



**ST. PAUL 'S HOSPITAL MILLENNIUM MEDICAL COLLEGE,
GRADUATE STUDY PROGRAM**

**PREVALENCE AND ASSOCIATED FACTORS OF ALCOHOLIC LIVER DISEASES
AMONG CHRONIC LIVER DISEASE PATIENTS AT ST. PAUL'S HOSPITAL
MILLENNIUM MEDICAL COLLEGE GI CLINIC IN ADDIS ABABA, ETHIOPIA,
FEBRUARY , 2025**

By: Dr. Ebestu Kelemu (MD, Final year Family Medicine Resident

Addis Ababa, Ethiopia

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By: Dr. Ebestu Kelemu (MD, Final year Family Medicine Resident)

Advisors:

Mr. Abrham Getachew, MPH, MAPM: Assistant Professor of PH

Dr. Emebet Dendir, MD.MPH, Assistant professor & specialist

**A RESEARCH THESIS TO BE SUBMITTED TO THE DEPARTMENT OF FAMILY
MEDICINE, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE
SPECIALITY CERTIFICATE IN FAMILY MEDICINE; ST. PAUL'S HOSPITAL
MILLENNIUM MEDICAL COLLEGE.**

Addis Ababa, Ethiopia

February, 2025

Abstract

Background; Alcoholic liver disease describes a group of liver disorders brought on by heavy alcohol usage. It includes a variety of liver disease, such as alcoholic cirrhosis, alcoholic hepatitis, and fatty liver. Chronic liver disease refers to a range of conditions that cause progressive damage to the liver over an extended period, greater than six months. One of the main causes of chronic liver disease is alcoholic liver disease. Despite the progress made in medical research, there is still a lack of evidence regarding the exact prevalence rates and risk factors of Alcoholic liver disease in individuals with chronic liver disease in Ethiopia and at our hospital, St. Paul's Hospital Millennium Medical College.

Objective: The aim of this study is to assess the prevalence and associated factors of alcoholic liver disease among chronic liver disease patients at St. Paul's Hospital Millennium Medical College, Gastro-intestinal clinic, in Addis Ababa, Ethiopia December 4/2024 to February 4/2025

Methods: An institution based cross-sectional study was conducted among a sample of 417 chronic liver disease patients visiting St. Paul's Hospital Millennium Medical College gastro-intestinal clinic from December 4/2024 to February 4/2025. Simple random sampling technique, lottery method, was used to select those individuals. A pretested structured Interviewer-administered questionnaire was used to collect data by three professional BSC nurses. The questionnaire was adapted from existing validated instruments and modified according to the local context. Data was fed on Epi data version 3.1 and exported to SPSS 25 for analysis. Descriptive & inferential analysis of data was conducted. Bi-variable and multivariable logistic regression was done to show an association between independent and dependent variables.

Result: Of the total participants the prevalence of alcoholic liver disease among chronic liver disease patients was 10.1% (95% CI; 0.1003, 0.101). Age $\geq$ 45 years old were (AOR= 3.08, 95%CI: 1.75, 5.56), monthly income $\geq$ 20,000 birr were (AOR= 2.5, 95%CI: 1.73, 3.73) and those who live alone were (AOR= 7.4, 95%CI: 2.91, 18.87) significantly associated with alcoholic liver disease.

Conclusion; According to this study 10.1% of study participants had alcoholic liver disease. Significant associations were identified between alcoholic liver disease and several demographic factors, including age, income level, and living arrangements

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Abbreviations

GI	Gastrointestinal
MD	Medical Doctor
MPH	Master Of Public Health
CLD	Chronic Liver Disease
LC	Liver Cirrhosis
NAFLD	Non-Alcoholic Fatty Liver Disease
SPHMMC	Saint Paul's Hospital Millennium Medical College
BSC	Bachelor of Science
SPSS	Statistical Package Of Social Science
NESARC	National Epidemiologic Survey on Alcohol and Related Condition
SES	Socio Economic Level
AOR	Adjusted Odds Ratio
COR	Crude Odds Ratio
CI	Confidence Interval
LR	Logistic Regression
ETB	Ethiopian Birr

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1 Introduction

1.1 Background of the study

Alcoholic liver disease describes a group of liver disorders brought on by heavy alcohol usage. It includes a variety of liver disease, such as alcoholic cirrhosis, alcoholic hepatitis, and fatty liver. Chronic liver disease refers to a range of conditions that cause progressive damage to the liver over an extended period, greater than six months. 5–10% of all liver disease cases globally are thought to be caused by ALD. Liver disease is the leading cause of liver-related deaths worldwide [1]. Despite significant interventions such as hepatitis B vaccination and advances in antiretroviral therapy in the treatment of liver disease [2], the incidence of liver disease such as non-fatty liver and alcoholic liver disease following end-stage liver-related morbidity is increasing [3]. Recent estimates suggest that approximately 1.5 billion people living with chronic liver disease are experiencing an epidemiological shift to liver complications which is attributed to concomitant increases in drug use, inappropriate alcohol use, and metabolic syndrome, despite ongoing containment measures on the incidence of liver disease [2]. This has contributed to 4% of global deaths being attributed to liver disease, and this proportion is expected to increase due to unhealthy diets and increasing alcohol consumption [3]. Among liver diseases, alcoholic liver disease is the most common chronic liver disease and its prevalence is expected to increase due to current global alcohol consumption [5].

