ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF PUBLIC HEALTH

Facilitators and Barriers of Healthcare Seeking Behavior for Cutaneous Leishmaniasis and Leprosy in Kallu District of South Wollo, Amhara Region, Ethiopia

By:

Wagari Tafese (DVM)

Thesis Submitted to the Graduate Program of Addis Ababa University, College of Health Sciences, School of Public Health in Partial Fulfillment for the degree of Masters of Public Health in Health Education and Promotion specialty

November 2023

Addis Ababa, Ethiopia

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Table of Contents

Contents

List of T ables

List of Figures

List of Acronyms and Abbreviations

AHRI: Armauer Hansen Research Institute

BMH: Borumeda Hospital

CL: Cutaneous Leishmaniasis

MDA: Mass Drug Administration

FGD: Focus Group Discussion

GBD: Global Burden of Disease

G2D: Grade two disability

IDI: In-depth Interview

KII: Key-informant Interview

LMICs: low- and Middle-income countries

NTD: Neglected Tropical Disease

RIGHT: Research and Innovation for Global Health Transformation

SHARP: Skin Health Africa Research Programme

SNNPR: Southern Nations, Nationalities and Peoples Region

SSA: Sub-Saharan Africa

WHO: World Health Organization

Abstract

Background: Leprosy and cutaneous leishmaniasis (CL) are preventable and treatable neglected tropical diseases (NTDs) that disproportionately affect impoverished populations in Ethiopia. Despite the availability of treatments, delays in healthcare seeking remain a challenge, hindering timely diagnosis and treatment and contributing to the persistence of these NTDs. Understanding the facilitators and barriers to healthcare-seeking behaviour is crucial for designing effective interventions to improve disease management and control.

Objective: This study aims to assess the facilitators and barriers to healthcare seeking behavior for cutaneous leishmaniasis and leprosy among community members in Kallu district, South Wollo, Amhara region, Ethiopia.

Method: This study employed an exploratory mixed-methods design. A quantitative study involving 602 participants was conducted using structured interviewer-administered questionnaires among community members, who were selected using multicluster sampling. Additionally, a qualitative study was carried out with 17 participants, including leprosy patients, cutaneous leishmaniasis patients, and key informant health professionals, who were recruited via criterion-purposive sampling. The quantitative data was collected electronically and analyzed using SPSS version 26 statistical software. Descriptive statistics, including frequencies, mean, and standard deviation, were employed to summarize the quantitative data. For the qualitative data, thematic analysis was conducted using MAXQDA 2022

Results The study found that about543 (90%) and518 (86%) of participants had heard or seen leprosy and cutaneous leishmaniasis (CL), respectively. In the past six months, 33 (6%) and45 (8.5%) of households experienced leprosy and CL, respectively. Eventhough they diagnosed late afer disabilities occurs, among those who experienced leprosy, 31(94%) sought treatment from health facilities, compared to only 6(13%) of those who experienced CL. The qualitative analysis explored several facilitators, such as the perceived severity of leprosy and CL, the societal emphasis on skin aesthetics, as well as family and social support, Additionally, access to free drug and services, community education initiatives, and a pathway through health extension workers (HEW) were identified as facilitators, Conversely, barriers to healthcare seeking in the community included limited knowledge, financial constraints, reliance on traditional treatments, geographical and logistical challenges, drug shortages, and prolonged waiting times.

Conclusion: To minimize delays in healthcare seeking for leprosy and cutaneous leishmaniasis, it is crucial to tackle the barriers identified at the individual, community, and health facility levels in this study. These barriers include lack of awareness, financial constraints, and unavailability of drugs and services. Moreover, it is essential to leverage the facilitators of healthcare seeking, such as community education iniiattives, free drug and service and social and family support.
Key words: ***facilitators, barrier, healthcare seeking, cutaneous leishmaniasis, leprosy, Kallu district.***

1. INTRODUCTION

1.1. Background of the study

All neglected tropical diseases (NTDs) are curable to varying degrees and can be prevented; however, they are frequently reported, identified, and treated too late, by which point they have caused chronic illnesses and disabilities(1). Among several neglected diseases, leprosy and leishmaniasis are prevalent in different regions, potentially exposing millions of people to infection (2) Whereas as Healthcare seeking behavior is defined as any action undertaken by individuals who believe they have a health problem or are unwell, with the goal of finding an appropriate remedy (3). This pursuit of remedy is guided by a decision-making process influenced by individual and/or household behavior, community norms, expectations, and provider-related characteristics. For this reason, the process of care seeking is not homogenous and depends on cognitive and non-cognitive factors that call for a contextual analysis of care seeking behavior (4)

Healthcare seeking behavior can be studied from different perspectives, one of which is investigating the barriers and facilitators that exist between the patient and the health service(5). This is influenced by several factors like socio-economic issues that range from affordability, quality of care and ease of access to cultural perceptions(6,7). In addition to that, the Healthcare seeking behavior is also affected by the individual demographics; which include sex, age, the level of education attained and the perception they have about their illness(8).

According to the World Health Organization (WHO), 16 of the 22 common NTDs are endemic Ethiopia, which has the third-highest prevalence of NTD cases in Africa. Skin NTDs are not given as much attention as other diseases in Ethiopia, despite the fact that they are still one of the main sources of morbidity in the community (9) and are prevalent in rural, poor, and remote communities with less access to the healthcare system and fewer specialized health organizations and programs (10).

Neglected tropical diseases, such as cutaneous leishmaniasis (CL), and leprosy are presently receiving significant national attention in Ethiopia. Consequently, the Third National NTD Program Strategic Plan is targeting the control of cutaneous leishmaniasis and irradicaion of

Leprosy by 2030. This involves expanding diagnostic and treatment facilities, enhancing case detection, and improving treatment services(11).

Now days there are facilitators and barriers to seeking healthcare seeking for some neglected tropical diseases. These facilitators and barriers could be in households and the health system. The availability of some free drugs for certain NTDs, volunteers as rural health workers, funder interest in diseases with specific outcomes, and detailed NTD master plans with specific actionable integrated activities are among the facilitators for healthcare seeking. While confusion in the NTD knowledge base, transportation, accommodation, and decision-making related to women in rural areas are the barriers to healthcare seeking with regard to neglected tropical diseases(12)

Healthcare policies and programs' planning requires knowledge about healthcare seeking behavior for early diagnosis, effective treatment, and appropriate intervention implementation(13). For patients with NTDs, this includes accurate diagnosis and quality treatment before disability occurs (where possible), ongoing care related to any disability (where needed), psychological support, and interventions aimed at reducing stigma and delay in in health seeking as part of holistic care for people affected(14).

Delays in seeking healthcare, stigma associated with skin NTDs, and seeking traditional medicine for treatment are some of the Skin Health Africa Research Programme (SHARP) formative assessment results. Despite the fact that these studies show delay in healthcare seeking it do not investigate what was the barriers and facilitators to health-seeking behavior Thus, the main aim of this study was to investigate facilitators and barriers to healthcare seeking in Kallu district, South Wollo, and the Amhara region, where cutaneous lesions and leprosy were endemic(15)

1.2. Statement of the problem

Nearly one-third of the world's population suffers from disorders that directly affect the skin, making them the fourth most common cause of all human disease(7), and most skin NTDs require management of complications as well as disability prevention as part of their overall care plan if the diagnosis is delayed(10) The majority of neglected tropical diseases (NTDs) have established primary skin manifestations or associated clinical features. Visual changes to the skin

and other body parts, incorrect assumptions about causality, and difficulties with self-management of conditions can all lead to social exclusion of individuals and their relatives(15).

Despite the attainment of WHO's leprosy elimination target (less than one case per 10,000 population) at national level in 1999(16), Ethiopia is among the countries in sub-Saharan Africa reporting the highest number of new leprosy cases with grade two disability (G2D) with 3218 new cases reported in 2018, of which 256 had G2D .

The Amhara region has the second highest burden of leprosy, after Oromia (17) and Leprosy and cutaneous leishmanisis were the two common endemic skin neglected tropical diseases in Kallu district, where delays in seeking healthcare, stigma associated with skin NTDs, and seeking traditional medicine for treatment were some of the SHARP formative assessment results regarding these diseases(15)

According to a study done at Borumeda Hospital on Looking for NTDs in the Skin, an entry door for offering patient-centered holistic care, the overall prevalence of skin diseases is 17.2% of skin NTDs, cutaneous leishmaniasis, leprosy and scabies were the most common (16). Currently, the incidence of CL is growing and is projected to grow more in the future due to factors related to poverty and its various manifestations, including climatic and environmental changes, drug resistance, exodus because of conflicts, and immunodeficiency, particularly due to HIV/AIDS (18).

There is also a study that shows the overall prevalence of CL among patients who visited the BMH Dermatology Department from 2012 to May 2018 was 1.5%(18), which is relatively low regardless of the of the endemic of the area. Thus, the aim of this study is to explore facilitators and barriers to healthcare seeking for skin NTDs, specifically cutaneous leishmaniasis and leprosy problems, among residents of Kallu district, South Wollo, and Amhara Region and the findings of this research will help planners and program managers to plan evidence-based strategies to improve health seeking behavior for skin cutaneous leishmaniasis and leprosy disease. Additionally, understanding the facilitators and barriers for health seeking behavior for skin health problems can help to consider how to improve the existing service provision and mobilize resources to integrate with other activities by eliminating the barriers and bridging the gap.

1.3. Significance of the study

Skin Neglected Tropical Diseases (NTDs), such as cutaneous leishmaniasis and leprosy; present a pressing public health challenge in the Kallu district of South Wollo Zone. These diseases contribute to substantial morbidity, disability, and social stigma, underscoring the urgency of addressing them effectively. While formative assessments of SHARP Project have identified issues like healthcare-seeking delays, stigma, and the utilization of traditional remedies for these NTDs, a crucial research gap remains: a deeper exploration of the underlying facilitators and barriers to healthcare seeking in the community.

The findings of this research will help planners and program managers to plan evidence-based strategies to improve healthcare seeking practice for skin NTDs, particularly leprosy and CL. Additionally, understanding the facilitators and barriers for healthcare seeking practice for skin health problems can help to consider how to improve the existing service provision and mobilize resources to integrate with other activities by eliminating the barriers and bridging the gap. This will contribute significantly to improving the quality of life and thereby reducing the burden of skin diseases. Furthermore, the study may generate data in the study area for researchers to investigate further empirical evidence to assess healthcare seeking practice for skin health problems.

2. LITERATURE REVIEW

2.1 Health seeking behaviors

Healthcare seeking behavior is defined as any action undertaken by individuals who believe they have a health problem or are unwell, with the goal of finding an appropriate remedy (3). Healthcare-seeking behavior is influenced by factors such as the availability, quality, and price of services, in addition to social group affiliations, health perspectives, residential locations, and personal characteristics of the individuals seeking care (19).

The health-seeking behavior of a community plays a pivotal role in shaping how health services are utilized, consequently impacting the overall health outcomes of populations (20). Factors that determine health behavior may be physical, socio-economic, cultural or political(21). Certainly, the utilization of a healthcare system is intricately linked to various factors, including educational levels, economic considerations, cultural beliefs and practices. Additionally, environmental conditions, socio-demographic factors, knowledge about available facilities, gender issues, political environment, and the structure of the healthcare system itself all contribute to shaping how individuals engage with and access healthcare services(22).

2.2. Health seeking behaviors related neglected tropical Diseases

All neglected tropical diseases (NTDs) are, to varying degrees, curable and preventable(23). However, they often go unreported, undetected, and untreated until late stages, leading to chronic illnesses and disabilities(1). Seeking healthcare for NTDs is influenced by various factors, including personal considerations, socio-cultural factors, and economic constraints(24). Indeed, it is crucial to identify barriers along the patient pathway to facilitate early recognition of needs, healthcare seeking, accessibility, payment, and engagement with available services. Furthermore, health systems should possess the capability to provide services that are approachable, acceptable, available, accommodating of patient needs, affordable, and appropriate for each individual. In the case of individuals with (NTDs), this involves ensuring accurate diagnosis and quality treatment before the onset of disabilities (where possible), along with ongoing care addressing any existing disabilities(1).

Health-seeking behavior is indeed a complex issue, often shaped by a intricate interplay of social, cultural, historical, and economic variables that contribute to specific mindsets. Factors

such as a lack of awareness regarding general health issues, limited knowledge about leprosy, socioeconomic constraints, and challenges related to the availability and accessibility of health services, along with the pervasive stigmatization in the general population, can collectively act as deterrents. These barriers may impede individuals from seeking help and hinder the progression towards achieving successful package delivery and comprehensive equity, particularly in regions and localities with the greatest need (25).

2.3 Facilitators and Barriers to healthcare seeking

2.3.1Ability to perceive the need of healthcare

The capability to perceive revolves around elements influencing an individual's understanding of the need to pursue healthcare, including factors like health literacy and personal beliefs. (9). Low knowledge/awareness of diseases and limited perception of severity led to delays in health-seeking, holding correct health knowledge about an illness, including perception of severity, play an important role in care-seeking (10). Illness was endured when regarded as minor, prompting individuals to seek care from herbalists only when symptoms became severe or significantly impacted their daily activities, while those with ulcers were more inclined to utilize government facilities and consult private health practitioners for pain relief. (11).

