



## Assessment of Community Knowledge, Attitudes, and Practices towards Rabies in Wondo Genet District, Sidama Region, Ethiopia

Ephrem Tsedeke<sup>1</sup>, Tariku Geinoro<sup>2\*</sup>

<sup>1</sup> Livestock Resource Development Office, Wondo Genet, Sidama Regional State, Ethiopia.

<sup>2</sup> Ethiopian Agricultural Authority, Hawassa, Ethiopia.

\* Corresponding Author: Tariku Geinoro ([tarikugself@gmail.com](mailto:tarikugself@gmail.com))

### Review Article

<https://doi.org/10.31559/VMPH2025.6.2.3>

Received: 4 May 2025

Revised: 24 May 2025

Accepted: 11 Jun 2025

**How to cite this article:** Tsedeke, E., & Geinoro, T. (2025). Assessment of Community Knowledge, Attitudes, and Practices towards Rabies in Wondo Genet District, Sidama Region, Ethiopia. *Veterinary Medicine and Public Health Journal*, 6(2), 58-68. <https://doi.org/10.31559/VMPH2025.6.2.3>



This file is licensed under a [Creative Commons Attribution 4.0 International](https://creativecommons.org/licenses/by/4.0/)

### Abstract:

**Objectives:** This study aimed to assess community awareness, knowledge, and practices regarding rabies in the Wondo Genet district.

**Methods:** A questionnaire survey was conducted among local residents with multistage sampling procedure.

**Results:** An overwhelming 98.6% of respondents are aware of rabies, with dogs identified as the most affected species (48.2%), followed by cats (23.6%) and humans (13.7%). While 47.1% identified the rabies virus as the causative agent, 82.5% understood transmission pathways, predominantly recognizing bites as the primary method (49.6%). While a substantial 91.8% of respondents acknowledged the fatal nature of rabies in animals, gaps in knowledge were evident, particularly regarding post-exposure prophylaxis; only 27.9% were aware of its existence, and a mere 23.3% believed vaccination should occur immediately after exposure. The community perceives children as the most at risk (49.9%) from rabies, highlighting the need for targeted educational efforts. Additionally, the survey indicated a strong community sentiment regarding the seriousness of rabies with 68.5% and 73.4% supporting the importance of community awareness programs. However, misconceptions persist, as 67.4% of respondents believe only dogs can transmit rabies to humans. On vaccination, 89.5% concurred on its effectiveness for dogs, and 80.8% of pet owners reported vaccinating their animals against rabies, though only 17.8% maintained vaccination records. Respondents reported that in the event of bites from potentially rabid animals, half (49.0%) would seek post-exposure vaccination, while others would consider traditional treatments (34.2%) or consult spiritual healers (15.3%). Community actions towards suspected rabid animals varied, with 44.4% opting to kill them and 27.7% notifying authorities. The findings underscore a proactive community attitude toward vaccination and appropriate post-bite treatment yet highlight for improvement in awareness regarding transmission.

**Conclusion:** While there is a high level of awareness and concern about rabies in the Wondo Genet District, the study reveals critical knowledge gaps regarding post-exposure interventions and misconceptions about rabies transmission. These findings indicate an urgent need for enhanced community education initiatives to mitigate the risks associated with this preventable disease.

**Keywords:** Attitude; Ethiopia, Knowledge; Practice; Rabies; Wondo Genet.

## 1 Introduction

Rabies is a neurotropic disease caused by *Lyssavirus*, which is transmissible to all mammals and is a member of the genus *Lyssavirus* in the family *Rhabdoviridae* of the order *Mononegavirales*. The WHO has listed it as one of the 20 neglected tropical illnesses, which kill 59,000 people a year and are almost 100% fatal in both humans and animals (WHO *et al.*, 2018). It also causes a severe and long-term societal and financial burden on patients in poverty-stricken countries (WOAH, 2019). The cost of post-exposure prophylaxis for humans, the loss of livestock, and other rabies-related expenses made an estimated 8.6 billion USD annually in global economic burden (WHO, 2023). In Africa, rabies is an endemic disease in which 99% of human cases were caused by dog bites (WOAH, 2022).

The goal set by WHO and WOAH was to eradicate dog-mediated rabies-related mortality in humans by 2030. In addition to being 100% preventative, dog rabies vaccines can successfully eradicate the disease at its animal source (WOAH, 2022; WHO, 2023). However, without consistent efforts to bridge the gaps in access to dog vaccination and post-exposure treatment for afflicted people and animals, the threat of rabies is anticipated to grow in Africa (WOAH, 2022). Public health officials and veterinarians must work together in the community to avoid human rabies. Control and prevention relied heavily on baseline data on the coverage rates of several procedures, including rabid dog management, post-exposure prophylaxis, proper care of bite wounds, dog vaccination, and dog restraint (WOAH, 2017). Mass dog vaccination is the preferred method of eradicating rabies, and vaccination coverage in rabies-endemic areas should be at least 70% to prevent outbreaks (WHO, 2013). On the other hand, veterinary services should take the lead in controlling the dog population to prevent the spread of the rabies virus, coordinating their efforts with other relevant public institutions (WOAH, 2019).