According to studies, the incidence of ALD is rising across Africa, especially in cities where alcohol use is on the rise. Alcohol use has increased throughout Africa, according to the World Health Organization (WHO), which is linked to a number of illnesses, including liver disease. Recent evidence has shown that approximately 38.7% of hepatitis B virus infections and 68.4% of hepatic encephalopathy associated with liver cirrhosis in healthcare settings account for 41.3% of liver disease [2]. For example, in Ghana, viral hepatitis B infection contributes to the incidence of most liver diseases and accounts for 10–12.3% of the total Ghanaian population, contributing to 3.4% of all deaths in Ghana [6, 7]. Although there are interventions to prevent and treat these diseases, they are still the leading cause of liver complications such as cirrhosis [8]. Although the liver is an important organ with multiple functions for the human body [9].

However, its disease condition impairs its functions which are attributed to causes such as viral infections, alcohol consumption, fatty foods, autoimmune diseases and drug abuse [10–14]. Most

people with liver disease are generally asymptomatic [15]. However, when diagnosed clinically, patients with acute and chronic liver disease present with clinical signs and symptoms such as yellowish eyes and skin, dark urine, pale stools, itchy skin, and elevated liver enzymes [15]. Most patients with liver disease have liver cysts and cancer [16,17]. In addition, patients with liver disease suffer from primary biliary cholestasis and sclerosing cholangitis, which eventually attacks the immune system and leads to decreased immunity [13]. In addition, chronic liver disease results in end-stage liver complications [18], leading to increased liver-related mortality [19]. As of 2020, a significant proportion of all hospital outpatients are diagnosed with various types of liver diseases, such as alcoholic and viral hepatitis. Of those clinically diagnosed with liver disease, a significant proportion was unaware of the liver disease and therefore was diagnosed at an advanced stage of the disease. Recent evidence has shown that there are studies on liver disease in Ethiopia that focus on the epidemiological characteristics and behavioral factors associated with liver disease [7,8,15].

According to a research done in Addis Ababa, between 30 and 40 percent of patients with chronic liver disease had ALD. This illustrates the effects of binge drinking and the rising trend of alcohol use in cities [5].

There is a direct correlation between the risk of developing ALD and the quantity and frequency of alcohol usage. The risk is greatly increased by heavy drinking, which is generally defined as more than 14 drinks per week for males and 7 drinks per week for women [6]. Because they might worsen the liver's reaction to alcohol and cause non-alcoholic fatty liver disease (NAFLD), which can coexist with ALD, obesity and metabolic syndrome are important risk factors for ALD [7].

Due to variations in body composition, metabolism, and hormones, women are typically more vulnerable to the negative effects of alcohol, they could develop ALD after consuming less alcohol [8].

However, there is paucity of data about the prevalence and associated factors of alcoholic liver disease in Ethiopia especially in St. Paul's Hospital. Therefore, this study aimed to determine the prevalence and associated factors of alcoholic liver disease in adult patients seeking medical care at St. Paul's hospital millennium medical college GI clinic.

1.2 Statement of the problem

Alcohol-related liver disease is now the leading indication for liver transplantation in the globe. [20] After remaining stable for over three decades, the number of alcohol-related cirrhosis deaths in the world started increasing again in the 2000s [21]. Recent increases in deaths due to alcohol-

related liver disease are most pronounced in young age groups (25–34 years) [23]. Alcohol-related liver disease is also associated with a substantial economic burden [24]. In 2015, a nationally weighted measure of privately insured individuals found that approximately US\$5 billion of direct healthcare costs were accrued by patients with cirrhosis related to alcohol-related liver disease, with a mean of \$44 835 in per-person costs in the first year after diagnosis [24]. Excessive consumption of alcohol remains the main cause of alcohol-related liver disease and associated complications and deaths [25]. Since the 1950s, fewer than 20% of Americans have maintained abstinence from alcohol for their entire lives. Increases were seen in per-capita consumption, current drinking, and heavy episodic drinking worldwide from 1990 to 2017, with continued increases projected until 2030 [26]. From 2001 to 2012, data from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) indicated that high-risk drinking and alcohol use disorder increased across the general population and in nearly all socio-demographic subgroups, with increases in high risk drinking of 30% for the overall population, 16% for men, 58% for women, and more than 15% for all age groups [7]. However, since the 1964 Surgeon General's Report Smoking and Health and the subsequent implementation of policies and social interventions, per-capita cigarette consumption has decreased by almost 75% over 40 years, implying that similar interventions in alcohol consumption might be possible with sufficient public and political will.