2.3.2. The Influence of Health Beliefs on Seeking Healthcare

Widespread supernatural beliefs exist regarding the origin and causation of certain skin Neglected Tropical Diseases (NTDs)(12) Supernatural explanations encompass terms such as 'spiritually inflicted illness,' 'evil spirits,' 'witchcraft,' 'consequences of punishment for bad deeds,' 'God's will,' 'sorcery,' and 'superstition.' Addressing the underlying spiritual causes may be deemed essential, even when biomedical care is concurrently sought (1).

In cases where patients attribute their illness to personal fault or as a manifestation of God's will, there were reports of delayed care-seeking. Patient trust and expectations in the healthcare system are shaped by overall awareness of available services, past experiences with seeking treatment within the system, and the historical context of the local community (13).

2.3.3. The capacity to pursue healthcare services.

The ability to seek care is intertwined with the autonomy to decide to seek care and awareness of available care options. In certain contexts, active engagement with various community members

is crucial, especially considering patriarchal dynamics in household decision-making regarding care-seeking. Factors such as gender play a significant role, where women may be required to obtain permission from a husband or male guardian before seeking care (14)

A preference often exists to discuss care-seeking and treatment decisions with family and friends, with parents notably influencing care-seeking behavior among young adults. Stigma, and the fear of being stigmatized, can significantly impact patient care-seeking for Neglected Tropical Diseases (NTDs) and other illnesses, particularly among women(26). Various social factors, including ethnicity, caste, and socio-economic status, contribute to the creation of social stigma for individuals affected by leprosy. This underscores how a combination of social and contextual elements, in addition to the nature of the disease itself, collectively shapes the social construct of stigma (15).

2.4 Health facility related facilitators and barrier to healthcare seeking.

Barriers to health services are observable at various levels. Concerning vulnerable areas, research has recorded financial barriers associated with the availability of health insurance, structural barriers primarily linked to service accessibility and availability, and additional barriers evident in the attitudes and discriminatory practices of healthcare professionals (5). The capacity to access healthcare is tied to factors such as mobility, the presence of appropriate transportation, and the flexibility of one's occupation, which collectively enable an individual to physically reach a healthcare provider(27). Geographic distance and transportation costs can pose significant barriers for patients, either due to financial constraints or challenges arising from the physical aspects of their condition. This is especially pertinent when patients are required to make repeated visits for the management of SSSDs (26).

2.4.1 Availability and Accommodation

Availability and accommodation in health services pertain to the physical presence of healthcare facilities and their capacity to provide adequate care. (27). Compassion among health workers is crucial, as patients may opt for less technically suitable care over seeking assistance from a health worker perceived as unkind. Patient distrust in the public health system, stemming from the perception of staff lacking compassion and enduring long waiting times, serves as a deterrent. This contributes to patients initially seeking care from private provider (28).

2.4.2 Affordability

Affordability is connected to people's ability to utilize suitable services, encompassing both the direct price of services and opportunity costs associated with the loss of income while seeking care. (27). Both direct and indirect treatment costs were commonly cited as significant barriers to seeking care for Skin Neglected Tropical Diseases (SSSDs), affecting both formal medical treatment and traditional remedies (29). Indirect costs encompassed factors such as time away from domestic responsibilities, loss of wages, and the inability to afford transportation costs to reach healthcare services. (30).

3. OBJECTIVES OF THE STUDY

3.1. General objective

This study aimed to assess the facilitators and barriers of healthcare seeking behavior for Cutaneous Leishmaniasis and Leprosy among community members in the Kallu district of South Wollo, Amhara region, Ethiopia.

3.3. Specific objectives

- To describe the facilitators and barriers of healthcare seeking behavior for cutaneous leishmaniasis and leprosy among community members in the Kallu district.
- To explore barriers to healthcare seeking behavior for individuals experiencing cutaneous leishmaniasis (CL) and leprosy in the Kallu district.
- To explore facilitators for healthcare seeking behavior for cutaneous leishmaniasis and leprosy among community members in the Kallu district.

4. METHODS AND MATERIALS

4.1. Study setting and period

The study was conducted in Kallu Woreda, which is part of the South Wollo Zone in the Amhara region from July 1 to August 6, 2023. Its capital town is Kombolcha, which is 376 km north-east of Addis Ababa, the capital of Ethiopia. The district consists of highland, midland, and lowland agro-ecological settings. This district has nine health center, 35 health posts, more than 20 private clinics, and more than 10 drug stores. Among South Wollo districts, it is the most affected district by both cutaneous leishmaniasis and leprosy, as estimated by the SHARP formative assessment in 2020 [8]. Kombolcha General Hospital serves as a referral hospital for lower-level health facilities in Kallu district; on the other hand, for referral of cutaneous leishmaniasis and leprosy treatment and service, it is provided at Boru Meda Hospital, which is 90 kilometers away from the farthest village in Kallu district (11). Therefore, Kallu district was selected for this study based on a formative assessment report that showed delays in seeking healthcare for leprosy and cutaneous leishmaniasis, and the majority of cutaneous leishmaniasis patients sought traditional medicines.

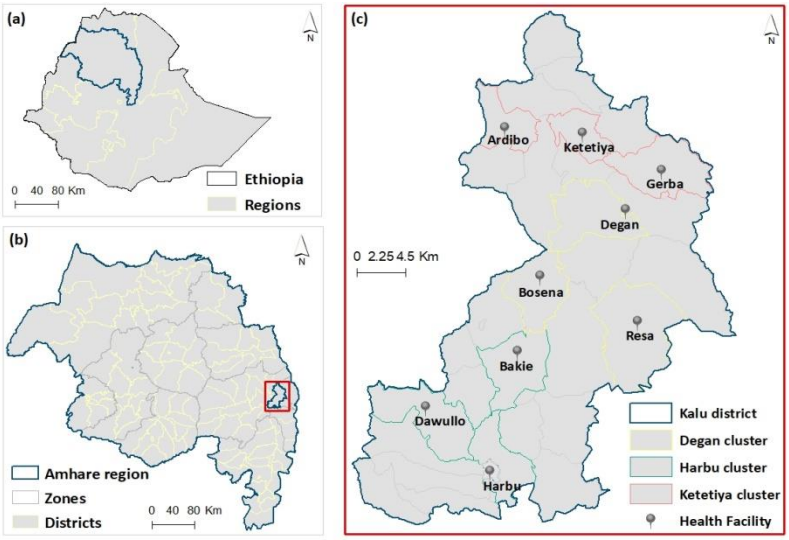

Figure 1: Map of the study site within the country (a), region (b) and zone (c) showing the locations of health centres and population clusters.

4.2. Study design

A concurrent mixed-method design was used. A cross-sectional survey was conducted using structured interviewer-administered questionnaires among households to describe factors associated with healthcare seeking. A descriptive qualitative method was used to gain insight into the main faciliaors and barriers of healthcare seeking behavior for CL and leprosy which generated data that described 'who, what, and where of events or experiences' (33).

4.3. Study population for quantitative method

4.3.1. Source population

The source population was all households living in Kallu district of South wollo in Amhara region.

4.3.2. Study population

The study population was selected households in the selected clusters of Kallu district.

4.3.3. Study unit

The study unit focused on household heads within the chosen clusters of Kallu district. In particular, mothers were preferred as primary respondents due to their closer connection to family life, which allowed for more comprehensive insights. In cases where mothers were unavailable, fathers were selected for interviews. In instances where both parents were not accessible, interviews were conducted with individuals over the age of 18.

4.5. Participants for qualitative method

The study participant were CL, leprosy patients, head of the health centers and TB-leprosy focal persons. CL and leprosy patients were chosen for in-depth interviews (IDIs) to explore the barriers and facilitators from demand side's view while key informants (KIIs) were the head of the health centers and TB-leprosy focal persons to explore health facility level facilitators and barriers for people with CL and leprosy.

4.6. Eligibility criteria

4.6.1. Inclusion criteria

For quantitative, individuals over 18 years of age and staying for more than six months were considered because of their experience living in the community and for qualitative, patients with CL and leprosy who were diagnosed with the disease, the TB/leprosy focal persons and head of health centers were included in this study.

4.6.2. Exclusion criteria

Those who are unable to communicate due to illness were excluded from this study.

4.7. Sample size determinations and sampling procedures

4.7.1. Sample size determinations for quantitative data

The sample size was calculated using Epi Info version 7.2.1.0, Statistical Calculator (StatCalc), for the population survey, considering the following assumptions: prevalence (p) of the outcome variable was not known due to the absence of previous studies, thus, 50% prevalence was used to determine the sample size with a 5% margin of error and 95% confidence level. The calculated sample size was 384. Multiplying by a design effect of 1.5 for adjusting to find a survey sample size, due to the cluster sampling method, the sample size becomes 576. A non-response rate of 5% is added to the calculated sample size. In addition, to minimize the non-response rate, the replacement of an adjacent house was considered. If selected households could not be located, no eligible respondent was available despite at least three repeated visits to the households, or respondents declined to be interviewed, the household would be dropped from the sample without replacement. Thus, the final calculated sample size was 605.

4.7.2. Sampling technique and procedures

A multistage cluster sampling technique was used in this study. Kallu district is divided into nine (9) health centers clusters. Four clusters were selected out of the nine clusters of Kallu based on the previous SHARP formative assessment for the presence of CL and leprosy. Ardibo and Ketetiya clusters were selected because they had high CL case reports, whereas the Gerba cluster was selected due to the presence of both CL and leprosy cases. However, leprosy is particularly prevalent in the Harbu cluster (15). In addition, the selected clusters are in different agro-

ecological zones. On stage one, at least 30% of the Kebeles were randomly selected from the four selected clusters using simple random sampling technique (lottery method). On stage two, a systematic random sampling technique was used to select households from each selected Kebeles after lists of households were obtained from the respective health posts. The sample size was proportionally allocated to each selected kebeles based on the total number of households in the respective Kebeles. Every K^{th} interval of the households were selected after K^{th} values were calculated for each kebele and the first households was picked by lottery method. From the household members, mothers were the first preference to provide information about the household because they better knew their family members. If they were not available during the data collection period, the fathers were elected for the interview. In the event that both of them are absent, older (>18 years old) individuals were considered.

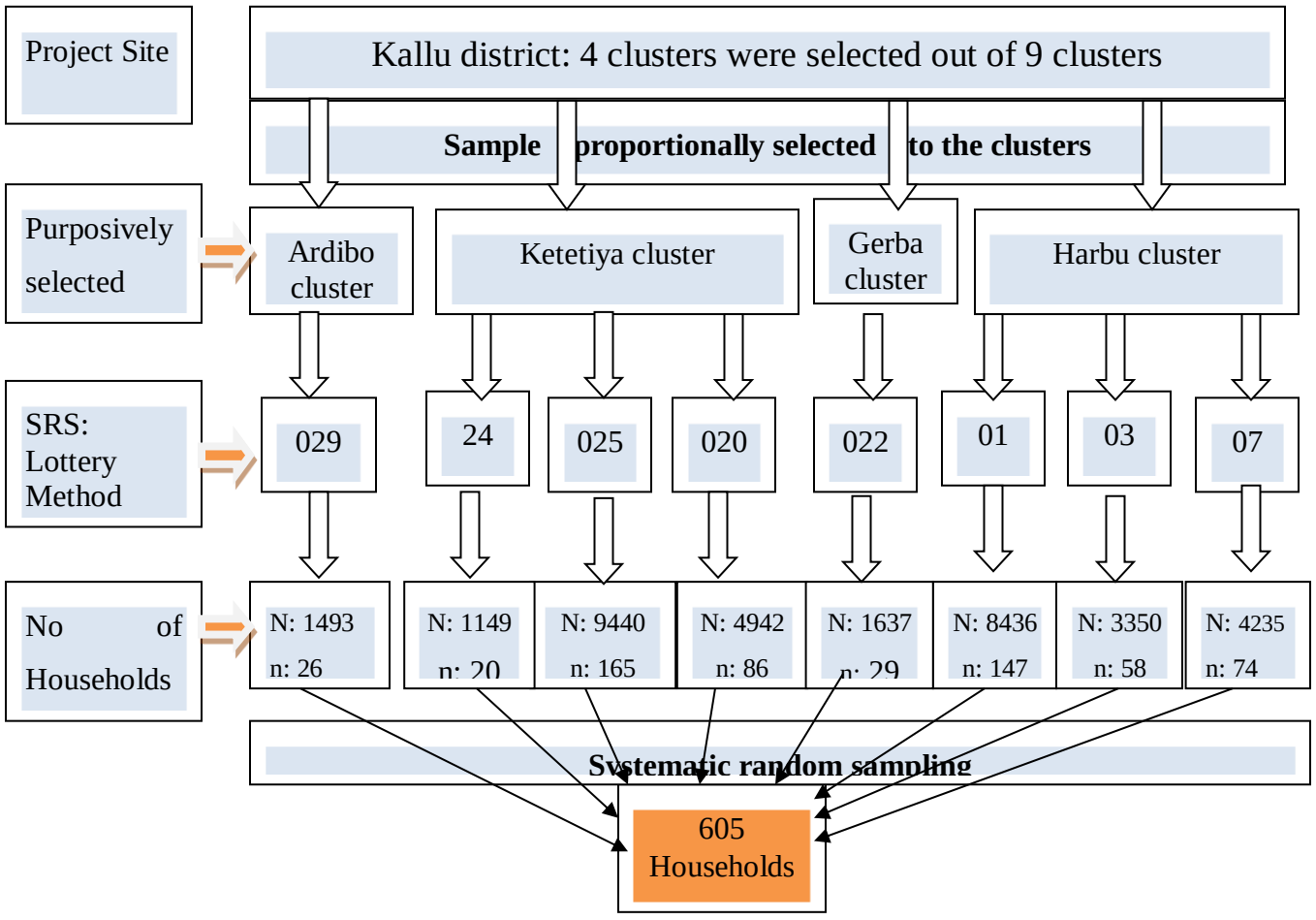

Figure 2: Schematic representation of the sampling procedures to select households from selected cluster of Kallu district

4.8. Study variables

- ✓ Socio-demographic ariables: Age, Sex, Religion, Marital status, Educational level
- ✓ Incomes: average monthly income.
- ✓ knowledge,Attitude
- ✓ Healthcare seeking behaviours.
- ✓ Source of information
- ✓ Source and types of suppor.