An estimated 55,000 people worldwide die each year from endemic canine rabies, with Asia accounting for 56% of these deaths and Africa for 44%. Approximately 98% of human rabies cases happen in underdeveloped nations with significant dog populations, many of which are stray animals (WHO, 2006; Swedberg *et al.*, 2024). Among African countries, Ethiopia was estimated to have the second-largest number of rabies deaths in the year 2018 (WHO *et al.*, 2018). According to

the Centers for Disease Control and Prevention (CDC) report, thousands of people were infected in Ethiopia, and an estimated 2,700 people die each year due to rabies (CDC, 2017). The high incidence of canine rabies in Ethiopia is due to the presence of a large number of dogs and their poor management (Wario *et al.*, 2018). As reported by Jemberu *et al.* (2013), the estimated yearly incidence of rabies was 2.33 cases per 100,000 people, 412.83 cases per 100,000 dogs, 19.89 cases per 100,000 cattle, 67.68 cases per 100,000 horses, and 14.45 cases per 100,000 goats (Jemberu *et al.*, 2013). A total of 2667 dog brain samples were investigated between 1990 and 2000, and 1951 (73.2%) samples tested positive for rabies (Yimer *et al.*, 2002). Between 2001 and 2009, the Ethiopian Health and Nutrition Research Institute recorded 386 fatal human cases, with an annual range of 35 to 58. During that time, 75% of the 3,460 animal brains tested in the lab were found to be rabies-positive (Deressa *et al.*, 2010). On the other hand, 87 cases of human rabies were clinically identified at the Ethiopian Public Health Institute between 2015 and 2019, with a death rate of 100% (Aklilu *et al.*, 2021). According to Aklilu (2021), dogs were responsible for 95.4% (83/87) of human deaths, compared to 1.1% (1/87) for cats and 3.4 (3/87) for wild animals (Aklilu *et al.*, 2021).

Unfortunately, individuals who were exposed to rabies virus often see traditional healers for the diagnosis and treatment of the disease. These widespread traditional practices of handling rabies cases were believed to interfere with timely seeking of post exposure prophylaxis (Deressa *et al.*, 2010; Tayebwa *et al.*, 2025). Poor public awareness towards rabies is considered as one of the bottlenecks for the prevention and control of the disease in Ethiopia (Awoke *et al.*, 2015). For efficiently increasing awareness, the knowledge gap among the community should be identified and targeted.

Wondo Genet district, located in the Sidama region of Ethiopia, is characterized by its agricultural activities and close interactions between humans and animals, which may increase the risk of rabies transmission. This study aims to assess the knowledge, attitude, and practice (KAP) of communities in Wondo Genet district towards rabies, focusing on identifying gaps in knowledge and misconceptions that may contribute to the persistence of the disease in the area. By evaluating community attitudes towards rabies and their practices in response to potential

exposure, we can better understand the factors influencing rabies prevention efforts in this specific context. The findings from this assessment will provide valuable insights for public health officials and policymakers to design targeted educational interventions and community engagement strategies that promote rabies awareness and prevention in Wondo Genet. Ultimately, enhancing community knowledge and changing attitudes towards rabies can lead to improved practices that reduce the incidence of this fatal disease (Rinchen *et al.*, 2019).

Despite its preventability, many communities may lack sufficient awareness about rabies transmission, prevention, and the importance of vaccination, contributing to higher risks of infection. Understanding the existing levels of knowledge, attitudes, and practices is essential for devising effective public health interventions to enhance awareness and reduce rabies cases in the community. Therefore, objective of this study was to assess the knowledge, attitudes, and practices (KAP) of respondents toward rabies in Wondo Genet district, Sidama, Ethiopia, in order to identify gaps in awareness and inform public health interventions aimed at rabies prevention and control.

## 2 Materials and Methods

### 2.1 Study Area and Population

The study was conducted in the Wondo Genet area of Ethiopia's Sidama Region, located in the Great Rift Valley. It borders Oromia Region to the north and east, Malga region to the south, and Hawassa Zuria to the west. Wondo Genet, the administrative headquarters, is 272 kilometers from Addis Ababa and 35 kilometers west of Hawassa City. The district is situated at an elevation of 1,600 meters (5,249 feet) above sea level, with coordinates of 7.0833° N and 38.2333° E. Wondo Genet experiences an average annual rainfall of 800 mm to 1,200 mm, influenced by local microclimates. Temperatures typically range from 15°C to 25°C (59°F to 77°F) year-round. The district is noted for its mountainous landscape, hot springs, forests, and varied agricultural practices. Key sources of income include cash crops such as khat, grains, and livestock production. The estimated livestock in the district included 33,040 cattle, 10,954 sheep, 6,209 goats, 1,318 horses, 202,933 poultry, and 1,550 dogs. As of the 2007 Ethiopian Census by the Central Statistical Agency, the Wondo Genet district had

approximately 119,400 residents, comprising about 82,386 males (69%) and 37,014 females (31%). The targeted populations for this study included male and female community members, students, farmers, housewives, government workers, merchants, and the unemployed living in the district during the study period (Tasew & Abayneh, 2017).

### 2.2 Operational Definition

The study's dependent variables were the community's knowledge, attitude, and practices regarding rabies, while the explanatory variables included respondents' age, sex, education, occupation, religion, marital status, type of residence, and family size. The goal is to gain insights to inform public health initiatives and enhance community engagement in rabies prevention. Additionally, it aims to comprehensively assess and quantify the community's knowledge, attitudes, and practices to guide public health interventions that reduce the risk of rabies transmission.