Given the observed increases in alcohol consumption between 2000 and 2010 and deaths associated with alcohol-related liver disease among younger people (ie, aged 25–34 years) [26]. Cirrhosis associated with alcohol-related liver disease and mortality are expected to further increase over time [23]. Rates of progression of liver fibrosis can be even more pronounced in the presence of more than one risk factor—eg, hepatitis B and C [27]. Although the evidence of alcohol's dose-response or threshold relationship with progression of liver fibrosis is unclear, even an average of two drinks or fewer per day can lead to progression of fibrosis [10].

Despite increasing levels of alcohol consumption in all age groups and an increasing global burden of alcohol-related liver diseases in terms of years of life lost [23,24,25,27], little data exist on the effect of reduction in high-risk drinking on the disease burden associated with alcohol-related liver disease in Ethiopia at our hospital. During my GI clinic attachment I encountered a lot of alcoholic liver disease patients but there was no screening for risk factors, comorbidities and no psychiatric evaluation. That's why I planned to do research on this topic

1.3 Significance of the study

This study assessed the current prevalence and associated factor of alcoholic liver disease. Knowing the prevalence of ALD informs healthcare providers about the burden of the issue and enabling them to implement more effective screening for comorbidities and management strategies. Investigation of associated factors will provided valuable insights into the risk profiles of patients with Alcoholic liver disease. This knowledge is essential for developing targeted interventions and public health initiatives aimed at reducing the incidence of ALD. The findings can guide policymakers in drafting regulations around alcohol consumption and healthcare resources. The result will serve as a reference for other researchers.

2. Literature Review

2.1 prevalence of alcohol related liver disease

Alcohol use problems affect about 5% of people worldwide and account for a significant percentage of liver disease cases [28]. About 50% of liver disease cases in high-income nations are caused by ALD, however depending on local drinking habits, the prevalence varies from 15% to 30 % [29]. ALD caused more than 1.3 million deaths globally in 2017, highlighting its detrimental effects on public health [30]

The frequency of ALD among patients with CLD varies greatly throughout Africa because of variations in access to healthcare, cultural customs, and alcohol usage. Research indicates that in different areas, the prevalence may vary between 10% and 30% [31]. One of the main causes of liver-related morbidity and mortality in sub-Saharan Africa is ALD [32], with higher rates observed in urban areas because of greater access to alcohol.

ALD has been found to be significantly prevalent among CLD patients in Ethiopia, while study findings vary. ALD was discovered in almost 30% of CLD patients [33]. A prevalence of 25% was observed in another study of patients in a tertiary care facility in Addis Ababa [34]. These results imply that ALD plays a significant role in liver disease in Ethiopia

2.2 Socio-demographic factors

The development of ALD is significantly influenced by age. Research shows that cumulative alcohol exposure over time puts older persons at greater risk. ALD was more common among those 45–65 years old than in younger cohorts [35]. Age-related physiological alterations in the elderly population may further worsen liver disease. ALD prevalence clearly shows gender differences, with men typically having higher rates than women. Men had a threefold higher risk of developing ALD than women [36]. Differences in drinking habits, societal expectations around alcohol use, and biological variables affecting alcohol metabolism could all be responsible for this discrepancy [36]. Another important factor that influences the occurrence of ALD is socioeconomic level (SES). Alcohol use and accompanying health problems are frequently more prevalent among those with lower socioeconomic status. People from lower-income backgrounds were more likely to develop

ALD because they had less access to healthcare, more stressors, and were more likely to be in dangerous drinking context [37].

Education level also plays a role in the prevalence of ALD. Lower educational attainment is often linked with increased alcohol consumption and poor health literacy. Individuals with less than a high school education were at a higher risk for developing ALD due to a lack of awareness about the harmful effects of alcohol [38]. There are proven ethnic differences in the occurrence of ALD, with some groups being more susceptible than others. According to research, Native American and Hispanic people are more likely than Caucasians to suffer from ALD [39]. These differences could be influenced by genetic predispositions and cultural views on alcohol use

Urbanization has led to increased alcohol availability and consumption, contributing to higher ALD prevalence in cities compared to rural areas [32]. Married people are generally less likely to drink than their single or divorced peers, study shows. This may be because marriage offers social and emotional support, which may promote better lifestyle choices, such as consuming less alcohol [40].