4.9. Recruitment of participants for qualitative

Participants for the IDIs and KIIs were selected purposefully by using the criteria sampling technique to get insight into the experiences of leprosy and CL patients from previous ex-patients and current patients. Totally, twelve (12) IDIs were selected, of which six (6) were from CL patients, six (6) were from leprosy patients, and five (5) KIIs were selected from health center heads and TB/leprosy focal persons.

4.9.1. Data collection guide and procedures for qualitative

The data were collected through KIIs and IDIs guides. Interview guides were prepared in English and translated to the local language (Amharic), with open-ended questions based on the objectives set to conduct a face-to-face interview by the principal investigator. In addition, probing questions were used as needed. ll interviews took place in the participant's home compound or a location of their choice where they felt comfortable and had health facilities, and the conversation was begun with informal dialogue to create a friendly environment and gain the participants' trust so that they could explain their ideas freely and in detail. Furthermore, a quiet place was chosen as much as possible to avoid the nuisance.

4.10. Operational definitions

Skin Neglected Tropical disease (NTDs): These are neglected tropical diseases that present with lesions on the skin surface

Knowledge measurement: Nine questions were prepared regarding knowledge of the leprosy and CL the over all knowledge mean scores of leprosy and CL were assessed using scoring system. Ascore 1(one) was given to correct answer and 0 (zero) was used for incorrect answer. A sum score was constructed by adding the items corresponding to each variable and a mean value was used to calculate the over all mean of knowledge(31)

Attitude A sum score was constructed by adding the Items corresponding to each variable and a mean valuewas used to categorize the study participants into two categories. Accordingly, those who scored above or equal to the mean value were considered as having favorable attitude for prevention and control of the diseases, while those who scored below the mea value were considered as having unfavorable attitude.(31)

Income: all annual sources of income was asked and, exchange o Ethiopian Birr, sum-up and convert o monthly income b dividing o 12 months

4.11. Data collection methods tools, and procedures for quantitative

Cross-sectional survey was conducted using structured interviewer-administered questionnaires among households. The questionnaires were developed based on literature review (46) and considering the recommendations from the experts in the field. Experienced data collectors (HEWs) and supervisors were recruited and trained to collect the data, whiles and in-depth interview methods to collect relevant data for qualitative study.

4.12. Data quality controls

4.12.1. Data quality for Quantitative data

The questionnaire was prepared in English and then translated into the local language (Amharic). It was checked back-translated to English and reviewed by the peer to check for consistency. Local research assistants (data collectors and supervisors) who are fluent in communicating the local language recruited. Data collectors (HEWs and health professionals) were trained before they were deployed for the actual data collection. Experienced supervisors (research team members) were assigned for the overall coordination of the data collection process, observing the work of the enumerators, and monitoring the progress of the fieldwork. A pretest was conducted, and the feedback from data collectors and supervisors incorporated when necessary before the actual data collection. The completeness and consistency of the data collection tools were checked before and during data entry, and the data was collected using the kobo Collect tool.

4.12.2. Trustworthiness

Lincoln and Guba's criteria for trustworthiness in qualitative studies, which include credibility, transferability, dependability, and conformability, were used to ensure the trustworthiness of this study (32).

Credibility: To achieve credibility, the investigator had a persistent and prolonged field engagement in the study area to collect the data and to observe the actual context while the data

were collected from CL and leprosy patients, and health professional and head of health facilities with a method of data collection and a source of data triangulation. Additionally, the in-depth interview findings were checked to see if they were supported by the results from the key informant interview. Peer debriefing with other colleagues was an ongoing process, and more emphasis was given to deviant findings. In addition, data saturation was assured by repetition and the overflow of comments.

Transferability: In order to ensure transferability, this study employed purposive sampling to select participants from diverse backgrounds. Detailed descriptions of the research context, participant characteristics, and data collection procedures were provided to allow for a thorough understanding of the study's context and methods. The rich narratives and direct quotations from participants were presented to illustrate the findings, enhancing the reader's ability to evaluate the transferability of the results to other similar settings.

Dependability: To ensure dependability, the primary investigator collected and transcribed the data after a prolonged field engagement. Peer debriefing was conducted with colleagues who were not involved in the data collection and analysis, which allowed to examine the processes of data collection, data analysis, and the results of the research and confirmed the accuracy of the findings as well as ensured the findings were supported by the data collected. All responses are also documented in text form, with audio recordings as supportive evidence. As a result, if another person collects and transcribes the data, the results will be similar.

Conformability: The audit trail technique was used to ensure the conformability of the study, which involves writing down details of the data collection process, data analysis, and interpretation of the data. Frequent debriefing sessions with the research team and checking and rechecking of the data during the entire research were done. Furthermore, triangulation using different methods and sources of data collection to obtain corroborating evidence was used.

4.13. Data processing and analyses

4.13.1. Quantitative data analysis

The quantitative electronically collected data were exported into SPSS version 26 statistical software. Before the actual data analysis, both possible code and contingency data cleaning were carried out. Thus, a series of cross-tabulations, frequency tables, and raw data checkups was carried out. Based on the nature of the data, descriptive statistics such as mean, median, range, maximum, and minimum for socio-demographic variables were used to summarize variables

with scale measurement. Frequencies, means and standandard deviations were computed to summarize categorical variables. Finally, narrations, tables, and different pictures were used to present the findings of the study.

4.13.2. Data processing and analysis for qualitative

A voice recorder was used during the data collection in order to avoid the difficulty of writing down all of the study participants' ideas. The audio-taped interviews were then transcribed verbatim and translated into English for analysis. Repeated reading of the transcribed data was done prior to the analysis in order to immerse and familiarize with the data. Following that, the data was summarized, classified, and reduced using a thematic analysis. The overall coding and memo development process was managed using MAXQDA 2022, a qualitative data management software.

4.14. Ethical considerations

Ethical clearance was obtained from Addis Ababa University, College of Health Sciences, School of Public Health. An official and formal letter of permission was obtained from Addis Ababa University School of Public Health and AHRI. Then a letter of support was written for the South Wollo Zone health bureau and the Kallu Woreda health bureau and distributed to each Kebele. After explaining the purpose of the study to each participant, the data collector first requested the respondents informed consent orally, and written consent forms were read to obtain their agreement before starting the interview. Respondents were allowed to refuse or discontinue participation at any time they wanted. To maintain confidentiality, the names of the study participants and other information that enabled their identification were not taken on the form; rather, a code number was assigned to ensure anonymity. Furthermore, any attempt to cause participants psychological or physical harm was avoided at all times. Permission was obtained from formal and informal community leaders, and special attention was given to participant privacy and confidentiality.

4.15. Plan for dissemination of the results

The research findings will be submitted to Addis Ababa University, the Department of preventive medicine Behavioral Health Science unit, the South Wollo Zone Health Bureau, the Kallu Woreda Health Bureau, and the SHARP project. The findings will also be communicated to different stakeholders who are interested in or working in the area. Finally, efforts will be

made to present at various seminars and workshops and for publication in national or international journals.

5. RESULTS

5.1. Socio demography of the participant

A total of 602 households took part in the study, with response rate of 99%. Among the respondents, 312(51.8%) were female, and the median age was 36 (with a range from 28 to 46). Almost all identified as Muslim584 (97%) and the majority was married (82.1%). In terms of education, 60.5% completed primary education, while nearly one-fourth (23.1%) completed secondary education. The majority reported an average monthly income ranging from 1000 to 2999, with a median income of 1700 (IQR: 1300-2500), as detailed in Table 1 below.and for qualiatative purpose Twelve (12) In-Depth Interviews (IDIs) and five (5) Key Informant Interviews (KIIs) were conducted among a total of seventeen (17) participants. Among the IDI participants, six (6) were individuals affected by cutaneous leishmaniasis (CL) and six (6) were individuals affected by leprosy. The majority of the IDI participants (nine out of twelve) were male, with ages ranging from 23 to 65. Additionally, all but one of the IDI participants was farmers by occupation. As for the 5 KIIs, three (3) of them were TB/leprosy focal persons, and two (2) were health center heads. All the KII participants were male, with ages ranging from 33 to 38.

Table 1: Socio-demographic characteristics of study participant in Kallu district of South Wollo, Amhara region, Ethiopia (n = 602), August 2023.

Variable	Response	Frequency	Percent
Sex of respondent	Female	312	51.8
	Male	290	48.2
Age of respondent	Median (IQR)		36 (28-46)
	Minimum-maximum		19-77
	Age 19 through 29	180	29.9
	Age 30 through 39	186	30.9
	Age 40 through 49	121	20.1
	Age 50 and above	115	19.1
Religion of the respondents	Muslim	584	97
	Orthodox Christian	18	3.0
Marital status of the respondents	Divorced	28	4.7
	Married	494	82.1
	Single	49	8.1
	Widowed	31	5.1
Educational level	Uneducated	58	9.6
	Primary	364	60.5
	Secondary	139	23.1
	Tertiary	41	6.8
Estimated monthly household income in Ethiopian Birr	Median (IQR)		1700 (1300-2500)
	Minimum-maximum		150-8000
	≤ 999	23	3.8
	1000-2999	461	76.6
	3000-4999	70	11.6
	≥ 5000	48	8.0

5.2. Knowledge of Leprosy and Cutaneous Leishmaniasis.

The participants' knowledge scores in this study ranged from 0 to 9. The mean knowledge score for leprosy was 6.4 (SD: 2.7), and for cutaneous leishmaniasis, it was 5.3 (SD: 2.1).

Out of a total of 602 participants, 543 (90.20%) had encountered someone affected by leprosy, and 518 (85.70%) had encountered someone affected by cutaneous leishmaniasis in their community. Those who had no information about leprosy 59 participants, (9.80%) and cutaneous leishmaniasis (84 participants, 14.30%) were excluded from the analysis.

For those with prior information of leprosy and cutaneous leishmaniasis, the main sources of information were primarily family members (81.02% and 64.68%, respectively), followed by friends, relatives, and neighbors (33.33% and 51.93%). A smaller proportion (>25%) of the

participants mentioned other sources of information, including health extension workers (HEW), community meetings, school, and radio.

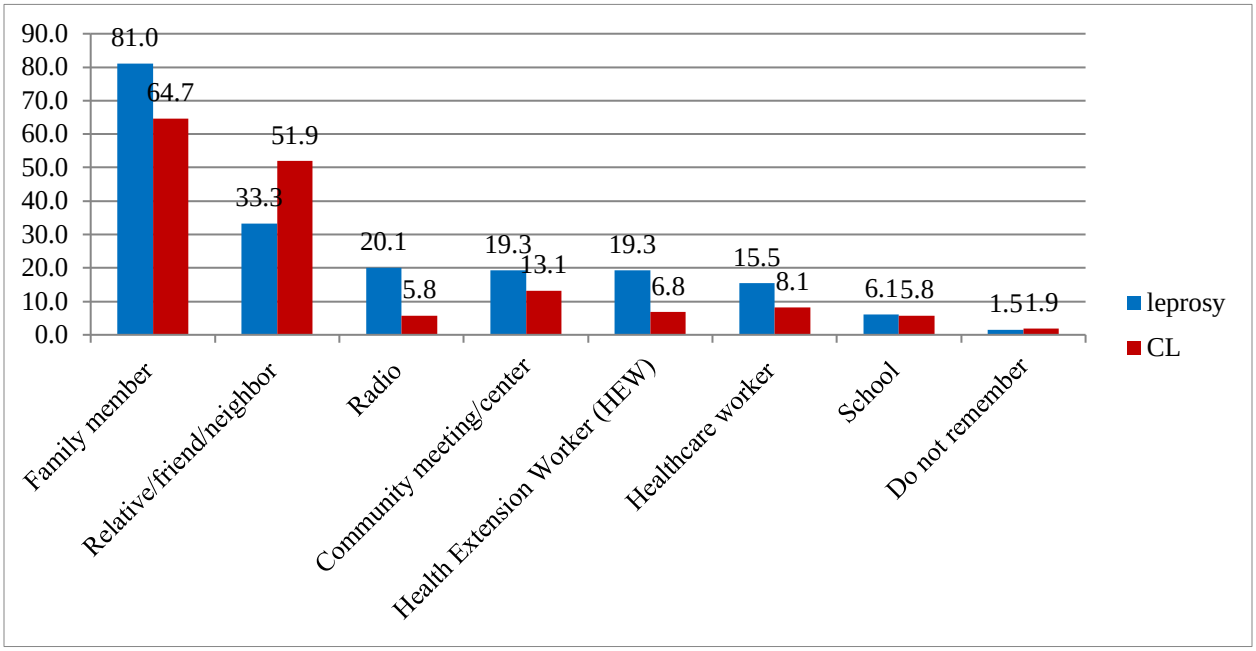

Figure 3: Source of information for CL and leprosy in Kallu district of South Wollo, Amhara region, Ethioipia, August 2023 (NF = 602 and N.