### 2.3 Study Design and Sampling Size Determination

A cross-sectional study was conducted from September to November 2024 in the Wondo Genet district of the Sidama Region, Ethiopia. The sample size was calculated assuming a 50% expected prevalence (due to lack of prior KAP data). The Thrusfield (2018) formula was employed for this calculation, using a 95% confidence interval ( $Z=1.96$ ), a proportion of  $P=0.5$ , and a margin of error of  $d=0.05$ .

$$N = \frac{Z^2 * P_{exp}(1 - P_{exp})}{d^2}$$

The sample size calculated was 384 and with 5% non-responsive rate, a total numbers of surveys collected were 403.

### 2.4 Sampling Techniques

A multi-stage sampling technique was employed to select the sampling units. Six kebeles, the smallest administrative units, were randomly selected from the Wondo Genet district study population using a lottery method. The total sample size was allocated to these kebeles based on their estimated population density. Within the selected kebeles, households were chosen using systematic random sampling, and one eligible respondent from each household was randomly selected for the questionnaire. The distribution of participants by sex, age, occupation, and residence

area was balanced to reflect population differences.

## 2.5 Data Collection Methods

A structured questionnaire survey was conducted for 40 minutes about their knowledge, attitudes and practices about the severity of rabies, awareness of rabies transmission, symptoms, its prevention in human and animal, vaccination of pets and treatment measures. Based on their age groups, gender, educational status, and or occupation were the variables to consider in the assessment. The data was collected by trained collectors assigned in different kebeles. Verbal or oral consent of the participants was taken and surveyed with their local language.

## 2.6 Data Management and Analysis

Data was collected via questionnaires administered by collectors in various kebeles. Participants provided consent, and surveys were conducted in their local language for 40 minutes. All the collected data were input into a Microsoft Excel 2010 spread sheet and imported into SPSS version 20 software. Accordingly, descriptive statistics such as frequency distribution and percentages were used to summarize the findings.

## 2.7 Ethical Consideration

Ethical clearance was obtained from the ISAVET training committee and the Wondo Genet district Livestock Resource Development Office. Each participant was informed of the study's purpose and provided verbal informed consent. Participation was voluntary, and respondents could withdraw at any time. Interviews were anonymous, and data confidentiality was maintained throughout the study.

## 2.8 Limitations

A total of 384 questionnaires were distributed to the sample respondents of sample kebeles. A short time-frame prevents follow-up assessment of surveyed participants, which clarifies responses or gathers more detailed information. The shortage of funding for this project work is a significant constraint, limiting the ability to conduct more thorough follow-up interviews or additional surveys. This lack of resources not only hampers the depth of data collection but also restricts the potential for comprehensive analysis of the findings.

## 3 Results

### 3.1 Socio-Demographic Characteristics of the Respondents

Out of the total 403 respondents, the majority, 60.3% (243), was males, and the remaining 39.7% (160) were females. The majority of the respondents' age group lied in the range between the ages of 30-45 years old, which accounts for 55.1%, followed by a range of age groups (15-29 years old) with 30.4% and ( $\geq 46$  years old) with 14.5%, respectively. Participants were mostly with primary education (34%) and followed by those with no formal education (25.2%), secondary school (21.4%), college diploma (14.8%), and degree & above (4.7%). Concerning occupation, the majorities of the respondents were farmers (31.5%), and 21.4%, 18.6%, and 15.1% were engaged in government employees, students, and merchants, respectively. The remaining respondents were unemployed (7.9%) and housewives (5.5%). About 62.7% of the respondents were Protestants, 19.5% were Orthodox, 9% were Catholics, and the remaining 8.8% were Muslims. The majority of respondents (55.1%) live in urban areas, 27.1% of the respondents live in rural areas, and the remaining 17.8% of the respondents live in peri-Urban (Table 1).

**Table 1:** Socio-Demographic Information of the Study Participants

| No. | Variables          | Category            | Frequency  | Percent       |
|-----|--------------------|---------------------|------------|---------------|
| 1   | Sex                | Male                | 243        | 60.3%         |
|     |                    | Female              | 160        | 39.7%         |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0</b>  |
| 2   | Age (in years)     | 15-29               | 123        | 30.4%         |
|     |                    | 30-45               | 222        | 55.1%         |
|     |                    | ≥46                 | 58         | 14.5%         |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |
| 3   | Educational status | Illiterate          | 102        | 25.2%         |
|     |                    | Primary school      | 137        | 34.0%         |
|     |                    | Secondary School    | 86         | 21.4%         |
|     |                    | Diploma             | 69         | 14.8%         |
|     |                    | Degree & above      | 19         | 4.7%          |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |
| 4   | Occupation         | Farmer              | 127        | 31.5%         |
|     |                    | House-wife          | 22         | 5.5%          |
|     |                    | Government employee | 86         | 21.4%         |
|     |                    | Merchant            | 61         | 15.1%         |
|     |                    | Unemployed          | 32         | 7.9%          |
|     |                    | Student             | 75         | 18.6%         |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |
| 5   | Religion           | Protestant          | 253        | 62.7%         |
|     |                    | Orthodox            | 79         | 19.5%         |
|     |                    | Muslim              | 35         | 8.8%          |
|     |                    | Catholic            | 36         | 9.0%          |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |
| 6   | Marital Status     | Single              | 169        | 41.9%         |
|     |                    | Married             | 212        | 52.6%         |
|     |                    | Divorced            | 18         | 4.4%          |
|     |                    | Widowed             | 4          | 1.1%          |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |
| 7   | Residence Type     | Urban               | 222        | 55.1%         |
|     |                    | Peri-Urban          | 72         | 17.8%         |
|     |                    | Rural               | 109        | 27.1%         |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |
| 8   | Household Size     | 1-3                 | 210        | 52.1%         |
|     |                    | 4-6                 | 136        | 33.7%         |
|     |                    | Above 6             | 57         | 14.2%         |
|     |                    | <b>Total</b>        | <b>403</b> | <b>100.0%</b> |