2.3 Behavioral factors

Chronic excessive alcohol intake and strong episodic drinking are the main risk factors for ALD, according to studies. Binge drinking is substantially associated with greater liver damage in people with chronic liver disease [41]. The kind of alcohol ingested may also have an impact on liver health. Due to increased ethanol concentrations, studies indicate that spirits are more harmful than wine or beer [42]. Given these differences, at-risk individuals can benefit from tailored interventions Lack of exercise and poor eating habits are associated with increased formation of liver fat and consequent liver damage. Ethiopian communities, lifestyle factors considerably increase the probability of getting ALD [43]

2.4 Clinical factors

Co-occurring liver conditions like viral hepatitis (HCV or HBV) have a significant impact on the prevalence of ALD. When alcohol use is paired with chronic viral hepatitis, patients frequently suffer from accelerated liver damage [44]. These disorders work in concert, which emphasizes the value of thorough evaluations in CLD patients to find individuals who are more susceptible to ALD.

The metabolic syndrome and obesity are becoming more widely acknowledged as important risk factors for the advancement of liver disease. Because it can result in non-alcoholic fatty liver disease (NAFLD), which exacerbates the effects of alcohol, a higher body mass index (BMI) is linked to an increased risk of developing ALD [45]. A comprehensive strategy to patient care is required due to the interaction between metabolic variables and alcohol consumption. Alcoholic liver disease (ALD) is a significant concern among patients with chronic liver disease, particularly those with comorbid conditions such as hypertension and dyslipidemia[45].

2.5 Psychosocial factors

People with ALD are more likely to suffer from mental health issues such anxiety and depression. Increased alcohol use as a coping strategy for these diseases has been shown to exacerbate liver damage [45]. Additionally, individuals who have co-occurring mental health conditions may adhere to treatment plans less well, which raises the possibility of ALD [46].

Another psychosocial element that has a big impact on patterns of alcohol use is chronic stress. High stress levels can cause people to turn to alcohol as a maladaptive coping mechanism, which increases their chance of developing ALD [47]. Developing successful interventions that address substance use and mental health requires an understanding of the connection between stress and alcohol consumption

One important factor in controlling alcohol use in CLD patients is the existence or lack of social support. Strong social networks can offer resources and emotional support to promote alcohol abstinence [48]. The importance of creating supportive environments for at-risk individuals is highlighted by the fact that social isolation can, on the other hand, result in increased drinking practices.

Increased alcohol use in adulthood has been connected to trauma and adverse childhood experiences. According to studies, those who have gone through trauma are more likely to turn to alcohol as a coping mechanism for their mental suffering [49]. The necessity of trauma-informed care for patients with ALD is highlighted by this relationship.

2.6 Conceptual Frame work

Several independent variables, such as alcohol use habits, demographic characteristics (such as age and gender), and the existence of co-morbid disorders like obesity or viral hepatitis, affect the prevalence of alcoholic liver disease (ALD) in patients with chronic liver disease. According to studies, drinking more alcohol is strongly associated with a higher risk of developing ALD, but demographic factors can also influence this risk. For example, older age groups frequently have more severe liver damage as a result of cumulative alcohol exposure and possible interactions with other medical conditions [50]. Additionally, the effects of alcohol on liver health might be worsened by the existence of co-existing medical disorders, underscoring the intricate interactions between these factors. Identification of high-risk groups and the application of successful preventative measures depend on an understanding of these links [51].