The knowledge on the etiology of leprosy varies among the participants: slightly more than half (53.23%) of the participants stated that the germ was the causative agent of leprosy, while 256 (47.15%) of them considered it to be a hereditary disease. Additionally, slightly less than one-tenth (10%) of the study participants reported it as immoral conduct or punishment for sin within the family, as a result of a curse by God, due to contact with an affected person, or linked to issues such as "bad blood" and washing with dirty water. As for the etiology of CLmentioned by study participants, the majority participants, 387 (74.72%) cited bat urine, and less than one-fifth (14.09%) mentioned the sand fly as the causative agent.

In terms of the symptoms of leprosy participants reported that leprosy causes skin irritation 426 (78.45%), presents as a skin patch 438 (80.66%), results in loss of sensation478 (88.02%), and leads to deformities 472 (88.39%). As for cutaneous leishmaniasis, participants mentioned painless skin lesions 326 (62.94%), painful skin lesions 305 (58.88%), disfiguring skin lesions 333 (64.28%), and fever 14, (2.70%).

Among the participants who had heard about leprosy, they reported more than one way of transmission. Aerosol droplets 418 (76.79%) and prolonged contact with leprosy patients 302 (55.61%) were mainly cited as ways of leprosy transmission by the study participants.

The majority of the participants were unaware of prevention methods for CL. Specifically, 278 (53.7%) reported that they didn't know the prevention method, while 59 (11.4%) mentioned insecticide, 94 (18.1%) said closing windows and doors, and 75 (14.5%) reported other methods. In contrast, the majority 516, (95%) of respondents indicated that leprosy can be cured by pharmaceutical drugs, while 391 (75%) mentioned that cutaneous leishmaniasis can be cured by traditional treatment. Additionally, 155 (29.9%) of respondents believed that cutaneous leishmaniasis can be cured by pharmaceutical drugs.

Table 2: Knowledge of Leprosy and CL among the community of Kallu district of South wollo Amhara region, Ethiopia, |August 2023.

Knowledge of Leprosy				Knowledge of CL			
Variables		**Yes**	**Percent**	**Variables**		**Yes**	**Percent**
Had heard about leprosy or seen persons with leprosy in your community(N=602)		543	90.2	Ever heard of/or seen persons with CL in your community		518	85.7
Perceived cause of Leprosy(N=543)	Germ(Bacteria)	289	53.2	**Perceived Cause of *cutaneous leishmaniasis*? (N=518)**			
	Hereditary	256	47.1		Germs	31	6.0
	Immoral conduct	17	3.1		Sand fly	73	14.1
	Punishment for sin of family	15	2.8		By mosquito bite	36	6.9
	Due to curse by God	18	3.3		Poor hygiene	6	1.2
	Contact with affected persons	16	2.9		Bat	387	74.7
	Washing with dirty water	56	10.3		I Don't know	10	1.9
	Bad blood	24	4.4	**Symptoms of cutaneous leishmaniasis**	Painless skin lesion	326	62.9
Symptoms of leprosy(N=543)	It causes skin irritation	426	78.5		Painful skin lesion	305	58.9
	It can present as skin patches	438	80.7		Disfiguring skin lesion	333	64.3
	Loss of sensation	478	88.0		Fever	14	2.7
	It can lead to deformities or disfigurement	442	81.4	**Prevention of cutaneous leishmaniasis**			
Leprosy transmission(N=543)	Aerosol droplets	418	77.0		Avoiding swimming in rivers or swamps	12	2.1
	Casual contact	45	8.3		Sleeping under bed nets	59	11.4
	Contaminated water	72	13.3		Insecticide	94	18.1
	Contaminated soil	26	4.8		Closing door and windows	75	14.5
	Sexual contact with leprosy patients	14	2.6		Ointment	11	2.1
	Prolonged close contact with leprosy patients	302	55.6		Don't know	278	53.7
	Casual contact	45	8.3	**Treatment of CL**	Pharmaceutical drugs	155	29.9
Treatment of leprosy(N=543)	Pharmaceutical drugs	516	95.0		Traditional mode of treatment	391	75.5
	Traditional treatment	84	15.5	**Mean score (**SD)			**5.32 (2.1)**
Mean score (SD)			**6.40 (2.1)**	Maximum (minimum)			1 (9)
Maximum/minimum			**0/9**				
Maximum			**9**				

5.3. Attitude toward Leprosy and CL

Table 3 shows respondens attitude towards lepros and CL The overall mean attitude score towards leprosy and cutaneous leishmaniasis (CL) prevention and control was found to be 3.57 (Min:1, Max:5,SD: ± 0.62) and 3.78 (Min:2,Max5, SD: ± 0.82), respectively. In comparison, the overall attitude mean score for being diagnosed with leprosy and cutaneous leishmaniasis were 3.81 (Min:1,Max:5, SD: ± 0.57) and 3.25 (Min:1,Max:5,SD: ± 0.73), respectively.

Community strongly agreed/agreed that leprosy (68.0%) and CL (68.1%) are important health problems in their community while they strongly agreed/agreed that they were at risk of getting leprosy (66.6%) and CL (64.6%). In addition, repspondents strongly agreed/agreed that their community should actively engage in the control of leprosy (63.7%) and CL (68.1%). Respondents strongly agreed/agreed that they feel/face shame (10.2%, 48.1%), sadness (68.2% 38.2%), hopelessness (69.5%, 33.8%), self-stigma (.68.4%, 23.3%) and perceived sigma and discrimination (70.18%, 23.1%) for being diagnosed with leprosy and CL, respectively.

5.4. Health seeking behaviors of Leprosy and cutaneous leishmaniasis

The participants were asked about household experiences with leprosy and cutaneous leishmaniasis (CL) and whether they sought treatment in the past six months. 33 (6%) and 45 (8.5%) household members had experienced leprosy and CL, respectively. Nearly all (93.9%) of the leprosy cases indicated that they sought treatment from a health facility. In the case of CL, 39 individuals (87%) sought treatment from a traditional treatment.

The reasons not sought from health facilities for CL were: 32 (82.1%) cited high costs of healthcare and transportation difficulties, while 12 (30.7%) and 17 (43.5%) believed that there is no modern treatment for CL. Additionally, the participants expressed that the main reasons for seeking traditional treatment were: 18 (46.1%) mentioned ease of access, 32 (82.0%) cited lower treatment costs, and 13 (33.3%) believed in the effectiveness of traditional treatment as indicated in table 4.

Table 3: Attitude of the community towards leprosy and CL in Kallu district of South Wollo, Amhara Ragion, Ethiopia, August 2023.

Attitude towards Leprosy prevention (N=543)									
Variables	Strongly Agree	Agree	Neutral	Disagree	Strongly Diagree	**Mean**	**SD**	**Min**	**Max**
Leprosy is important health problem in your community.	16(3.0%)	353(65.0%)	138(25.4%)	14(2.5%)	22(4.0%)	**3.51**	**0.85**	**1**	**5**
Feel at risk of getting Leprosy in your community.	2(0.4%)	360(66.2%)	146(26.9%)	16(3.0%)	19(3.5%)	**3.46**	**0.81**	**1**	**5**
Your community should be actively be engaged to control Leprosy.	8(1.48%)	376(69.23%)	143(26.34%)	11(2.03%)	5(3.50%)	**3.74**	**0.67**	**1**	**5**
Overall mean score for lepros prevention						**3.57**	**0.62**	**1**	**5**
Persons affected with Leprosy feel ashamed for his/her skin condition.	20(3.7%)	372(6.5%)	147(27.1%)	4(0.7%)	0%	**3.84**	**0.59**	**2**	**5**
Person affected by Leprosy face sadness.	13(0.4%)	368(67.8%)	156(28.7%)	6(1.11%)	0%	**3.81**	**0.6**	**2**	**5**
Person affected by Leprosy face hopelessness.	14(2.6%)	363(66.9%)	155(28.5%)	11(2.03%)	0%	**3.79**	**0.62**	**2**	**5**
People affected by Leprosy face self-sigma.	10(1.5%)	363(66.86%)	161(29.65%)	8(1.48%)	1(0.19%)	**3.78**	**0.61**	**2**	**5**
People affected by Leprosy have fear of sigma and discrimination from the societies.	30(5.53%)	351(64.65%)	153(28.18%)	8(1.48%)	1(0.19%)	**3.83**	**0.64**	**2**	**5**
Overall mean score of being diagnosed with leprosy						**3.78**	**0.82**	**2**	**5**
Attitude towards CL (N=518)									
CL is important health problem in your community.	213(41.1%)	140(27.0%)	152(29.3%)	13(2.51%)	-	**4.07**	**0.89**	**2**	**5**
Feel at risk of getting CL in your community.	156(30.1%)	179(34.5%)	148(28.6%)	25(4.8%)	10(1.9%)	**3.87**	**0.96**	**1**	**5**
Your community should be actively be engaged to control CL.	187(36.1%)	166(32.0%)	150(28.9%)	15(2.9%)	-	**4.01**	**0.88**	**2**	**5**
Overall mean score for CL prevention						**3.81**	**0.57**	**1.75**	**5**
Persons affected with CL feel ashamed for his/her skin condition.	103(19.9%)	146(28.2%)	217(41.9%)	43(8.3%)	9(1.7%)	**3.56**	**0.96**	**1**	**5**
Person affected by CL face sadness.	56(10.8%)	142(27.4%)	242(46.7%)	71(13.7%)	7(1.34%)	**3.33**	**0.9**	**1**	**5**
Person affected by skin CL face hopelessness.	50(9.7%)	125(24.1%)	245(47.3%)	86(12.60%)	12(2.32%)	**3.22**	**0.92**	**1**	**5**
People affected by CL face self-sigma.	40(7.8%)	80(15.5%)	325(62.8%)	62(12.0%)	11(2.1%)	**3.15**	**0.8**	**1**	**5**
People affected CL has fear of sigma and discrimination from the societies.	40(7.8%)	79(15.3%)	245(47.3%)	102(19.7%)	52(10.09%)	**2.91**	**1.07**	**1**	**5**
Overall mean score of being diagnosed with CL						**3.25**	**0.73**	**1**	**5**

Table 4: Healthcare seeking behavior of community for Leprosy and CL in Kallu district of South Wollo, Amhara region, Ethiopia, August 2023.

Variables	Fequency	Percent
Household member experienced Leprosy in the last 6 months (n= 543))	33	6. 0%
Sought treatment from health facility(N=33)	31	93.9
Household member experienced symptoms of CL in the last 6 months(N=518)	45	8.5
Where they sought treatment (N=45)		
Health facility	6	6.8
Traditional treatment	39	87
Why health facility is not chosen (N=39)		
Health facility expensive	32	82.0
Difficult of transportation	12	
I don't know the presence of modern treatment	17	43.5
Main reason choosing traditional treatment(N=39)		
Traditional healers are easily assessable	18	46.1
The cost of treatment is lower	32	82.1
The treatment is effectives	13	33.3
At what point you seek treatment if develop leprosy/CL(N=543		
When self-treatment does not work	39	7.1
As soon as I realize the skin problem has started	420	77.3
When the problem has lasted for at least two week	14	2.6

5.5. Source and types of support

Able 4 presents the diffferen sources of information for leprosy and CL. The sources of support in the community, as reported by study participants, included 514(94.7%) from family, 298(54.9%) from neighbors, 228(42.0%) from friends and peers, 162(29.8%) from health extension workers, and 112(20.6%) from health professionals. In terms of the types of support in the community, 478(88.0%) indicated in-kind or cash support, 109(20.1%) mentioned material support,106(19.5%)emotional support, 102(18.8%) psychological and 208(38.3%) informational support.