### 3.2 Knowledge of Respondents toward Rabies

A large majority (98.6%) of respondents are aware of rabies, with only 1.4% unaware. Dogs seen as the most affected by rabies (48.4%), followed by cats (23.6%) and humans (13.7%). While 47.1% correctly identified the virus as the cause of rabies, 14.2% were unsure. Most respondents (82.5%) understand how rabies is transmitted, with biting cited as the most common method (49.6%). A significant portion (43.3%) recognized all listed signs of rabies, whereas a smaller segment noted specific signs like biting and behavioral changes (25.2%). A substantial 91.8% believe rabies can be fatal to animals. Furthermore, 85.8% know rabies is zoonotic, with biting also being the leading method of transmission to humans (46.3%). Children are perceived as the most at-risk group (49.9%), followed by all age groups (24.7%). Only 27.9% are aware of post-exposure prophylaxis, and

23.3% believe vaccination should occur immediately after exposure.

The survey revealed strong awareness of rabies and its transmission, especially regarding dogs as the primary affected species. However, there is a significant lack of knowledge about post-exposure prophylaxis and vaccination timing after exposure. This underscores the need for enhanced community education and outreach on rabies prevention and treatment.

**Table 2:** Knowledge of respondents regarding Rabies in Wondo Genet District

| No. | Variables                                    | Category                       | Frequency  | Percent       |
|-----|----------------------------------------------|--------------------------------|------------|---------------|
| 1   | Heard of rabies                              | Yes                            | 397        | 98.6%         |
|     |                                              | No                             | 6          | 1.4%          |
|     |                                              | <b>Total</b>                   | <b>403</b> | <b>100.0%</b> |
| 2   | More Affected animal                         | Dogs                           | 195        | 48.4%         |
|     |                                              | Cats                           | 95         | 23.6%         |
|     |                                              | Cattle                         | 36         | 8.9%          |
|     |                                              | Donkeys                        | 10         | 2.5%          |
|     |                                              | Horses                         | 6          | 1.5%          |
|     |                                              | Human                          | 55         | 13.7%         |
|     |                                              | <b>Total</b>                   | <b>397</b> | <b>98.6%</b>  |
| 3   | Cause of rabies                              | Virus                          | 190        | 47.1%         |
|     |                                              | Bacteria                       | 86         | 23.8%         |
|     |                                              | Protozoa                       | 37         | 9.3%          |
|     |                                              | Other                          | 17         | 4.1%          |
|     |                                              | I don't know                   | 57         | 14.2%         |
|     |                                              | <b>Total</b>                   | <b>403</b> | <b>100.0%</b> |
| 4   | Knowledge of transmission between animals    | Yes                            | 332        | 82.5%         |
|     |                                              | No                             | 65         | 16.2%         |
|     |                                              | <b>Total</b>                   | <b>397</b> | <b>100.0%</b> |
| 4.1 | Transmission method between animals (if yes) | Biting                         | 200        | 49.6%         |
|     |                                              | Contact with saliva only       | 17         | 4.1%          |
|     |                                              | Both biting & saliva contact   | 109        | 27.1%         |
|     |                                              | ingestion of infected meat     | 6          | 1.6%          |
|     |                                              | <b>Total</b>                   | <b>332</b> | <b>82.5%</b>  |
| 5   | Signs of rabid animal                        | Stops Eating and Drinking      | 62         | 15.3%         |
|     |                                              | Biting & Change in Behavior    | 102        | 25.2%         |
|     |                                              | Paralysis                      | 11         | 2.7%          |
|     |                                              | Salivation                     | 24         | 6.0%          |
|     |                                              | Fear of Water                  | 24         | 6.0%          |
|     |                                              | All                            | 223        | 43.3%         |
| 6   | Can rabies kill animals                      | <b>Total</b>                   | <b>397</b> | <b>98.6%</b>  |
|     |                                              | Yes                            | 370        | 91.8%         |
|     |                                              | No                             | 27         | 6.8%          |
| 7   | Zoonotic nature                              | <b>Total</b>                   | <b>397</b> | <b>100.0%</b> |
|     |                                              | Yes                            | 346        | 85.8%         |
|     |                                              | No                             | 51         | 12.9%         |
| 7.1 | Transmission method (if yes)                 | <b>Total</b>                   | <b>397</b> | <b>100.0%</b> |
|     |                                              | Biting                         | 187        | 46.3%         |
|     |                                              | Contact with saliva only       | 17         | 4.1%          |
|     |                                              | Both biting and saliva contact | 126        | 31.2%         |
|     |                                              | ingestion of infected meat     | 17         | 4.1%          |
| 8   | At-risk age groups                           | <b>Total</b>                   | <b>346</b> | <b>85.8%</b>  |
|     |                                              | Children                       | 201        | 49.9%         |
|     |                                              | Adults                         | 35         | 8.8%          |
|     |                                              | Elderly                        | 62         | 15.3%         |
|     |                                              | All age groups                 | 99         | 24.7%         |
| 9   | Awareness of post-exposure prophylaxis       | <b>Total</b>                   | <b>397</b> | <b>98.6%</b>  |
|     |                                              | Yes                            | 112        | 27.9%         |
|     |                                              | No                             | 285        | 70.7%         |
| 9.1 | Timing of Vaccine (if yes)                   | <b>Total</b>                   | <b>397</b> | <b>100.0%</b> |
|     |                                              | Immediately                    | 93         | 23.2%         |
|     |                                              | Any time                       | 19         | 4.7%          |
|     |                                              | <b>Total</b>                   | <b>112</b> | <b>27.9%</b>  |