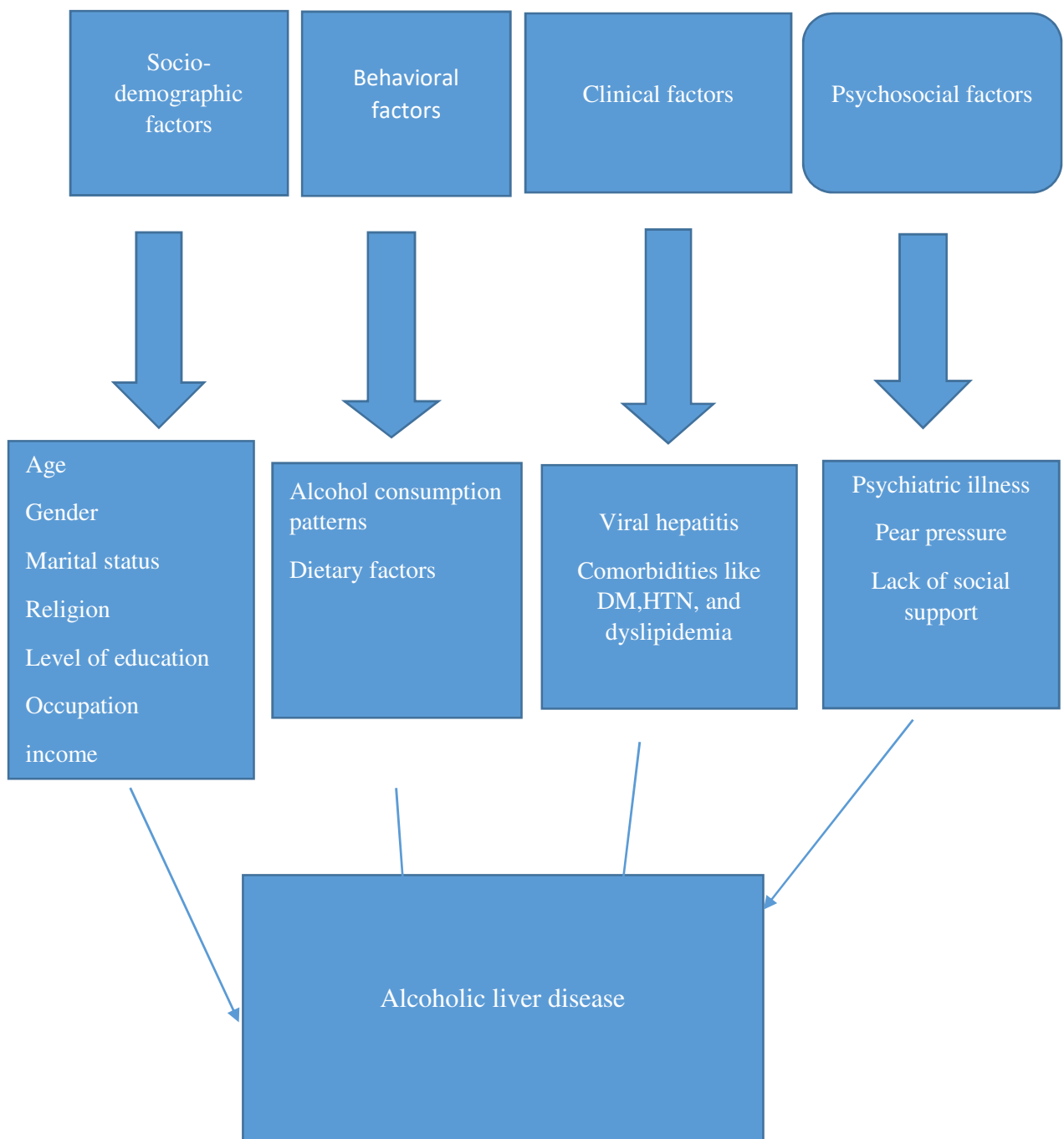


Figure 1. Conceptual Frame work on Showing Associated Factors of Alcoholic Liver Disease

3. Objective

3.1 General Objective

- The overall objective of this research is to determine prevalence and associated factors of alcoholic liver disease among chronic liver disease patients at St. Paul's hospital Millennium Medical College, Addis Ababa, Ethiopia, 2025

3.2 Specific Objectives

The Specific objectives of this study are

- ✓ To determine the Prevalence of alcoholic liver disease among adult chronic liver disease patients at St. Paul's hospital Millennium Medical College visiting GI clinic from December 4/2024 to February 4/2025
- ✓ To identify associated factors of alcoholic liver disease among adult CLD patients at St. Paul's hospital Millennium Medical College visiting GI clinic from December 4/2024 to February 4/2025

4. Methods

4.1. Study Area

The study was conducted at St. Paul's Hospital Millennium Medical College Gastro-intestinal clinic which is located at central Addis Ababa, Ethiopia. The geographic location of St. Paul's Hospital Millennium Medical College is Addis Ababa, Ethiopia $9^{\circ}2'52''\text{N}$ $38^{\circ}43'41''\text{E}$ / 9.04778°N 38.72806°E / 9.04778 ; 38.72806 . The hospital was built by Emperor Haile Selassie I in 1969 with the help of the German Evangelical Church. It aimed to serve the poor. The hospital has 350 beds sees an annual average of 300,000. It has a catchment population of more than 5 million, 1200 clinical and non-clinical staff. The Gastrointestinal (GI) Clinic within the hospital specialized in the diagnosis, treatment, and follow up of gastrointestinal disorders. There are three working days per week and 60-80 patients visit it per day, The staffs are composed of 8 Gastroenterologists 1 working at a time with shifts, GI fellows, internal medicine and family medicine residents with monthly rotation and 2 nurses.

4.2. Study Design

An institution based cross-sectional study design was used

4.3. Source Population

All CLD patients on follow up at Saint Paul's Hospital Millennium Medical College GI clinic was used as a source of population

4.4. Study Population

All CLD patients who came to St. Paul's Hospital Millennium Medical GI clinic during the data collection period was considered as the study population.