Table 5: Source of suppor and Types of support in community towards leprosy and CL in Kallu district of South Wollo, Amhara Ragion, Ethiopia, August 2023.

. Variables	frequency	Percent
Source oft support n=543		
Family/Relative	514	94.7
Neighbors	298	54.9
Friends/Peers	228	42.0
Health extension workers	162	29.8
Health professional	112	20.6
Types of support n=543		
In kind/cash/ support	478	88.0
Material support	109	20.07
Emotional help	106	19.5
Psychological support	102	18.8
informational support	208	38.3

5.7. Facilitators to Healthcare seeking for cutaneous leishmaniasis and leprosy

To better understand facilitators for healthcare seeking for CL and leprosy, interviews were carried out with patients affected by both conditions. Additionally, key informant interviews were conducted with the TB/leprosy focal person and head of the health centers. The major themes that emerged from these discussions revolved around individual-related, community-related and health facility-related facilitators.

Theme 1: Individual-related facilitators.

Fear of skin damage and aesthetic value for skins were found to be individual-related facilitators in this study. People who are familiar with the signs, symptoms, and consequences of Cutaneous Leishmaniasis and Leprosy are more likely to seek healthcare

aesthetic value for skin

Cutaneous leishmaniasis, primarily affecting the facial area, including the nose, lips, and eye area, significantly impacts an individual's aesthetic value and appearance. Therefore, In order to protect their skin condition, individuals affected by CL seek treatment. This idea was also mentioned by one of female CL patient, who said she did not want to see any scars o'n her skin.

> *"I don't want to see any scar on my skin which ruins my beauty. I tried a lot to get treatment".*
>
> *IDI, Female CL Patient*

In addition cutaneous leishmaniasis predominantly impacts adults who are particularly attentive to their facial hygiene and appearance in order to enhance their attractiveness and overall appearance. This attention to skincare plays a role in their healthcare seeking behavior, aligning with the earlier observation about the significance of skin aesthetics in motivating individuals affected by cutaneous leishmaniasis to seek treatment as in dicated by one of health professional

> "*CL mostly affects adults. Most of the time, adults are highly sensitive to their skin condition; if they see anything white or dot on their face, they may be afraid or ashamed; …"*
>
> *KII, male health professional*

Perceived severity of the disease

Leprosy patients often do not seek treatment immediately after symptoms start, believing it will disappear by iself. However, when diagnosed with leprosy by themselves and relatives, they start seeking treatment due to the fear of the consequences of the disabilities caused by the disease.

> *"Now, I fear the disease (leprosy) may affect my hands and legs, which makes me totally dependent on other people. I do not like to die in such a way because I know no one will*

care about me if I lose my legs, hands, and eyes, including my children who live with me. I'm always worried about the disease consequencies, and I'm still wondering about better treatment."

IDI, male leprosy patient

Theme2: Community-related facilitators

Social support

In the community, a prevalent culture of information sharing was observed. Interactions among community members often involve the exchange of health-related details, including seeking advice on where to receive treatment when unwell. Former patients play a crucial role in advising and guiding new cases, sharing their experiences and directing them to suitable healthcare facilities. This finding is supported by one of the in-depth interviewee as indicated below:

"... A previous patient advised me to visit a health facility in Boru for treatment, citing his personal experience with good care and a cure. I also accepted the advice and planned to go to Boru."

IDI, male CL Patient

Furthermore, the presence of strong social support networks, including family, friends, and community members, was noted to have a positive influence on healthcare-seeking behavior. These networks not only encourage individuals to seek healthcare but also provide emotional support, serving as a crucial factor in overcoming barriers to access healthcare services

This idea was reinforced by a key informant from Borumeda hospital, highlighting the significant role played by previous patients in sharing information about healthcare services. The establishment of associations among leprosy patients to educate and support new cases was noted, contributing to raising awareness within the community.

"Majority of the leprosy patients at Boru received treatment and recovered from their illness; some of them returned to their local community and educated others about leprosy, while some of them found Leprosy association that raised awareness of the disease because it has been around 60 years since working on leprosy in Harbu."

KII, Male health profession

Theme 3: Health facility related facilitators

Referral pathway of leprosy patients by HEWs, provision of treatment for free, free service, health education and professional approach to the patients are health facility related facilitators for leprosy patients. Comparing CL with leprosy, there is a structural barrier to healthcare seeking due to a lack of service at health centers, low community awareness of CL treatment, and doubts among health professionals about the presence of CL drugs.

Referal by HealthExtensionWorkers

Health extension workers usually raise awareness about leprosy in the community; they teach the community about the symptoms of the disease, report when leprosy cases are available, and encourage individuals to seek treatment by referring to health centers. They also follow patients who are starting medication. The HEWs are facilitators by screening and referring leprosy patients. A TB/Leprosy focal person mention that the HEW at health post refer suspected cases of leprosy for further diagnosis to health centers and they contact TB/leprosy focal person which makes easy for the treatment follow up without further delay.

> *"When the patient came by referral from health posts, they directly contact TB-Leprosy focal person, and they got free service, and all services are free, including the screening."*
>
> *KII, male TB/leprosy focal person*

Avalability of Free drug and service

Even though the shortage of the drug are common problem mentioned by participant, free drug and free treatment are one of the health fsacility related facilitator because community is aware that most leprosy drug are given for free at health centers thus patient will come to health facility without considering the drug cost. This idea is supported by key informant interview at borumeda hospitals.

> *"Drugs are free, services are free, diagnosis is free, and there is no expenditure regarding the cost of treatments and drugs*".
>
> *KII, male health professional*

Health Education initiatives

Health professional and HEWs create awareness for community which encourages them to find treatment from health centers.

" *Sometimes we also create awareness when went at outreach, and the health worker at Kebele has a great contribution since most of the time they move in the community for field work, and if they get suspicious cases of leprosy, they immediately refer it to health facilities for this kind of diagnosis".*

KII, male TB/leprosy focal person

Boru Meda hospital has done a great job on skin diseases, specifically leprosy. At this time, the hospita is working with Fana BroadCast cooperate (FBC) and Amhara Media Corporate (AMC), Dassei branch, to communicate health messages about different health issues including leprosy. Even though there are so many cases of CL the hospital have no program on CL because lack of medications for treatment. Therefore, they suggest provision of medical equipment's and drugs for the treatment service before the transmission of messages about the possibility of cure at health centers. This is supported by the idea from one of the KIIs.

"…. Boru Meda Hospital has two radio programmes that are distributed twice a week. Many skin d iseases are presented, and we give many skin diseases-related information to the community during that programme

."KII, male health professional boru hospital

5.8. Barriers to Healthcare seeking for cutaneous leishmaniasis and leprosy.

The barriers to healthcare seeking are also catheterized, as they range from individual-related barriers, which focus on low awareness, low incomes, and other competitive factors that hinder individuals from seeking healthcare, to community-related barriers, which include a common understanding of the diseases, including perceptions of the cause of the disease, and a preference for traditional treatment in the case of cutaneous leishmaniasis. There is also a health facility-related barrier, which ranges from the availability of health facilities to the availability of drugs and diagnostic materials, waiting time, and cost related to direct and indirect costs during healthcare seeking. Under this section, barriers to healthcare seeking cutaneous leishmaniasis and leprosy are themed as individual-related barriers, community-related barriers, and health facility-related barriers.

Theme 4: Individual-related Barriers

Lack of Awareness and knowledge

Limited awareness and understanding of these diseases among affected individuals and communities hinder healthcare seeking behavior. Misconceptions about the causes, transmission, and treatment of Cutaneous Leishmaniasis and Leprosy lead to delayed or inappropriate care-seeking behaviors. In this study, most participants mentioned that they were not aware of the biomedical treatment for cutaneous leishmaniasis, and one of the participants said that

"I don't have any information about whether this cutaneous leishmaniasis has a modern treatment. And up until now, I have not sought treatment for my skin conditions from health facilities."

IDI, male CL patient

This information is widely known and referred to in the local population as cutaneous leishmaniasis, which is treated using traditional methods rather than modern ones. The one of cutaneous leishmaniasis confirm that

"I didn't do anything. I used traditional medicine. Others told me that there was no modern treatment for it, and that is why I did seek modern medicine. I am using that as a result."

IDI, male CL patient

The perceived cause of the disease is also found to be a cause of delay in healthcare seeking because people believe that the cause is from different sources among the communities. Almost all the participants mentioned that the cause of the disease is bat urine or bat ministration and apply home remedies at home like leaf by hot and apply on affected area, while some use mentioned they kill the bat itself and chopped very well and after roosted they apply at affected area

> *"Leishmaniasis is thought to start when a bat menstruates in a specific body part. This is the reason. . And if you kill the bat, roast it thoroughly, then grind it and apply the powder to the lesion, then the lesion will dry".*

IDI female, CL patient

Belief in supernatural causes influences treatment options, with one participant citing the evil eye as the cause and seeking traditional treatment.

> *"We believe that the problem is evil eye. Traditional medicines are good for such diseases and we take some traditional treatment to drink from traditional healers".*

IDI female, CL patients

Financial constraint

Income-related barriers to care-seeking are prevalent among patients, who often face difficulties in finding treatment from a distance due to their daily activities, transportation costs, and service availability. Additionally, their families depend on them or cannot afford to live without their routine work, making it difficult for them to leave their daily activities.Therefore, financial barriers, such as the cost of healthcare services, transportation expenses, and associated expenses can hinder healthcare seeking behavior. Affordability and availability of healthcare resources are critical factors affecting access to care.

> *"Due to the current high living costs, which result in a low capacity to afford, I am not able to go to Boru and get modern treatment for my disease. I couldn't go there so far and get treatment. I was collecting or saving some money and saying I would go today or tomorrow".*

IDI male CL patient

One of the participants also mentioned that transportation costs are also one of the barriers, even though services and drugs are given free, and he is waiting until he gets transportation costs.

"Although the medical service is given free of charge, I need money for transport cost to travel up to there, and I am waiting till I get that money then I will go there and get the treatment and get cured as I saw from the other people".

IDI, male CL patient.

Transportation costs are also one of the most common problems for leprosy patients because most of them don't have an income and depend on their families or relatives, and one of the previous leprosy patients mentioned that

"There are problems when they go from here to Boru. Because many of them do not have money for transportation, for example, I depend on my brother, and I don't have anything for survival. There are also many people who are affected by this transportation. it is a challenge. I'm also dependent on my brothers; no relative can borrow me money, and I don't have an income."

IDI, male leprosy patient

The competitive priority related low income are also related to barrier of healthcare seeking one of the mentioned that.one of the participant from Ardibo explained that

.*When they go there, they leave their family and job, and there is also fear of treatment or pain during treatment. These factors are barriers to modern treatment, and many people find tradeitional treatment an optio*n.

KII- male health professional

The idea also supported by one of cutaneous leishmaniasis patient from ketetiya by summarize the argument by saying

"Most of our communities are farmers, and some of them depend on Chat as an income, which comes in one or two rounds a year. There is no constant income that we get daily or monthly, and therefore it is difficult to find treatment from Boru Meda"

IDI- male CL patient

One of the key informants from Boru Meda Hospital noted that the patient who comes with such a skin disease has a poor economic status, also mentioning that

" *Regarding economic issues, there are a lot of problems; there is no question about that; the problems are a lot. And most of the patients who come up with skin diseases are those who have low incomes and are in the community, and these problems are known."*

KII, heath professionals Boru meda hospitals

Believe in tradiional treatment

Patients do not know the presence of treatment for CL at health facilities; however, they believe that traditional treatment is more effective than biomedical drugs. This preference is influenced by the perception that these traditional approaches are effective and readily available

"I thought that it could be cured by traditional treatments. Most people also say it is cured by Traditional treatment, and I also believe that it is cured by traditional treatment."

IDI, female CL patient

In the case of leprosy, even though all the participants are aware of the presence of treatment at health facilities but often delay seeking care untile disabilities occur.This is attributed to a lack of awareness of the early symptoms of the disease and considering the disease as a simple case that could be healed by itself or another disease, which they also considered simple cases..

> *"Most of the time, they do not pay attention to their skin conditions; they come after disabilities occur when the diseases become severe. Most of the time, they believe the cause is the result of conflict, injuries, or a scar that develops when they hit each other for cutaneous leishmaniasis and for leprosy they said it is heredity"*
>
> *KII-male health professional*

One of the leprosy patient participants also mentioned the patient's delay in seeking healthcare s because they did not know the symptoms of the disease at the beginning and came to health facilities after disability occurred.