### 3.3 Attitudes of Respondents toward Rabies

The survey results indicate that rabies is viewed as a significant concern in the community, with 68.5% of respondents describing it as “very serious” and only 1.9% considering it “not serious”. There is also a high proportion in the importance of community awareness programs about rabies, as 73.4% rated these initiatives as

“very important”. Regarding the transmission of rabies, the majority (67.4%) strongly agree that only dogs can transmit the disease to humans, although this view reflects a potential misunderstanding, given that other animals can also be carriers. When questioned about the effectiveness of rabies vaccination for dogs, an

overwhelming 89.5% either agreed or strongly agreed. Finally, the consensus on post-bite treatment is positive, with 50.7% strongly agreeing and 38.9% agreeing that dog bite wounds should be washed with soap and alcohol. Overall, the

data reflect a high level of concern about rabies, as well as support for vaccination and appropriate response to bites, suggesting a proactive approach in the community regarding this public health issue.

**Table 3:** Attitudes of respondents regarding Rabies Disease in Wondo Genet District

| No. | Variables                                 | Category           | Frequency  | Percent      |
|-----|-------------------------------------------|--------------------|------------|--------------|
| 1   | Seriousness of Rabies in Community        | Very serious       | 276        | 68.5%        |
|     |                                           | Somewhat serious   | 65         | 16.2%        |
|     |                                           | Not serious        | 8          | 1.9%         |
|     |                                           | I don't know       | 49         | 12.1%        |
|     |                                           | <b>Total</b>       | <b>397</b> | <b>98.6%</b> |
| 2   | Importance of Awareness Programs          | Very important     | 296        | 73.4%        |
|     |                                           | Somewhat important | 67         | 16.7%        |
|     |                                           | Not important      | 24         | 6.0%         |
|     |                                           | I don't know       | 10         | 2.5%         |
|     |                                           | <b>Total</b>       | <b>397</b> | <b>98.6%</b> |
| 3   | Belief about Transmission by Dogs         | Strongly disagree  | 4          | 1.1%         |
|     |                                           | Disagree           | 12         | 3.0%         |
|     |                                           | Undecided          | 20         | 4.9%         |
|     |                                           | Agree              | 89         | 22.2%        |
|     |                                           | Strongly agree     | 272        | 67.4%        |
|     |                                           | <b>Total</b>       | <b>397</b> | <b>98.6%</b> |
| 4   | Belief about Effectiveness of Vaccination | Strongly disagree  | 4          | 1.1%         |
|     |                                           | Disagree           | 17         | 4.1%         |
|     |                                           | Undecided          | 16         | 3.9%         |
|     |                                           | Agree              | 142        | 35.3%        |
|     |                                           | Strongly agree     | 218        | 54.2%        |
|     |                                           | <b>Total</b>       | <b>397</b> | <b>98.6%</b> |
| 5   | Advise on Washing Dog Bite Wounds         | Strongly disagree  | 4          | 1.1%         |
|     |                                           | Disagree           | 20         | 4.9%         |
|     |                                           | Undecided          | 12         | 3.0%         |
|     |                                           | Agree              | 157        | 38.9%        |
|     |                                           | Strongly agree     | 204        | 50.7%        |
|     |                                           | <b>Total</b>       | <b>397</b> | <b>98.6%</b> |

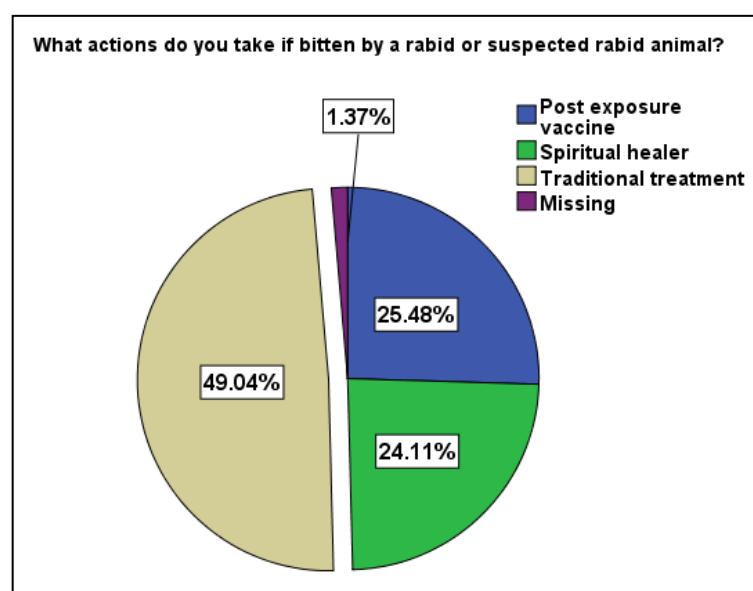
### 3.4 Practices of Respondents related to Rabies

Rabies prevention practices in the Wondo Genet District demonstrate a proactive attitude among respondents. A significant majority (80.8%) vaccinate their pets against rabies, with nearly half (49.6%) doing so biennially. However, only 17.8% maintain vaccination records, highlighting a gap in tracking. In cases of bites from potentially rabid animals, half (49.0%) would seek post-exposure vaccinations, while 34.2% would opt for traditional treatments, and 15.3% would consult spiritual healers. Most respondents (72.9%) have taken someone to the hospital after a stray dog or cat bite. Regarding suspected rabid animals, 44.4%

would choose to kill them, and 27.7% would notify the authorities, reflecting a communal mindset. Vaccination is recognized as the primary preventive measure (64.1%), signaling its importance in rabies control. However, public awareness and animal birth control are seen as lower priorities, indicating areas for improvement in community education and resource allocation (Table 4). Overall, the findings suggest a community that values vaccination but could benefit from better awareness and record-keeping practices.