4.4.1 Inclusion criteria

All CLD patients visiting GI clinic during the study period was included

4.4.2 Exclusion criteria

Those who are critically ill and unable to give response was excluded

4.5. Sample Size Determination and Sampling Technique

4.5.1. Sample Size Determination

The required sample size (n) will be estimated using a single population proportion formula proposed by Cochran by taking a 56% proportion of ALD among CLD patients of another study [26], 0.05 level of significance (α), and 5% margin of error.

$$n = \frac{(Z_{\alpha/2})^2 p (1 - p)}{d^2} = \frac{(1.96)^2 0.56 (1 - 0.56)}{(0.05)^2} = 378$$

Where n = the desirable sample size, ($\alpha/2$) = the critical value at 95% level of significance (1.96), p = proportion of ALD (0.56), and d = precision of measurement (acceptable marginal error) (0.05). Therefore, by adding a 10% non-response rate, the final sample size for this study will be 417. Computer-generated simple random sampling technique by using their medical registration number will be employed to select the study representative sample.

4.5.2. Sampling Technique

The average patients load with CLD who attended follow up at St. Paul's Hospital millennium medical college GI OPD will be estimated by first obtaining the average patients per month and per day seen in the past 3 months. Finally, based on their patients load, sample will be allocated proportionally in each day. Finally, data was collected from eligible patients using simple random sampling technique lottery method.

4.6. Study variables

4.6.1 Dependent variable

Alcoholic liver disease

4.6.2 Independent variable

Age, gender, pattern of alcohol consumption, socio-economic status, comorbid illness and psychosocial factors are the independent variables

4.7. Operational definition

The term "alcoholic liver disease" (ALD) describes a group of liver disorders brought on by heavy alcohol usage. It includes a variety of liver disease, such as alcoholic cirrhosis, alcoholic hepatitis, and fatty liver (status). Chronic liver disease (CLD) refers to a range of conditions that cause progressive damage to the liver over an extended period, greater than six months, often leading to liver dysfunction and complications that result from a variety of causes.

Cannabis Use: - Cannabis use refers to the consumption of cannabis in any form (smoking, vaping, edibles, etc.) at least once in the past 30 days. [2]

Chewing Khat: - Chewing Khat is defined as the act of chewing fresh Khat leaves at least once a week for a duration of at least 30 minutes. [3].

Smoking Cigarettes: - Smoking cigarettes is defined as the act of inhaling tobacco smoke from commercially manufactured cigarettes at least once in the past 30 days. [4].

Performing Regular Physical Activity: - Regular physical activity is defined as engaging in moderate-intensity aerobic exercise for at least 150 minutes per week or vigorous-intensity exercise for at least 75 minutes per week, as recommended by health authorities. [5].

4.8. Data type and collection instrument

Both primary and secondary data were used for this survey. Primary data was gathered via Pre-tested interviewer-administered questionnaire and secondary data was collected from previous study, annual reports and institutional electronic medical records. The questionnaire was adapted from relevant literatures and reviewed by clinicians in CLD care to ensure its content validity. It was initially prepared in English by language experts, and translated into the local language (Amharic and Oromo languages) and then retranslated to English by another expert to ensure its consistency. Hence questionnaire was used as a method to gather the inquired data from the target respondents.

4.9. Data Analysis and Reporting

Data completeness and consistency was verified prior to attempting to enter the code and do data analysis. SPSS (statistical package software for social science) version 25. Was used to code and enter data for statistical analysis. Numerical summary measures was used to present the descriptive analyses of the data, and the examined variables' normal distribution was verified. Every statistical analysis was conducted after various assumptions have been verified. For binary logistic regression, multicollinearity and the linear relationship between the dependent variable's and independent factors was examined. In bi-variable analysis, factors having a p-value of less than 0.2 that significantly correlate with the dependent variables are added to the multi-variable analysis model. The level of significance below 0.05 was taken into consideration to ascertain the relationship between the dependent and independent variables, and a multi-variable analysis model employing the adjusted odd ratio (AOR) was used to find associated factors for the dependent variables. AOR with a 95% confidence level will be used to assess the degree of correlation between the factors and the dependent variables. Finally Written report was disseminated to the respecting parties for the necessary measures.

4.10. Ethical considerations

Ethical clearance was obtained from the St. Paul's Hospital Millennium Medical College academic and Research ethical committee with an approval number of Pm23/419 issued on 23/12/2024. There was introduction and familiarization of the data collectors . Before interviewing participants, the purpose of the study was explained in plain language until it is well understood, and informed written consent was obtained. During data collection, the study participants was informed that the information collected was kept confidential, and that the data collected was used only for the purpose of this study.

4.11. Dissemination of research finding

The findings of this study will be submitted to the Department of Family Medicine, Saint Paul's Hospital Millennium Medical College in Partial Fulfillment of the Requirements for Specialty Certificate in Family Medicine. The outcome of this study will be presented and disseminated to other concerned stakeholders through presentations in different professional forums including the annual Ethiopian Family Medicine Association conference. Additionally, as the results are expected to be inputs to the health policymakers, effort will be exerted to inform the Federal Ministry of Health regarding the overall picture of the findings. Finally, the manuscript will be submitted to a reputable peer-reviewed journal for possible publication.