> *"Yes, there are people who delay seeking healthcare because they do not know the symptoms of the diseases. This disease does not like soil and warm things; people do not protect themselves from such things, and they even use hot spring water because they do not sense the hotness, and they come to healthcare after they develop an ulcer, and these are the results of their lack of awareness about the diseases"*
>
> *IDI- male leprosy patient*

Theme5: Community Related barriers

Cultural beliefs and traditional practices

Cultural beliefs and traditional practices in the communities influence healthcare seeking behavior. Alternative remedies, religious practices, lead individuals to delay or avoid healthcareseeking for Cutaneous Leishmaniasis and Leprosy. The common understanding and belief that cutaneous leishmaniasis has no modern treatment was found to be a barrier to seeking healthcare for cutaneous leishmaniasis. Both key informant participants and in-depth interview participants uniformly mentioned that community believe as cutaneous leishmaniasis has no modern treatment, and the community also believes that traditional treatment is the best option for treating cutaneous

leishmaniasis while modern treatment cannot cure or diagnose he disease. TB/leprosy focal person from Ardibo clearly mentioned that the community view regarding modern treatment mentioning that the community do no aware the presence modern treatment for cutaneous leishmaniasis and believes of the effectiveness of traditional treatment.

> …..“*Most of them do not know the presence of modern treatment for CL and believe that only traditional treatment is effective”*
>
> *KII-male health professional*

One of the patients with cutaneous leishmaniasis from Ketetiya also mentioned, about community view and his experience, why they do not seek treatment from health facilities.

> *“The reason we did not find treatment in a health facility is because we did not know the presence of treatment and needed to be treated with traditional treatment. Still, if you ask the community, they don’t know about the presence of treatment*.”
>
> *IDI female CL patient*

Because many community members do not pay attention to their skin health and frequently visit health facilities after developing disabilities, low health literacy in the community is also seen as a barrier. They also do not compare and take into account the negative effects of traditional treatments, and they act according to their information rather than taking into account any possible adverse consequences of the action. One key informant participant from Harbu healh cementer mentioned that

> *“The main reason is primarily health literacy or awareness of the health issue and community does not compare the effectiveness of the TM and at treatment health facilities. As a result, the community may prefer traditional since they have been using traditional treatment for many years, and it looks like this”*
>
> *KII -malehealth professional*

Stigma and discrimination

Participants mentioned that Leprosy has historically been associated with stigma and discrimination due to cultural beliefs and misconceptions about their transmission. Fear of social rejection and discrimination deter individuals from seeking healthcare and delay diagnosis and treatment.One of the key informants from the Harbu health center mentioned that leprosy patients experience stigma and are hidden in the community because some people believe the disease is hereditary and refer to it as "*Qumtina*," which is not a polite way to express the disease and affect individuals do not like to be called by this name.

"Skin diseases are not naturally cured quickly. It destroys the physical appearance and beauty of the person. Most people come to health facilities after deformities occur, and generally, the attitude towards these skin diseases is not good. For example, the community considers leprosy as Qumxina, which is not a good way of expressing it and can affect relationships within the community. For this reason, most people hide from society and come up after they are severely affected."

KII, male health professional

Theme 6: Health facility related Barrier

Geographical and logistical obstacles

Participants stated that limited healthcare infrastructure and resources, individuals face challenges in accessing healthcare facilities for diagnosis and treatment. This is particularly important for rural or remote areas where transportation and travel distances are significant barriers. Drug unavailability, the absence of service from health centres, the cost of accommodation, the duration of treatment, and the distance of health facilities from individual patients are the barriers in community of the Kallu for healthcare seeking. And one Clpatient clearly state that

"the health center is far from these areas, for example if someone fails here, we need to pay 500 birr for Bajaj from here to Adame, this is for transportation of one person only, then there is payment at health center, if in case not possible there we need to go Dessie. There is one health center started nearby here, it is good if that start serving us. This is the main thing."

IDI male CLpatient

Shortage of drug

Participants also mentioned that they referred to the Boru Meda Hospital for better treatment, and they also mentioned that at Boru Meda, even though medications are free, they do not get drugs and are obligated to buy drug from private sources, which they cannot afford and not available. One of the study participants clearly mentioned that there is no health service near them and that they are required to go far, which exposed them to unnecessary expenditure. This idea also raised by one ofl eprosy patient by stating that

"After Boru hospital ordered me to find drugs in private, I tried to find the drugs in several places, but I didn't get any leprosy drugs. Therefore, there are many patients and elders who cannot afford to buy the drug."

IDI, male leprosy patinet

The shortage of drug are common and most patient didn't gate treatment when the come to health facility and this also confirmirmed by one TB/leprosy focal person by stating that

> *"There is a shortage of drugs when we request conserned body many times. I don't know how the drug is distributed; most of the time we asked, we didn't get drugs. I tried to communicate with different health centers. I got from other centers three strips, which I gave to the patient. Now they have completely stopped treatment. As I heard, other health centers do not got drugs and still we didn't get any drug, and all patients have now stopped medication"*

KII-male health profesion

Long duration of treatment

The duration of the treatment for CL is also one of the barriers to seeking healthcare, and one CL patient mentioned that for the treatment of CL, they are admitted for 28 days, which makes it difficult to stay at the hospital. He found another alternative, and he mentioned

> *"I went once to Boru hospital , they told me to stay for twenty-eight days there for treatment purpose, then I told them as I can't stay that much day there, after that I didn't go to there".*

IDI, male CL patient

This issue also raised by one of key informat participant frpm ardibo by indicating

> *"When they go there, they leave their family and job, and there is also fear of treatment or pain during treatment. These factors are barriers to modern treatment, and many people find traditional treatment an optio*n".

KII-male healrh professional

Even though some individuals have enough money in rural areas, the majority of rural people find it difficult to adapt to the environment in the hospital and find someone who helps them overcome the problem or they decide to find traditional medicine

> *"Some individuals might have the money but are not strong enough to go to Boru town alone, or has no children to accompany. Then they will decide to get traditional medicine in their village"*

IDI- male CL patient

The participant mentioned that service availability is required for early diagnosis, which reduces disability and reduces the costs of treatments, and also helb disabled and older people and children's who cannot go far without the help of others.

> *If there is a facility around, when individuae sees the sign of the disease he/she could go and try to know it and the health professionals can explain to him without encoring any expense Because there are many weak people that don't have supporting children, even some are not able to climb on to cars.*
>
> *IDI, male leprosy patient*

6. DISCUSSION

This study explores facilitators and barriers to health care seeking for cutaneous leishmanias and leprosy in the community of Kalu district, south wollo, in Ahmara region, Ethiopia In this study, about 90% and 86% of the respondents had ever heard or seen about leprosy and CL in the community, respectively. This finding is supported by previous SHARP formative assessment (15), and the study is also consistent with the finding of a study conducted in the Tigray region, in which CL has been endemic (33) and the study conducted on leprosy in the endemic district of East Ethiopia (31), whose community has seen or heard about the disease (15,17,33). The similarity of these findings might be due to the endemic nature of the disease, and the community can easily hear or see these diseases in their communities.

The finding also reveals the source of information for those who have heard about leprosy and cutaneous leishmaniasis. The sources of information were mainly family members (81%, 65%) and relatives and/or friends (33%, 52%), respectively for lerpos and CL and about less than one-fourth (25%) of the participants mentioned that the sources of information were health extension workers (HEWs). This finding is similar to other studies conducted in Ethiopia and abroad, mentioning that the sources of information in rural communities were mainly family and relatives (31,34,35). And this result is also supported by qualitative findings that community culture encourages sharing information about family, illness, and treatment locations, making it a platform for patients to seek help and receive guidance from their former patients.

In this study, households' that experienced leprosy and CL in the last six months were 6.0% and 8.5%, respectively. Among those who experienced leprosy, 94% sought treatment from health facilities, compared to only 13% of those who experienced CL. This finding higher than findinding in Idia that about 83.6% of leprosy patient sought treatment from health facilities, and that might be due the inclusion of only confirmed cases by health facilities in this study(36). However, only 13% of CL cases sought treatment from health facility. This is much lower than the finding from a study conducted in CL endemic areas of Peru, which indicates that 29.2% sought treatments from health facilities. On the hand, our finding (87%) is higher compared to the finding of Peru study, which indicated about 73% used traditional medicines as the first choice of treatment (37). The possible reasons for this difference might be explained by the difference in health service availability, culture, and geographical characteristics between the study populations. Therefore, CL services should be available in trhe nearest health facility and awareness should be created for the community.

Respondents also indicated that the main reasons for seeking traditional treatment for CL were due to easy assessablity of traditional treatment (46.1%), lower cost of the treatment (82.0%) and

believe in effectiveness of traditional treatment (33.3%). This finding is inline with the findings of studies conducted in other parts of Ethiopia and abroad that community believed in effectivess and easy accessability and affordability of traditional treatments (30,38,39). The result is also supported by our qualitative finding that most of the CL patients found treatment from traditional treatment due to believing in its effectiviness, being unaware of the presence of modern treatment, and transportation costs related.

The knowledge score of the respondents was 6.46.4 (SD: 2.7 for leprosy. About 53% was believed that bacteria or germ were the causative agent while 47% of repondents considered that lepros is hereditary. These findings are slightly higher compared with a study conducted in Oromia region, Arsi zone at Kuyera town (<30% of the community believes leprosy is caused by bacteria). However, the finding is lower for a perceived belief in believed hereditary of leprosy (42%) (31). Possible reasons for these differences might be due to precense of Leprosy Association in Harbu area of south wollo, which had created awareness on leprosy as information from qualitative study suggested. Moreover, differences in health service availability, culture and geographical characteristics between these study sites may have contributed to the reported variations.

For CL, the over all mean score of responnde's knowledge was 5.3 (SD: 2.1).Though the community was awared about the symptoms of the disease, did not know the cause and prevention methods of CL. About 75% of the study participants mentioned that bat urine as the causative agents and around 53.7% respondent haven't know the prevention method, while only 18.1% mentioned using insecticide as prevention method. These findings are also consistent with studies conducted in Tigray region, which reported that the majority of the community were not aware of the cause and prevention methods of CL (15,33) and knowledge of the symptoms are due to endemic nature of the disease in the area and this finding is also similar to different studies conducted in Ethiopia and other African countries even though the number varied depending on the place where the study took place (34,37,40–43). Poor knowledge on prevention and treatment might be due to low awareness of prevention and the presence of modern treatment since there is no health education regarding CL. This finding is also revealed by the qualitative finding that the majority of the community is not awared of the presence of modern biomedicine for the prevention and treatment of CL. Thus, creating awareness is very important regarding treatment and prevention methodsof CL.

This study revealed that the overall attitude mean scores towards leprosy and CL prevention and control are 3.57(SD: 0.62) and 3.98 (SD: 0.82) respectively, while overall attitude mean scores of being diagnosed with leprosy and CL are 3.81(SD: 0.57) and 3.23 (SD: 0.73) respectively. The finding is similar to a study done in the Nigeria in skin NTD endemic area, in which the

respoindents agreed or strongly agreed that they are at risk of getting diseases and should participate in any activity regarding the control of the diseases (35). Similalry, this finding is also consistent with studies carried in Ethiopia and abroad, which indicaed that patients with skin-NTDs are exposed to fear, sadness, hopelessness, and discrimination (5,9,14,30,35,41,44), because the majority of skin NTDs result in visible changes to the skin and other body parts. Moreover, these negative attitudes of being doiagnosed with leprosy and CL might be due to lack of awareness of the cause of the diseases, which is also supported by the qualitative findings. Consequently, these findings call for acion to encarouge the aidue owards leprosy and CL prevention while creating awareness to minimize the negative attitude towards being diagnosed with these diseases to attain WHO strategic framework for integrated control and management of skin NTDs and sustainable development goals to end the neglect in 2030 (13).

Sources of support for leprosy and CL cases were reported to be family (94.7%), neighbours (54.9%), and friends and peers (42.0%), HEWs (29.8%), and health professionals (20.6%). Besides, the types of support for leprosy and CL cases were mentioned in kind or cash provision (88.0%), material support (20.1%), emotional support (19.5%), psychological support (18.8%), and informational support (38.3%). This finding is in line with studies conducted in Nigeria (45) and Endonsia (46) where family and community support were vital to engaging in health services and community support is the form of encouragement, prayers, and financial aid (23,46). Similalry, our qualitative findings shows that family members, relatives, and neighbours are the members of the community who help and guide the patient by providing cash or inkind support, informational and physocological support, including praying. Therefore, it is important to encourage community support systems and make them part of an integrated control system for NTDs.

The facilitators and barriers to healthcare seeking for leprosy and CL were further explored and thematized into individual-related, community-related, and health facility-related facilitators and barriers for both leprosy and CL as identified by the qualitative methods.

Individual-related barriers are mainly related to factors that inhibit individuals to seek healthcare. In this study, low awareness and lack of time for healthcare seeking because of other priority jobs which are related to low income were the barriers to healthcare seeking. This finding is in line with a study conducted in Addis Ababa who has low income, unaware of service ability, competitive priority, and a lack of time for healthcare seeking (29). Therefore, it is critical to recognize that individual affected by leprosy and CL has poor standards of life, few resources, and unstable employment. In addition, most people affected with skin NTDs are poorer and leave in poorest country and delay in seeking healthcare as showed by different study (14, 25, 35, 36).