**Table 4:** Practices of respondents related to Rabies Disease in Wondo Genet District

| No. | Variables                                   | Category                     | Frequency  | Percent      |
|-----|---------------------------------------------|------------------------------|------------|--------------|
| 1   | Vaccination of Pets                         | Yes                          | 325        | 80.8%        |
|     |                                             | No                           | 72         | 17.8%        |
|     |                                             | <b>Total</b>                 | <b>397</b> | <b>98.6%</b> |
| 1.1 | Frequency of Vaccination (if Yes)           | Every two years              | 199        | 49.6%        |
|     |                                             | Every year                   | 84         | 20.8%        |
|     |                                             | Every three years            | 42         | 10.4%        |
|     |                                             | <b>Total</b>                 | <b>325</b> | <b>80.8%</b> |
| 2   | Keeping Records of Vaccination              | Yes                          | 72         | 17.8%        |
|     |                                             | No                           | 325        | 80.8%        |
|     |                                             | <b>Total</b>                 | <b>397</b> | <b>98.6%</b> |
| 3   | Actions Taken if Bitten by Rabid Animal     | Post exposure vaccine        | 103        | 25.5%        |
|     |                                             | Spiritual healer             | 97         | 24.1%        |
|     |                                             | Traditional treatment        | 197        | 49.0%        |
|     |                                             | <b>Total</b>                 | <b>397</b> | <b>98.6%</b> |
| 4   | Hospital Visits for Stray Dog/Cat Scratches | Yes                          | 294        | 72.9%        |
|     |                                             | No                           | 103        | 25.8%        |
|     |                                             | <b>Total</b>                 | <b>397</b> | <b>98.6%</b> |
| 5   | Actions with Presumed Rabid Animal          | Kill                         | 178        | 44.4%        |
|     |                                             | Tie/cage                     | 8          | 1.9%         |
|     |                                             | Treat                        | 72         | 19.7%        |
|     |                                             | inform concerned authorities | 112        | 27.7%        |
|     |                                             | I do nothing                 | 20         | 4.9%         |
|     |                                             | <b>Total</b>                 | <b>397</b> | <b>98.6%</b> |
| 6   | Measures for Control and Prevention         | Public awareness             | 65         | 16.2%        |
|     |                                             | Animal birth control         | 15         | 3.6%         |
|     |                                             | Killing stray dogs           | 50         | 12.6%        |
|     |                                             | Vaccination                  | 258        | 64.1%        |
|     |                                             | I don't know                 | 9          | 2.2%         |
|     |                                             | <b>Total</b>                 | <b>397</b> | <b>98.6%</b> |

**Figure 1:** Action taken if a person bitten by a rabid or suspected animal

## 4 Discussion

The survey study revealed a commendable awareness of rabies within the Wondo Genet district, with a striking 98.6% of respondents recognizing the disease and identifying dogs as the primary affected species. This was in agreement with the findings of Adem *et al.* (2024) from East Hararghe who reported 92.7% and Ejeta

and Pal (2024) from Meta Robi district of Oromia region who reported 100%. This indicates a strong foundation for rabies prevention efforts, as awareness is the first step toward effective disease control. On the other hand, lower results of 53, 56.1, 61.3, and 64.1% were reported from residents of Amhara region, and communities of Bahir Dar City and Kombolcha town, respectively (Guadu *et*

*al.*, 2014; Addis *et al.*, 2019; Hagos *et al.*, 2020; Adem *et al.*, 2024). The fact that the majority of the study's participants in the current study area resided in urban areas, where information sources and levels of education might exceed, might be the cause of the study's higher scores.

Among the respondents, 47.1% understood that rabies could be caused by a virus. This finding was comparable with the findings of Fisseha and Kidanemariam (2020) 51.6% from Tigray; but lower than the reports of Ejeta and Pal (2024) from Meta Robi district of Oromia region (64%), Abdela *et al.* (2017) from Dedo district of Jimma zone (60%), and Abdela and Teshome (2017) from Munisa district of Arisi zone (67.3%). However, it was higher than the report of Adem *et al.* (2024) from East Hararghe who reported 26.8%. The differences among the results obtained from the different studies might be attributed to information access and educational levels of the participants in different locations.

Majority of respondents (82.5%) were aware of the modes of transmission, such as biting and saliva contact. It was in line with the report of Adem *et al.* (2024) (74.7%), but higher than the reports from Debre Tabor (57.8%) (Alie *et al.*, 2015) and Bahir Dar City (21.4%) (Guadu *et al.*, 2014). However, the 14.2% who are unsure about the virus's nature suggests an area where targeted education could bolster overall community knowledge. This is particularly important given that a substantial portion also demonstrated an understanding of how rabies is transmitted, highlighting a clear need to reinforce accurate information regarding the disease and its origins.