5. Result

5.1 Socio-demographic and economic data of participants.

A total of 417 participants were involved in this study, making the overall response rate of 100 %. Among the study participants, nearly half 193 (46.6%) were age between 35 – 44 years old, whereas 234 (56.1%) were males and half of the study participants 211 (50.6%) were married. Majority 287 (68.8%) of study participants were orthodox religion follower, regarding educational level 200 (47.9%) of the study participants completed grade ten. More than half 262 (62.8%) of participants were merchants and 324 (77.7%) resides in urban area. Moreover, 57.9% of study participant earn monthly income of 5000- 10000 ETB. Nearly half 200 (47.6%) of study participants had degree level of educational level.

Table 1. Socio-demographic and economic characteristics of alcoholic liver diseases among chronic liver disease patients at St. Paul's hospital millennium medical college, Addis Ababa, Ethiopia (n=417)

Variable	Category	Frequency	Percent %
Age	18-24 yrs.	27	6.5
	25-34 yrs.	96	23.0
	35-44 yrs.	193	46.6
	>= 45 yrs.	101	24.2
Gender	Female	183	43.9
	Male	234	56.1
Education level	Illiterate	60	14.4
	Completed grade 10	200	47.9
	Completed grade 12	64	15.3
	Degree and above	93	22.3
Monthly income	<5,000 birr	70	16.0
	5,000- 10,000 birr	249	59.7
	10,000- 15,000birr	77	18.5
	>=20,000 birr	21	5.0
Religion	Orthodox	287	68.8

	Muslim	77	18.5
	Protestant	53	12.7
Marital status	married	211	50.6
	single	159	38.1
	divorced	25	6.0
	widowed	22	5.3
residence	Rural	93	22.3
	Urban	324	77.7

5.2 Behavioral risk factors for alcoholic liver diseases of the participants

In this study the prevalence of alcoholic liver diseases was 10.1 % with (CI; 0.1003, 0.101), of them 18 (4.3%) of the study participants had history of alcohol drinking four the past four years. The common type of alcohol drunk by those who have liver disease was local Araki with Tej 31%, followed by Tej with beer 26.2%; whereas 34 (8.2%) of study participants who had alcoholic liver disease chew Khat and smoke Cigarettes respectively. Of the study participants, 375 (89.9%) did not perform regular physical activity. Majority of study participant's drunk alcohol on daily basis. Only 8.1% of study participants had reported substance use, of them 6.7 chew Khat.

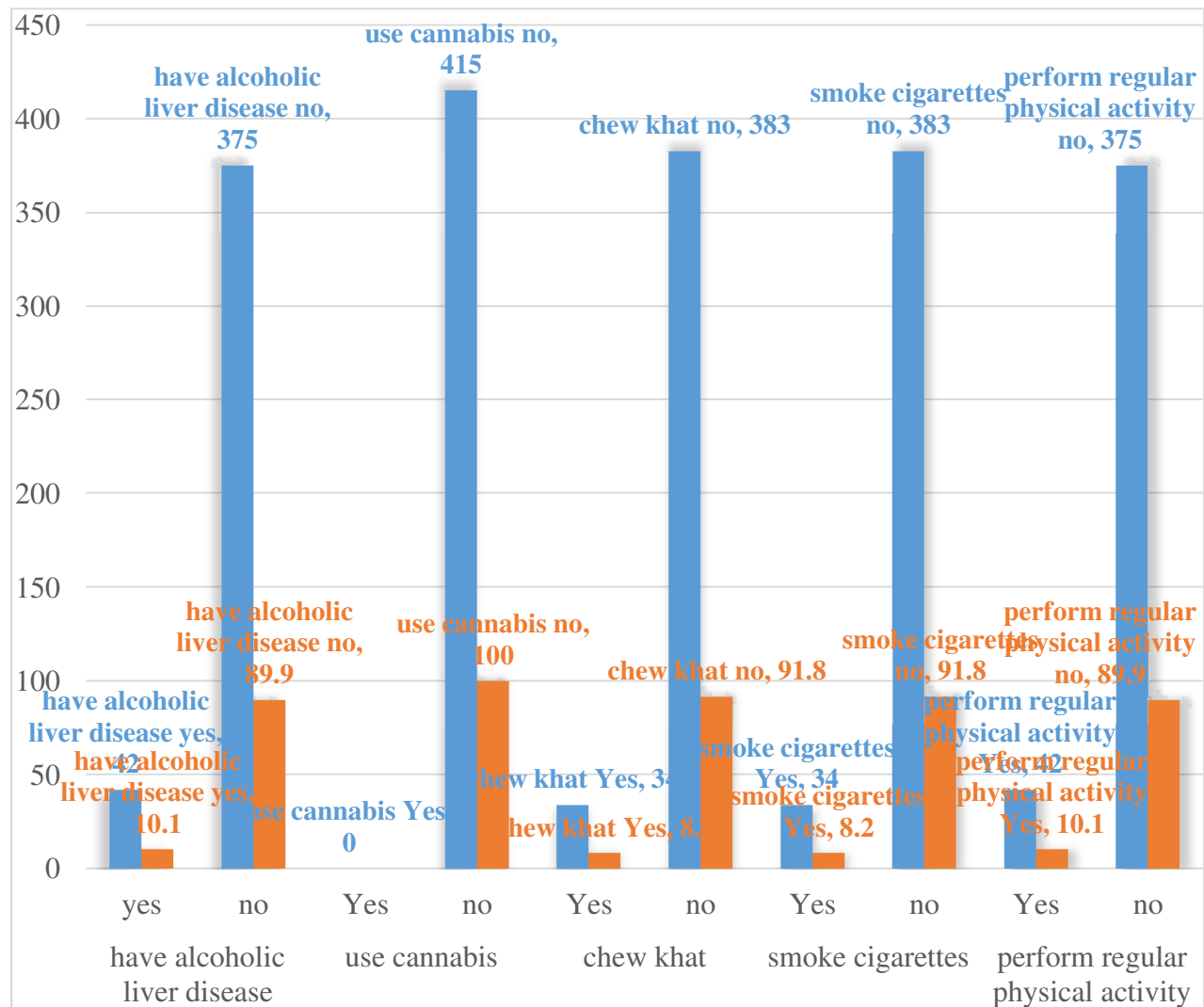
Table 2. Type of alcohol drunk by alcoholic liver diseases among patients at St. Paul's hospital millennium medical college, Addis Ababa, Ethiopia (n=417)