As of community-related barriers, in this study, people's preference for traditional medicine for treating CL is largely influenced by their perception of its effectiveness. Most participants are convinced of the effectiveness of traditional treatments due to personal experiences, cultural values, and historical use of these treatments. Other reasons for preferring traditional medicines for the treatment of CL are due to lack of awareness about the availability of treatment health facilities. Participants stated that they are not aware about modern treatment options. Consequently, individuals turn to traditional medicines as they are readily available and familiar. This finding is consistent with study conducted in CL endemic area of Tigray region, Ethiopia, where the majority of the community were not aware of modern biomedical treatment options and instead prefers traditional medicine (33). Similalry, this finding is consisntent witth the finding's of a study done in Peru (33,37). Therefore, it is necessarly to engage the community into awarenss creation activities to uiimprtove healthcar seeking from health facilities and work together with traditional healers.

Regarding leprosy, eventhough the community were aware of the presence of modern treatment, the majority of patients came to health facilities after the occurrence of disability. This may be due to being not aware of early symptoms of the diseases and perceptions of its causation, as some of the community considers leprosy to be hereditary. Stigma and discrimination in society has also effect on individuals with leprosy as they are isolated and discriminated from social phenomenas. Furthermore, this finding is also supported by study conducted in Ethiopia and abroad, which reported that leprosy patients were faced stigma and discrimination during healthcare seeking (1,15,16,44). Thus, it is imperative to minimize the stigma and discrimination associated with the disease.

In this study, healthcare facility-level (supply side) barriers contribute to the low uptake of available healthcare services for leprosy and CL. Findings from this study indicate that the shortage of medication and medical equipment and distance from health facility affected the use of services. The shortage of medical supplies has contributed to the low uptake of available healthcare services for leprosy at nearby health facilities (17). The study also found that the direct and indirect cost of modern healthcare services, including accommodation and transportation, is a significant barrier for accessing healthcare services. This finding imilay with the findings' of studies conducted elsewhere (5,28,29,33,46).

7. STRENGTHS AND LIMITATIONS OF THE STUDY

7.1. Strengths of the study

The following are a summary of the studs' primary strength

- Methods triangulation (both quantitative and qualitative methods) was used, which increase the validity of our findings.

7.2 . Limitations of the study

- In this study, we didn't perform advanced statistics (assosiaion) due to involvement of the small number of leprosy and CL patients due to small prevalence of both diseases. Howver, we tried to explore facilitators and barriers of healthcare seeking using qualitative method to fill the gap.

8. Conclusion and Recommendations

8.1. Coclusion

This study shows facilitators and barriers to healthcare seeking for leprosy and CL from both supply and demand sides. Individual-related and community-related facilitators play a crucial role in driving healthcare demand. Individual-related facilitators motivate people to seek healthcare, while community-related facilitators assist patients in seeking treatment through counselling, giving clear information on better care options, support materials, and psychological support. The barriers to healthcare seeking are also catheterized, as they range from individual-related barriers, which were low awareness, low incomes, and other competitive factors that hinder individuals from seeking healthcare, to community-related barriers, which include a common understanding of the diseases, including perceptions of the cause of the disease, and a preference for traditional treatment and unfamiliar wih biomedical treatment in the case of cutaneous leishmaniasis and health facility-related barrier, which ranges from the unavailability of health services including unavailability of drugs and diagnostic materials, long duration of treatment, and direct and indirect costs during healthcare seeking. Therefore, to reduce delays in healthcare seeking for leprosy and cutaneous leishmaniasis, it is important to address the barriers identified in this study and important to build on the facilitators of healthcare seeking.

8.2. Recommendations

Based on the findings of this study, the following recommendations are proposed:

For health extension workers: Increase awareness about the presence of modern treatment and prevention methods, especially for CL, and promote early diagnosis so that individuals will be diagnosed before deformities occur. With local leaders and other health professionals, they should create a favourable environment for community engagement so that the community should give priority and find solutions for leprosy and CL

For distict health office: Collaborate with community influencers, including family members, former patients, and community leaders to promote modern healthcare seeking as their endorsement can positively influence individual treatment decisions.

For zonal health department: The zonal health department should work in collaboration with higher level institutions like regional health buraue and federal minitry of health and Ethiopian Pharmaciticauls Supply service to avail important supplies for early diagnoses and treatment for leprosy and CL at the local level.

For regional health bureau (RHB): The RHB should work on capacity building, accessibility of services and health professionals training in collabotration with federal ministry of health and other stakeholders so they can easily diagnose and treat both CL and leprosy**.**

For the Federal Ministry of Health (FMoH): Policymakers and stakeholders involved in skin NTDs should work together to provide CL services locally at the health center level. Thus, FMoH should increase service availability at the lowest and nearest health facilities and work towards availaibng important medications and supplies.

For research institute: Research institutions should explore more on facilitators and barriers to healthcare seeking at trhe national level to develop and improve the program implementation, decisions, and policies on skin NTDs.

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9. ANNEX

Annex1. Information Sheet

Dear Participants,

My Name is ----------. This research is for a partial fulfillment of Master's Degree from Addis Ababa University. I would like to tell you that we would have a short discussion with you concerning this study. Before we directly go to our discussion, I will request you to listen carefully to what going to be read to you about the purpose and general condition of the study as it will help you decide whether to participate or not. The purpose of this study is to assess facilitators and barriers to healthcare seeking for common neglected tropical diseases the health in the context your Kebeles of the district. Of your peer households, you are selected randomly to be one of the participants in the study. The study will be conducted through interviews. We are asking you for a little of your time, about thirty minutes, to help in this study. In the end, it is hoped that the information you give us could help us to do the study. All your information will be numbered and

your name will not be used. Your answers to any of the questions will not be given to anyone else and no reports of the study will ever identify you. If a report of results is published, only information about the total group will appear. The interview is voluntary. Your participation/ nonparticipation, or refusal to answer questions will have no effect now or in the future on services that you or any member of your family may receive from health post. If you need any further information you can contact the investigator through the following address.

Wagari Tafese

0912064702

Survey questionnaire collected through HEW

Annex 2: Verbal consent form

Good morning/Good afternoon

My name is Wagari Tafese Tarfa

The reason why I came here is to ask you some question related common skin Neglected tropical diseases in your Kebele. The data to be collected will be used Know the facilitators and Barriers healthcare seeking which is helps to design future strategies for eliminating barriers and bridging gaps based on the findings of this study conduct this study, I would like to ask you some questions which may take about 30 minutes. As your participation is very important to the outcome of the study, I kindly request you to give your sincere and truthful answer. All the information that you and other respondents are going to provide remains confidential and you do not need to mention your name. If you feel discomfort with the interview, since it is voluntary, please feel free to drop at any time you want without providing the reason for. Are you willing to participate in the interview?

Yes, _____ (continue the interview)

No, _____ (Thank and stop)

date_____ Time_____

Annex 3: survey questionnaire

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

SCHOOL OF PUBLIC HEALTH

Healthcare seeking for Common Skin Neglected Tropical Diseases in Kallu District, South Wollo, Amhara Region, Ethiopia 2023

Section I: Identification/General Information

Name of Woreda: _____	Name of Kebele: _____
Cluster code: _____	Household code: _____
Interviewer ID: _____	Questionnaire ID: _____
Date: (dd/mm/yy) _____/_____/_____ Start time: _____Time completed: _____	Name of a data collector:_____ Name of supervisor: _____

Section I: Socio-demographic factors (Fill in or encircle/enclose the correct Answer(s)

Question's Code	**Questions**	**Responses**
101	Sex of respondent	1. Male 2. Female
102	How old are you?	_____ years
103	What is your religion? Single response	1. Muslim 2. Christian (Orthodox) 3. Christian (Protestant) 4. Christian (Catholic) 5. Other (Specify):_____
104	What is your current marital status? Single response	1. Single 2. Married 3. Divorced 4. Widowed

105	What is the highest level of education (Grade) you have completed?	_____
106	What is your main occupation? Single response	1. Housewife 2. Farmer 3. Merchant 4. Public sector employee 5. Private sector employee 6. Religious leader 7. Daily laborer 8. Student 9. Jobless 10. Others (Specify): _____
108	Estimated monthly household income in Ethiopian Birr *(Ask all annual sources of income, exchange o Ethiopian Birr, sum-up and convert o monthly income b dividing o 12 months)*	_____Birr

Section II: Knowledge of Leprosy

CODE	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
201	Have you ever heard about leprosy of/or seen persons with leprosy in your community?	1. Yes 2. No	If yes, go to 202, if no skip to 301
202	Where did you hear about leprosy?	1. Mass media 2. Family member 3. Healthcare worker 4. Health Extension Worker (HEW) 5. Relative/friend/neighbor	

		6. Community meeting/center 7. School 8. Radio 9. TV 10. Newspaper/Newsletters 11. Local leader 12. Poster/other IEC materials 13. Other (Specify):_____ 14. Do not remember	
203	What causes Leprosy? ***(Tick all mentioned)*** ***The interviewer should not read responses, but circle what is mentioned***	1. Germs (Bacteria) 2. Hereditary 3. Immoral conduct 4. Punishment for sin of family 5. Due to curse by God 6. Contact with affected persons 7. Washing with dirty water 8. Drinking dirty water 9. Witchcraft 10. Poor hygiene 11. Unclean environment 12. Cold food 13. Bad blood 14. Other (Specify):_____ 15. Don't know	
204	What is/are symptoms of leprosy? ***(Tick all mentioned)***	1. It causes skin irritation 2. It can present as skin patches 3. Loss of sensation 4. It can lead to deformities or disfigurement 5. Always deformity 6. Other (Specify):_____ 7. Don't know	
205	Which sex is most affected by Leprosy?	1. Female 2. Male 3. I don't know	

Section II: Knowledge of Leprosy ----------Continued			
206	Which age groups are most affected by Leprosy? ***(Single response)***	1. Elderly 2. Adults 3. Adolescents 4. Children 5. All age 6. I don't know	
207	Does Leprosy transmit from person to person?	1. Yes 2. No	If yes go 207, if no go to 308
208	What is/are means of leprosy transmission? ***(Tick all mentioned)***	1. Aerosol droplets 2. Casual contact 3. Contaminated water 4. Contaminated soil 5. Sexual contact with leprosy patients 6. Prolonged close contact with leprosy patients 7. Sitting close to the leprosy patients 8. Sharing personal items such as towel, toothbrush etc. with Leprosy patients 9. Other (Specify):_____ 10. Don' know	
209	Is leprosy cured?	1. Yes 2. No 3. Sometimes 4. I do not know	
210	What is/are the treatment of leprosy? ***(Tick all mentioned)***	1. Pharmaceutical drugs 2. Traditional mode of treatment 3. Religious ritual 4. Other (Specify):_____ 5. I do not know treatment option	

Section III: Knowledge of cutaneous leishmaniasis

CODE	QUESTIONS AND INSTRUCTIONS	CODING CATEGORIES	SKIP
301	Have you ever heard of/or seen persons with skin ***cutaneous leishmaniasis*** in your community?	1. Yes 2. No	If yes, go to 302, if no skip to 401
302	Where did you hear about CL?	1. Mass media 2. Family member 3. Health worker 4. Health Extension Worker (HEW) 5. Relative/friend/neighbor 6. Community meeting/center 7. School 8. Radio 9. TV 10. Newspaper/Newsletters 11. Local leader 12. Poster/other IEC materials 13. Other (Specify):_____ 14. Do not remember	
303	What do you think is the cause of ***cutaneous leishmaniasis***? ***(Tick all mentioned)***	1. Germs 2. Sand fly 1. By mosquito bite 3. Contact with affected persons 2. Air droplet 4. Witchcraft 5. Curse 6. Poor hygiene 7. Drinking dirty water 8. Washing with dirty water 9. Bat 10. Other (Specify):_____ 11. Don't know	

304	Symptoms/signs of cutaneous leishmaniasis seen or heard ***(Tick all mentioned)***	1. Painful lesion/disfiguring 2. Painless/disfiguring 3. Painful skin lesion 4. Disfiguring skin lesion 5. Fever 6. Other 7. I don't know	
305	Which sex is most affected by cutaneous leishmaniasis?	1. Female 2. Male 3. I don't know	
306	Which age groups are most affected by cutaneous leishmaniasis? ***(Single response)***	1. Elderly 2. Adults 3. Adolescents 4. Children 5. All age 6. I don't know	
Section III: Knowledge of cutaneous leishmaniasis			
307	Does cutaneous leishmaniasis transmit from person to person?	1. Yes 2. No	
308	How cutaneous leishmaniasis can be prevented? ***Instruction: Not read responses BUT circle what was mentioned***	1. Covering mouth while coughing or sneezing 2. Avoiding hand shake with affected persons 3. Through drinking portable water 4. Avoiding swimming in rivers or swamps 5. Sleeping under bed nets 6. Sleeping in separate room from affected persons 7. Avoid sharing of cups with affected persons 8. Wearing of protective footwear in swampy farm 9. Insecticide 10. Closing door and windows 11. Ointment	

		12. Other (Specify):_____ 13. Don't know
209	Is CL cured?	1. Yes 2. No 3. Sometimes 4. I do not know
210	What is/are the treatment of C? ***(Tick all mentioned)***	1. Pharmaceutical drugs 2. Traditional mode of treatment 3. Religious ritual 4. Other (Specify):_____ 5. I do not know treatment option

Section IV: Attitude towards Leprosy

CODE	QUESTIONS AND INSTRUCTIONS	RESPONSE CATEGORIES AND SCORE

		5. Strongly agree	4. Agree	3. Neither agree nor	2. Disagree	1. Strongly disagree
401	You admit to sitting beside a leprosy patient in public transport					
302	You be ashamed if someone has leprosy in your family					
303	You admit to sharing a plate with a leprosy patient					
304	You admit to owning a child who married someone from a family with a history of leprosy					
305	You be ashamed to work with a leprosy patient in the same environment					
306	You allow your own child to play with a child from leprosy family					
307	You admit to helping if someone gets leprosy in the family					
308	You share items with a leprosy patient					

Section V: Attitude towards CL

CODE	**QUESTIONS AND INSTRUCTIONS**	**RESPONSE CATEGORIES AND SCORE**				
		5. Strongly agree	4. Agree	3. Neither agree nor	2. Disagree	1. Strongly disagree
401	CL is important health problem in your community.					