The result of the present study revealed that rabies is an important disease of both humans and animals in the study area. This suggest that respondents were aware of the occurrence and zoonotic importance of rabies in the area (85.8%). This study is in line with the study conducted in Tigray by Fisseha and Kidanemariam (2020) with 85%, and in East Hararghe by Adem *et al.* (2024) with 86%. The current finding is however, higher than the result of studies on the assessment of community KAP from Gondar (Serebe *et al.*, 2014), Bahir Dar (Guadu *et al.*, 2014), and New Delhi (Lal *et al.*, 2005) reported that 46.8%, 45%, and 52.2% of respondents, respectively. Despite the strong awareness and concern about rabies-which 68.5% of respondents rated as "very serious" significant gaps persist in knowledge about post-exposure prophylaxis (PEP). With only 27.9% aware of PEP, this poses a critical public health issue, as timely

and appropriate treatment after potential exposure is vital to prevent the disease. Additionally, the misconception that only dogs can transmit rabies (held by 67.4% of respondents) reflects a potentially dangerous gap in understanding, which could lead to increased risk if other animal vectors are not recognized. The community's perception of children as the most at-risk group emphasizes the need for educational initiatives targeted toward parents and caregivers to further protect vulnerable populations.

The survey also revealed proactive behaviors regarding rabies prevention practices among respondents, as evidenced by the 80.8% who vaccinate their pets-half doing so biennially. However, the low percentage (17.8%) maintaining vaccination records signals a need for improvement in tracking pet vaccinations, which is crucial for ensuring adequate protection. Additionally, the diverse approaches to managing potential rabies exposures, including reliance on traditional treatments and spiritual healers by significant portions of the population, highlights the importance of culturally sensitive educational interventions. While a commendable belief in the effectiveness of vaccination exists (89.5% agreeing), enhancing awareness of the timing for vaccinations and the correct response to bites can significantly strengthen rabies control efforts in the community. Overall, these findings indicate a well-informed community with strong proactive attitudes but also reflect critical areas where education and resources can be focused for improved rabies prevention and management.

## 5 Conclusion and Recommendations

The survey findings reveal a predominantly well-informed community in the Wondo Genet District regarding rabies, characterized by a high level of awareness of the disease and its primary transmission methods. With 98.6% of respondents recognizing rabies and a significant emphasis on dogs as the most affected species, it is evident that there is a foundational understanding of the disease's impact. However, critical gaps remain, particularly concerning post-exposure prophylaxis and the timing of vaccinations after potential exposure, where less than 30% of respondents demonstrated awareness. The survey indicated that there was a communal commitment to rabies control, as seen in the willingness to respond appropriately to dog bites. Nevertheless, the fact that only few maintain vaccination records suggests an area for improvement that could

enhance the monitoring and effectiveness of rabies prevention efforts. The reliance on traditional and spiritual treatment options, along with a notable percentage who would kill suspected rabid animals, highlights the complexities of cultural beliefs and practices that can influence rabies management strategies.

Based on the findings of the study, the following recommendations can enhance rabies prevention and management in the Wondo Genet district:

- Developing targeted educational programs for the community to clarify misconceptions about rabies transmission, emphasizing that various animals, not just dogs, can be carriers.
- Focusing on increasing awareness about post-exposure prophylaxis (PEP), including when and how to seek treatment after bites. Training community health workers to disseminate this information could be particularly effective.
- Providing clear guidelines on the recommended vaccination schedule not just for pets but also regarding human PEP after potential rabies exposure.
- Encourage pet owners to maintain vaccination records by providing accessible tools or templates for tracking vaccinations.
- Implement a centralized database at local health facilities to track pet vaccinations and rabies exposure cases, ensuring better data collection and follow-up.
- Policy actions are crucial to integrate rabies education into primary healthcare programs.

