study Population

All systematically sampled adult men and women > than 18 years old found in Mizan Aman town during study Period.

### Inclusion Criteria

All male and female adult residents who were living in Mizan Aman town > than 6 months.

### Exclusion Criteria

Adults who have started living in Mizan Aman town for less than 6 month, Adults who were critically ill and or unable to communicate.

### Study Design and Study Period

A community based cross-sectional study design was used to asses' knowledge, attitude and practice (KAP) about Rabies among adults residing in Mizan Aman town. The information concerning the disease will be collected from January, 25 to April, 18 2024.

### Sample Size and Sampling Technique

Sample size for KAP is calculated using a single population proportion formula considering P=50% Thus, using 95% confidence interval and 0.05 absolute precision [9].

$n=1.962 \times P \times \text{Pexp} / d^2$  where,

n=required sample size,

P=Expected proportion of population knowing about Rabies is 50%,

d=Desired absolute precision (0.05)

Hence, 392 target populations were selected from the total sample

size of 400 with 2% non response rate. A systematic sampling technique was used to select households. Then the first house was located by lottery method and the next house hold was selected every 10th interval.

### Data Collection Procedures Tools and Data Quality Assurance

Data was collected by me. For assessment of KAP of the communities structured questioner was first developed by English version based on the information gathered from different literatures and then translated to Amharic. The questionnaire was pre-tested on 5% of adults before the actual **data collection process** was started. In the pretest clarity, understandability and arrangement of the questions and other things were checked.

### Data Management and Analysis

The information (raw data) that is gathered through questionnaire survey were coded and entered in to a Microsoft office excel 2007 spread sheet computer program. Before the analysis of the coded data, it is filter. Data analysis was made by using scientific calculator. Frequency distribution with the respective percentage is displayed and the Data is presented in tables and charts.

### Study Variables

The dependent variables of the study are knowledge, attitude, and practice of the community on rabies disease. The explanatory variables are the age of interviewee, educational status, religion, occupation, monthly family income and marital status.

## Result

### Socio Demographic Characteristics of The Respondents

This study has assessed adult's knowledge, attitude and practice (KAP) about Rabies in Mizan Aman town, Ethiopia. The total sample size of the study was 400 with a respondent rate of 98%, beside this there was a non respondent rate of 2% because eight participants were refused and in completed the interviews. All of the respondents were adult age group, of them 234 (59.7%) were female, the rest 158 (40.3%) were male (table.1).

### Knowledge Towards Rabies

The results indicated that all of the respondents in the study areas of mizan aman were heard about rabies. Participants mentioned television (39.6%), community (21.9%), radio (16.8%), health extension worker (11.2%) and animal health assistance (10.5%) are sources of their information about rabies. Out of 392 respondents 359(91.6%) knows rabies exist in mizan aman town (table.2).

### Attitude Towards Rabies

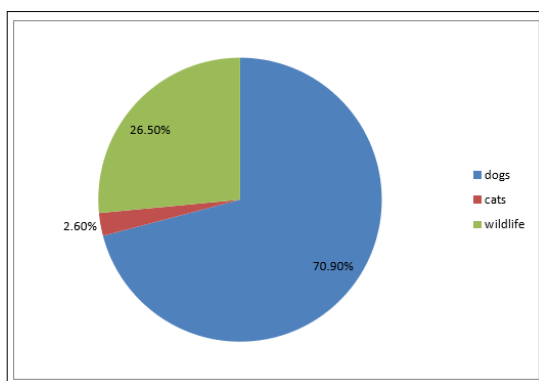
Out of 392 respondents 161(41.1%) were love rising a dog. According to this study 337(86%) agreed to take the victim to a hospital if they were bitten by dogs whereas, 49(12.5%) respond treat using traditional medicine and 6(1.5%) of them take the victim to a veterinary clinic (table 3).