302	You may be at risk of getting CL in your community.					
303	Your community should be actively be engaged to control CL.					
304	Persons affected with CL feel ashamed for his/her skin condition.					
305	Person affected by CL face sadness.					
306	Person affected by skin CL face hopelessness.					
307	People affected by CL face self-sigma.					
308	People affected CL has fear of sigma and discrimination from the societies.					

PART 2- health seeking behaviour

Section VI: Health seeking behaviors for leprosy

CODE	QUESTIONS AND INSTRUCTIONS	RESPONSE CATEGORIES	SKIP
601	Is there anyone in the household who experienced Leprosy in the last 6 months?	1. Yes 2. No	
602	Did this person sought treatment/care?	1 Yes 2 No	
603	If yes to question No.602, from which provider did this person received care?	1. Health facility 2. Traditional healer 3. Prayer houses/faith healing 4. Home remedy 5. Other	If not health facility skip to 605

	(Multiple Response is possible)	(specify)_____	
604	If your answer for 603 not health facility, what you preferred other options for Leprosy care?	1. Costs (it is expensive) 2. Difficulties with transportation 3. Do not trust the healthcare workers 4. Do not like the attitudes of healthcare workers 5. Health facilities Working hour is not convenient 6. Others(Specify):_____	
605	What is the main reason for prefer ring traditional healer for Leprosy care?	1. Traditional healers are easily assessable 2. The cost of treatment is lower 3. The treatment is effectives 4. Others (Specify):_____	
606	If you see yourself developing any of Leprosy, at what point would you go the health facility? ***(Please circle only one)***	1. When self-treatment does not work 2. As soon as I realize the skin problem has started 3. When the problem has lasted for at least two week 4. At my convenience, specify_____	
607	Which transport means do you use when visiting providers of healthcare (for your Leprosy care) ***(Multiple responses possible, circle all mentioned)***	1. On foot 2. Using Bajaj/Vehicle 3. Using Horse/Mule/Donkey 4. Using Cart 5. Others(Specify):_____	
		6.	

Section VII health behavior for CL

CODE	QUESTIONS AND INSTRUCTIONS	RESPONSE CATEGORIES	SKIP
701	Is there anyone in the household who experienced a Leprosy and CL in the last 6 months?	1. Yes 2. No	

702	Did this person sought treatment/care?	1. Yes 2. No	
703	If yes to question No.602, from which provider did this person received care? ***(Multiple Response is possible)***	1. Health facility 2. Traditional healer 3. Prayer houses/faith healing 4. Home remedy 5. Other (specify)_____	If not health facility skip to 705
704	If your answer for 603 not health facility, what you preferred other options for CL care?	7. Costs (it is expensive) 8. Difficulties with transportation 9. Do not trust the healthcare workers 10. Do not like the attitudes of healthcare workers 11. Health facilities Working hour is not convenient 12. Others(Specify):_____	
705	What is the main reason for prefer ring traditional healer for CL care?	5. Traditional healers are easily assessable 6. The cost of treatment is lower 7. The treatment is effectives 8. Others (Specify):_____	
706	If you see yourself developing any of CL, at what point would you go the health facility? ***(Please circle only one)***	5. When self-treatment does not work 6. As soon as I realize the skin problem has started 7. When the problem has lasted for at least two week 8. At my convenience, specify_____	
707	Which transport means do you use when visiting providers of healthcare (for your CL care) ***(Multiple responses possible, circle all mentioned)***	7. On foot 8. Using Bajaj/Vehicle 9. Using Horse/Mule/Donkey 10. Using Cart 11. Others(Specify):_____	

Section VIII: Source and Types of support.

CODE	QUESTIONS AND INSTRUCTIONS	RESPONSE CATEGORIES
801	If you or your family member experiences Leprosy, do you seek or get help?	1. Yes 2. No
802	If yes for 801, from whom you seek/get support? ***(Multiple responses possible, circle all mentioned)***	1. Family/Relative 2. Neighbors 3. Friends/Peers 4. Health extension workers 5. Health professional 6. Others (Please specify): _____
803	Do have social support from any group in the community who encourage you to seek healthcare for Leprosy case?	1. Yes 2. No
804	What type of support you get from any of the above group?	1. In kind/cash/ support 2. Instrumental support 3. Emotional help 4. Psychological support 5. Informational 1. Others (Please specify): _____

DO YOU HAVE ANY QUESTIONS?

THANK YOU FOR YOUR TIME!

Annex 4: qualitative Topic guide

Name of Woreda: _____	Name of Kebele: _____
Cluster code: _____	IDI participant code: _____
Date: (dd/mm/yy) __/_____/_____ Start time: _____Time completed:_____	Name of interviewer: _____ Name of Note taker: _____
Participant charateristics	Education level: _____
Sex: _____	Marital status: _____
Age: _____	Occupation: _____

1. **How do you remember or describe the day that you first noticed the lesion(s)?**

   Probe on: What happened on that day? Can you explain the things that you did first after noticing the lesion(s)? What did you feel on the day that you first noticed the lesion(s)? and what did you feel on the day when you were confirmed with this skin disease or CL)

2. **How do you describe you're feeling about the source or cause of the disease?**

Probe on: *about the cause of the disease, …?*

- *Did you consider as serious health condition at initial stage?*
- *If yes, why did you say it is a serious health problem?*

3. **Do you think that this condition should be medically treated**

Probe on*: Was there someone who persuaded you to get treatments? Can you explain the things that you did, the places that you visited, the persons that you met, and the type of treatments that you took to treat this disease? (If you had any home remedies, it would be really important to mention that as well),*

Probe: Can you tell me w*hy you prefer to go to this treatment center/site? /*

4. **How do you see the responses from society, from your family, from your relatives and friends, after you had been diagnosed with CL**
   Probe on: *Can you describe some of the positive and negative responses you received? Who facilitated your healthcare seeking, by what why they support you*

5. **Is there any program that teaches the community about skin this skin diseases?**

Probe on*: If there is, what kind of program is available? Wow, it works?*

6. **What type of people in the household or in the neighboring encourages or support persons affected by CL to seek-care or on treatment?**

Probe on: *Family,* **Neighbors,** *Health extension worker, or peer? How?*

Would you please explain the way your family help you to find health seek?

Would you explain the way your neighbors help you to find healthcare?

7. **Is there anything you would like to ask?**

I thank you for your time!

Name of Woreda: _____	Name of Kebele: _____
Cluster code: _____	IDI participant code: _____
Date: (dd/mm/yy) __/_____/_____ Start time: _____Time completed:_____	Name of interviewer:_____ Name of Note taker: _____

Participant charateristics	Education level: _____
Sex: _____	Marital status:_____
Age: _____	Occupation: _____

1. how do you remember or describe the day that you first noticed the lesion(s)?

***Probe on**: What happened on that day? Can you explain the things that you did first after noticing the lesion(s)? What did you feel on the day that you first noticed the lesion(s)? and what did you feel on the day when you were confirmed leprosy)*

2. **How do you describe you're feeling about the source or cause of the disease?**

***Probe on:** about the cause of the disease, …? Did you consider as serious health condition at initial stage? If yes, why did you say it is a serious health problem?*

3. **Did you think that this condition should be medically treated**

***Probe on:** Was there someone who persuaded you to get treatments? Can you explain the things that you did, the places that you visited, the persons that you met, and the type of treatments that you took to treat this disease? (If you had any home remedies, it would be really important to mention that as well)* Can you tell me why you prefer to go to this treatment center/site?

4. How do you see the responses from society, from your family, from your relatives and friends, after you had been diagnosed with leprosy

***Probe on**: Can you describe some of the positive and negative responses you receive, who facilitated you for healthcare seeking, by what way they support you*

5. **Is there any program that teaches the community about skin this skin diseases?**

Probe on: If there is, what kind of program is available? Wow, it works?

6. What type of people in the household or in the neighboring encourages or support persons affected by Leprosy to seek-care or on treatment?

***Probe on:** Family,* **Neighbors,** *Health extension worker, or peer? How?*

Would you please explain the way your family help you to find health seek?

Would you explain the way your neighbors help you to find healthcare?

7.Is there anything you would like to ask or ad ?

I thank you for your time!

Annex 5: Information sheet in Amharic

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Annex 6: concent form in Amharic

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Annex 7: survey questionnaire in Amharic

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SCHOOL OF PUBLIC HEALTH

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PART 2-Health seeking behaviours

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PART 3 Source and Types of support

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Annex 8: Curriculum vitae

Personal information

Name	**Wagari Tafese Tarfa**
Telephone	+251 912064702 / 0939066806
E-mail	wagaritafese4@gmail.com

2. Desired employment / Occupational field

Veterinary Medicine, MPH candidate

3. Work Experience

- **Dates :**From February 2014 to September2021

Occupation or position held: Rational use of veterinary drug training higher expert

Main activities and responsibilities: Giving Training, document preparation, report writing, field work

Name and address of employer: Ethiopian Agricultural Authority, Addis Ababa

Type of business or sector: Government

- **Dates :**From 0ct 2012-jaunuary 2014,

Occupation or position held: Expert

Main activities and responsibilities: veterinary clinics inspection, meat inspection, clinical works.

Name and address of employer: Oromia Regional state, Kellem Wollega zone Hawa Gelan District Livestock Development and Health office

Type of business or sector: Governmental Office

4. Education and training

Date: September 2021- to current

Title of qualification awarded: candidate of Masters of Public Health, Health promotion and education specialty track

Name and type of organization: Addis Ababa University

Date: February, 01 to 05, 2021

Title of qualification awarded: Advanced Good manufacture practice (GMP) inspection

Name and type of organization SABY Management consultation

Date from September 9, to 19, 2019

Title of qualification awarded: Advanced Analytical technique: Basic Principles and Application for Quality Assessment of drug and pharmaceuticals

Name and type of organization: Indian National Institute of Pharmaceutical Education and Research (NIPER), INDIA)

Date: *From March 13to14, 2019*
Title of qualification awarded: Good Distribution practice (GDP
Name and type of organization: Veterinary Medicine Directorate, UK
Date: From February11 to 15, 2019
Title of qualification awarded: Good distribution practice (GDP).
Name and type of organization: Veterinary Medicine Directorate, UK

Date: From Oct, 28 to Nov, 1, 2019

Title of qualification awarded: Quality Management System Development and Implementation based on *ES ISO 9001:2015*
Name and type of organization: Ethiopian Standard Agency

5. Research and Publication

DVM thesis: Prevalence of bovine trypanosomosis and its vectors in two districts of East Wollega Zone, Ethiopia. Published on onderstepoort journal of veterinary research, vol 79, no 1 (2012)**http://dx.doi.org/10.4102/ojvr.v79i1.385**

Prevalence of bovine trypanosomosis and assessment of knowledge and practices of livestock owners in the control of Trypanosomosis in Assosa District of Benishangul Gumuz Regional State, Ethiopia. Published African Journal online **https://www.ajol.info/index.php/evj/issue/view/18421**.

6. Skills and competence Personal Skills

Basics skill in Microsoft office programs (MS Word, MS Excel, MS Power Point, SPSS,)

Mother tongue(s) Afaan oromo

English and Amharic

Language	Writing	Listening	Speaking	Reading	Reading
English	Excellent	Very Good	Very Good	Excellent	Excellent
Amaharic	Very Good	Excellent	Very Good	Good	Good

Reference.

Mirgissa Kaba (PhD) Addis Ababa University

E-mail: **mirgissk@yahoo.com**

Eshetu Girma Kidane (PhD): Addis Ababa University e-mail yaneteshetu@gmail.com

Ashenafi Melaku (Associate Professor, DVM, MSc)

Lecture at University of Gondar e-mail: achefmaleku@gmail.com

Annex9: Assurance of Principal Investigator

ASSURANCE OF PRINCIPAL INVESTIGATOR

I, the undersigned agree to accept all responsibilities for the scientific and ethical conduct of the research project. I provided timely progress report to my advisor and seek the necessary advice and approval from my primary advisors in the course of the