## References:

- Abdela, N., & Teshome, E., (2017). Community based cross-sectional study on knowledge, attitudes and practices towards rabies in Munesa District, Arsi Zone, Southeastern Ethiopia. *Journal of Public Health and Epidemiology*, 9(6), 161-170. [CrossRef]
- Abdela, N., Midekso, B., Jabir, J., & Abdela, W., (2017). Knowledge, attitudes and practices towards rabies in Dedo district of Jimma zone, southwestern Ethiopia: A community based cross-sectional study. *International Journal of Medicine and Medical Sciences*, 9(5), 61-71. [CrossRef]
- Adem, F., Bitew, A.B., Adugna, T., & Abey, S.L., (2024). Assessment of community knowledge, attitude, and practice towards rabies and its determinants in Kersa District, East Hararghe Zone, Oromia Region, Ethiopia. *Ethiopian Veterinary Journal*, 28(1), 15-35. [CrossRef]
- Aklilu, M., Tadele, W., Alemu, A., Abdela, S., Getahun, G., Hailemariam, A., et al., (2021). Situation of rabies in Ethiopia: A five-year retrospective study of human rabies in Addis Ababa and the surrounding regions. *J. Trop. Med.*, 2021, 1-7. [CrossRef]
- Alie, A., Assefa, A., Derso, S., & Ayele, B., (2015). Assessment of knowledge, attitude and practice on rabies in and around Debretabor, South Gondar, Northwest Ethiopia. *Int J Basic Appl Virol*, 4(1), 28-34.
- Awoke A, Ashenafi A, Samuel D., & Birhanu A. (2015). Assessment of Knowledge, Attitude and Practice on Rabies in and Around Debretabor, South Gondar, Northwest Ethiopia. *International Journal of Basic and Applied Virology*, 4(1), 28-34, 2015.
- CDC, (2017). Rabies in Ethiopia: World Rabies Day. Centers for Disease Control and Prevention (CDC). <https://www.cdc.gov/worldrabiesday/ethiopia.html>
- Deressa, A., Ali, A., Beyene, M., Selassie, B. N., Yimer, E., & Hussen, K., (2010). The status of rabies in Ethiopia: A retrospective record review. *Ethiop. J. Health Dev.*, 24(2), 127-132. [CrossRef]
- Ejeta, I., & Pal, M., (2024). Assessment of knowledge, attitude and practices of community towards rabies in meta robi district, oromia region, central Ethiopia. *J Bio Med Open Access*, 4(1), 133.
- Guadu, T., Shite, A., Chanie, M., Bogale, B., & Fentahun, T., (2014). Assessment of knowledge, attitude and practices about rabies and associated factors: in the case of Bahir Dar town. *Global Veterinaria*, 13(3), 348-54.
- Hagos, W.G., Muchie, K.F., Gebru, G.G., Mezgebe, G.G., Reda, K.A. & Dachew, B.A., (2020). Assessment of knowledge, attitude and practice towards rabies and associated factors among household heads in Mekelle city, Ethiopia. *BMC public health*, 20 (1), 57. [CrossRef]
- Jemberu, W. T., Molla, W., Almaw, G., & Alemu, S., (2013). Incidence of rabies in humans and domestic animals and people's awareness in North Gondar Zone, Ethiopia. *PLoS Negl. Trop. Dis.*, 7(5), 1-6. [CrossRef]
- Lal, P., Rawat, A., Sagar, A., & Tiwari, K.N., (2005). Prevalence of dog-bites in Delhi: knowledge and practices of residents regarding prevention and control of rabies.
- Rinchen, S., Tenzin, T., Hall, D., van der Meer, F., Sharma, B., Dukpa, K., & Cork, S., (2019). A community-based knowledge, attitude, and practice survey on rabies among cattle owners in selected areas of Bhutan. *PLoS neglected tropical diseases*, 13(4), e0007305. [CrossRef]
- Serebe, S.G., Tadesse, K.A., Yizengaw, H.A. & Tamrat, S.M., (2014). Study on community knowledge, attitude and practice of rabies in and nearby Gondar town, North West Ethiopia. *Journal of Public Health and Epidemiology*, 6(12), 429-435.

- Swedberg, C., Bote, K., Gamble, L., Fénelon, N., King, A. & Wallace, R.M., (2024). Eliminating invisible deaths: the woeful state of global rabies data and its impact on progress towards 2030 sustainable development goals for neglected tropical diseases. *Frontiers in tropical diseases*, 5, 1303359. [CrossRef]
- Tasew, W. & Abayneh, H., (2017). Practices and challeges of domestic biogas technology use: The Case of, Wondogenet District and Hawassa City Administration, Sidama Zone, Southern Ethiopia, Ethiopia. *J Resourc Dev Manag*, 37, 7-17.
- Tayebwa, D.S., Rashid, N.K., Eneku, W., Ssekandi, C., Kyabarongo, A., Mutesasira, J., Komugisha, M., Atim, S.A., Kateregga, J., Muhangi, D. & Tweyongyere, R., (2025). Exploration of circumstances surrounding bites from potentially rabid dogs on rampage, and the coping strategies of victims and communities in Central Uganda. *Journal of Veterinary Behavior*, 77, 11-18.
- Thrusfield, M., (2018). *Veterinary Epidemiology*. In (4th ed.). Oxford, UK.: Blackwell Publishing company, Oxford, UK.
- Wario, E., Tehetna, A., & Zewdie, W., (2018). Assessment of community awareness on common zoonotic disease in and around Yabello district of Oromia Regional State, Ethiopia. *Multidis. Adv. Vet. Sci.*, 2(4), 388-394.
- WHO. (2006). *First report of expert the WHO consultation on rabies technical series no; 79*. Geneva, Switzerland.
- WHO. (2013). *WHO Expert Consultation on Rabies, second report*. World Health Organization (WHO). <https://apps.who.int/iris/handle/10665/85346>.
- WHO, FAO, & WOAH, (2018). *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) <https://www.who.int/publications/i/item/9789241513838>.
- WHO. (2023). *Neglected tropical diseases*. World Health Organization (WHO). [https://www.who.int/health-topics/neglected-tropical-diseases#tab=tab\\_1](https://www.who.int/health-topics/neglected-tropical-diseases#tab=tab_1).
- WOAH, (2017). *Protecting animals, preserving our future*. World Organization for Animal Health (WOAH). Paris, France. [www.woah.org/en/discoverthe-2017-oie-annual-report/](http://www.woah.org/en/discoverthe-2017-oie-annual-report/).
- WOAH, (2019). *Protecting animals, preserving our future. OIE - Terrestrial Animal Health Code 2019*. World Organization for Animal Health (WOAH). Paris, France Pp. 107-126
- WOAH, (2022). *Rabies. One Health, Zero Deaths*. Africa Rabies Webinar (World Rabies Day). World Organization for Animal Health (WOAH). Paris, France. Retrieved from <https://www.woah.org/en>
- Yimer, E., Newayeselassie, B., Teferra, G., Mekonnen, Y., Bogale, Y., Zewde, B., et al., (2002). Situation of rabies in Ethiopia: A retrospective study 1990-2000. *Ethiop. J. Health Dev.*, 16 (1), 1-9.