### Practice Towards Rabies

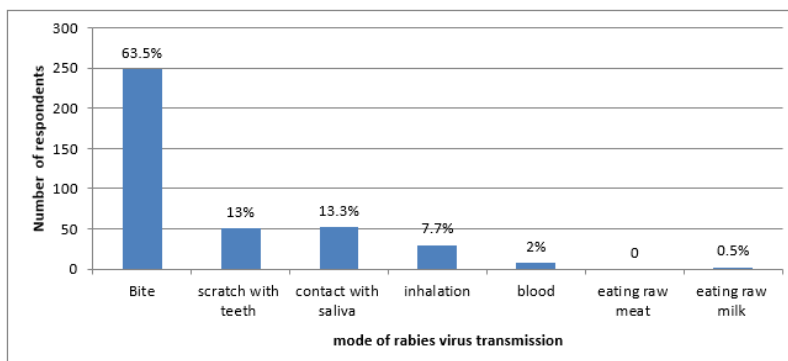
Of the 392 respondents 35(8.9%) had dogs, from this only 13 (37.1%) tied/housed their dog, 3(8.6%) of the dog's owner keep them in fenced compound and 19(54.3%) razing dog free roaming (table 4).

**Table1:** Socio-demographic characteristic of population participating in the survey on knowledge, attitude and practice of rabies in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2024.

Variables	Category	Frequency	Percentage (%)	Variables	Category	Frequency	Percentage (%)
Sex	Male	158	40.3	Education:	none	56	14.3
	Female	234	59.7		59.7	51	13
Age (years)	18-29	118	118	primary	69	17.6	
	30-41	171	43.6	secondary	80	20.4	
	>=42	103	26.3	college level	62	15.9	
Monthly income	no income	19	4.8	Religion:	Some degree level	74	18.8
	1-500	38	9.7		orthodox	185	47.2
	501-1500	127	32.4		protestant	150	38.3
	1501-3000	63	16.1		Muslim	57	14.5
Number of children	>=3001	145		catholic	0	0	
	0	127	32.4	traditional	0	0	
	1	110	28.1	Occupation:	Government employee	92	23.5
	2	77	19.6		privet business	129	32.9
	3	36	9.2		Private company employee	44	11.2
>=4	42	10.7	Housewife		44	11.2	
Marital status:	single	64	16.3		Daily laborer	72	18.4
	married	228	58.2	student	11	2.8	
	widowed	49	12.5				
	Divorced	51	13				



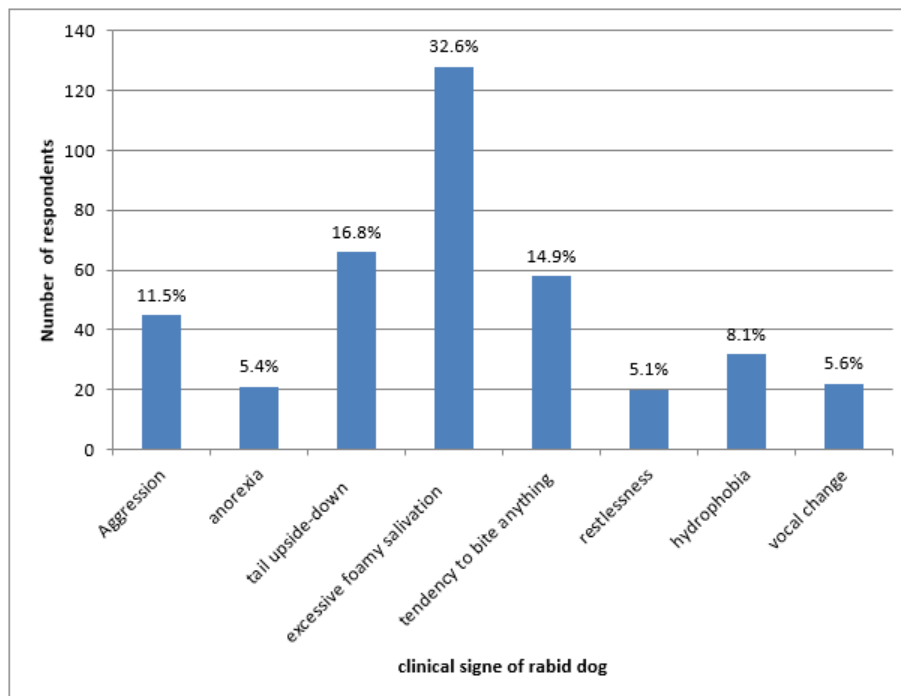
**Figure 1:** Source of rabies virus incidence in human, in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2024.



**Figure 2:** Showing the mode of rabies virus transmission, in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2024

**Table 2:** Showing level of knowledge towards rabies among residing in in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2024.

Variables	Attributes	Frequency	Percent %
Have you ever heard about rabies?	Yes	392	100
	No	0	0
If yes, from where did you hear?	Radio	66	16.8
	Television	155	39.6
	Health extension worker	44	11.2
	Animal health assistance	41	10.5
	Brochures	0	0
	community:	86	21.9
Does Rabies exist in mizan aman?	Yes	359	91.6
	No	33	33
Does rabies can kill?	Yes	341	87
	No	51	13
Does all animals can be infected with and transmit rabies virus?	Yes	227	57.9
	No	165	42.1
Does an infected human can transmit rabies to another human?	Yes	196	50
	No	196	50
Does dog Vaccination can help in the control of rabies?	Yes	386	98.5
	No	6	1.5
Does destroying stray dogs can help in the control of rabies?	Yes	357	91.1
	No	35	8.9



**Figure 3:** Showing the clinical signe of rabid dog, in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2024.

**Table 3:** Showing level of attitude towards rabies among residing in in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2021

Variables	Attributes	Frequency	Percent%
Do you have dog/s?	agree	161	41.1
	disagree	231	58.9
Is it good to vaccinate your dog(s)?	agree	387	98.7
	disagree	5	1.3
Is it good to wash dog bite wounds with soap and alcohol?	agree	320	81.6
	disagree	72	18.4
Is it good to have a cage for your dog(s)?	agree	366	93.4
	disagree	26	6.6
Is it inhumane/bad to confine your dog(s)?	agree	101	25.8
	disagree	291	74.2
If a person is bitten by a dog, what should be done?	Do nothing	0	0
	Treat using traditional medicine	49	12.5
	Take the victim to a veterinary clinic	6	1.5
	Take the victim to a hospital	337	86

**Table 4:** Showing level of practice towards rabies among residing in mizan aman town, bench sheko zone, SNNPRS, Ethiopia, January, 25 to April, 18 2024.

Variables	Attributes	Frequency	Percent%
Do you have dog/s?	Yes	35	8.9
	No	357	91.1
If yes, what is the management type of dog?	Tied/housed	13	37.1
	Not tied but fenced	3	8.6
	Free roaming	19	54.3
Did your dog get vaccination	yes	0	0
	No	35	100
Bitten by a dog before	Yes	53	13.5
	No	339	86.5
I do not allow stray dogs to roam freely into my compound	Yes	367	93.6
	No	25	6.4

## Discussion

Knowledge about a given issue has been recognized as one of the major determinants that shape the attitude, and practice of a community. A positive correlation between resident's level of knowledge about issues related to rabies and their attitude and practice has been supported by various literatures. From our study, the proportion of females in the sample was higher than males. This is somewhat expected due to priority was given for them, the presence of females at the time of interview and involvement in family care. The findings of this study indicate that all respondents from mizan aman were heard about rabies. This could perhaps be the result of awareness creation programs carried out in the study area by different stakeholders [10] and the high level of awareness among the respondents may be due to endemicity of rabies. In this study respondent mentioned Medias are the major sources of their information about rabies. Different result were recorded by habitamu et al. [11] which is major source of information were School/friends/neighbors. This may be due to the current beginning of national one health task force media coverage and the widely used of social media. In this study dog bite (70.9%) was the principal source of human rabies exposure. This finding is Contrast with a previous review, Gondar (100%) and Tigray (100%) [12],

this may be due to the presence of areas with better forest coverage in this study area wildlife like foxes, wolves, hyena, and vampire bats usually live in forest areas might contribute to the incidence. Wild animals might have frequent contact with domestic dogs. According to this KAP analysis revealed that 87% of respondents recognize rabies as a fatal disease. Similarly Eidson et al., [13] reported that 94.1% of the study participants know rabies as a killer disease. However, in this study, more than half of the respondents (57.9%) know that all warm blooded animals can be infected with and transmit rabies virus. Above eighty one percent of respondents were completely aware that they should wash a bite wound with alcohol, soap and water. The percentage of respondents who were aware is similar when compared to study healed on Gondar zuria district which is 69.3% [14]. Out Of 392 respondents, 74.2 % were disagreeing that confine dogs are inhuman/bad. Different result was recorded in morocco which is 20.6 % [15]. This may be due to the difference of respondent's culture. The results of this study revealed that if a person is bitten by a dog, 12.5% of the respondent prefer treat using traditional medicine, which is lower than the previously reported studies in Shopa Bultum which is 79.47% [16], and this might be due to promotion and accessibility of modern medicine in the community via mizan tepi university

teaching hospital. Out Of 392 respondents, 8.9% were reported to have dogs. The present finding is somewhat disimilar to the findings reported in the earlier studies carried out in Zimbabwe reported that 54% of the surveyed participants had owned dogs [17]. This might be due to different study area, culture and monthly income of participant. More than half of the dog's owners were reported to be allowed to roam freely in the study area [18], this may be for freely scavenging food, which can provide a suitable condition for rabies transmission in mizan aman.

According to WHO's recommendation, vaccinating 70% of the dog population helps to control rabies, and thus, prevent the rabies virus from circulating amongst susceptible animals [19]. However, culling, which is an immediate and visible response to public concerns about rabies, is still frequently carried out in response to rabies outbreaks in the study area. This is an indication lack of vaccine availabilities and an inadequate practice of vaccinating domestic dogs as a strategy to control rabies. The findings of this study indicate that the incidence/human exposures of dog bit were 13.5%. Slightly similar result was recorded in morocco [15]. More than ninety percent of the participants did not allow stray dogs to roam freely into their compound. The present finding is different to the findings reported in the earlier studies carried out in morocco, for example reported that 69.3% of the respondents did not allow stray dogs to roam freely into their compound [15].

### Limitations

This study had one main limitation. Which is, rural community were not included for knowledge, attitude and practice assessment of rabies for logistical and financial constraints. We assumed that this would significantly affect the result as they are epidemiologically difference.

### Conclusion

The findings of this study indicate that all respondents from mizan aman were heard about rabies. However, more than half of the dog's owner was reported to be allowed the dog to roam freely in the study area and the findings of this study indicate that the incidence/human exposures of dog bit were high. In this study dog bite was the principal source of human rabies exposure while wildlife was the next. Instead of vaccinating a dog, culling, which is an immediate and visible response to public concerns about rabies, is still frequently carried out in response to rabies outbreaks in the study area

### Recommendations

Pertaining to our conclusions, we forwarded the following recommendations for mizan aman town health department, town agriculture department, stockholder and the community.

- The communities in the study area have good knowledge but a lower attitude and practice on rabies control and prevention. They need continuous Community awareness rising on rabies transmission, prevention and control.
- Mizan aman town agriculture department needs Regular anti-rabies vaccinations for dogs.
- The community needs Report stray dogs and other animal showing unusual behavior to animal health assistants and health extension worker
- The community needs to avoid free roming dogs
- The town administrative needs Inter-sectoral collaboration among veterinary services, public health and wild life.
- The community needs Extensive wound wash: flushing and washing of the wound for a minimum of 15 minutes with soap and water, detergent or other substances that kill the rabies

virus. Advise the bitten individual/family to visit the nearest health facility immediately.

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