Type of alcohol they drink		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	wusky	9	2.2	21.4	21.4
	Local araki tej	13	3.1	31	52.4
	Local Tej with beer	11	2.6	26.2	78.6
	local ariki	9	2.2	21.4	100
	Total	42	10.1	100	
Missing	System	375	89.9		
Total		417	100		

Table 3. Behavioral risk factors of alcoholic liver diseases among chronic liver disease patients at St. Paul's hospital millennium medical college, Addis Ababa, Ethiopia (n=417)

Variable	Category	Frequency	Percentage %
have alcoholic liver disease	yes	42	10.1
	no	375	89.9
use cannabis	Yes	0	
	no	415	100
chew khat	Yes	34	8.2
	no	383	91.8
smoke cigarettes	Yes	34	8.2
	no	383	91.8
perform regular physical activity	Yes	42	10.1
	no	375	89.9

Figure 2. Behavioral risk factors of alcoholic liver diseases among chronic liver disease patients at St. Paul's hospital millennium medical college, Addis Ababa, Ethiopia (n=417)



5.3 Clinical and psychosocial characteristics of alcoholic liver diseases of the participants

Of the total study participants, majority of study participants 363 (87.0%) had viral hepatitis infection, of the total study participants more than three fourth 314 (75.3%) of study participants had hepatitis B virus infection. Majority 399 (95.6%) of study participants had no hypertension, whereas, only 21 (5.0) of study participants concomitantly had diabetes mellitus, and majority of the study had dyslipidemia 401 (96.2 %). Only 1.9 % of study participants had psychiatric evaluation, among them four had diagnosed with Anxiety disorders, three of them had Psychosis. Moreover, 300 (71.9%) of study participants lives alone and more than half 225 (54.0%) of the study participants had social support from their family

Table 4. Clinical and psychosocial characteristics of alcoholic liver diseases among chronic liver disease patients at St. Paul’s hospital millennium medical college, Addis Ababa, Ethiopia (n=417)

Variable	Category	Frequency	Percent %
Viral hepatitis	Yes	363	87.0
	No	54	12.9
Type of hepatic virus	HBV	314	75.3
	HCV	49	11.8
HTN	Yes	14	96.6
	No	399	3.4
TYPE 2 DM	yes	21	5.0
	No	396	95.0
Dyslipidemia	yes	401	96.2
	No	16	3.8
psychiatry evaluation	yes	8	1.9
	No	409	98.1
With whom are you living	Alone	117	28.1
	With family	300	71.9
have support from your family	Yes	225	54.0
	No	192	46.0

5.4 Factors associated with alcoholic liver diseases among chronic liver disease patients

To choose potential variables for multivariable analysis, variables were first examined using bi-variable analysis. Gender, age, income, occupation and whom you lived with were candidate variables for multi-variable analysis with a P-value of less than 0.25. After potential confounders were taken into account in multi-variable analysis, age, income, and whom you lived with, were identified to be significantly associated with alcoholic liver diseases through backward LR methods of multivariable binary logistic regression as stated on (Table 4).

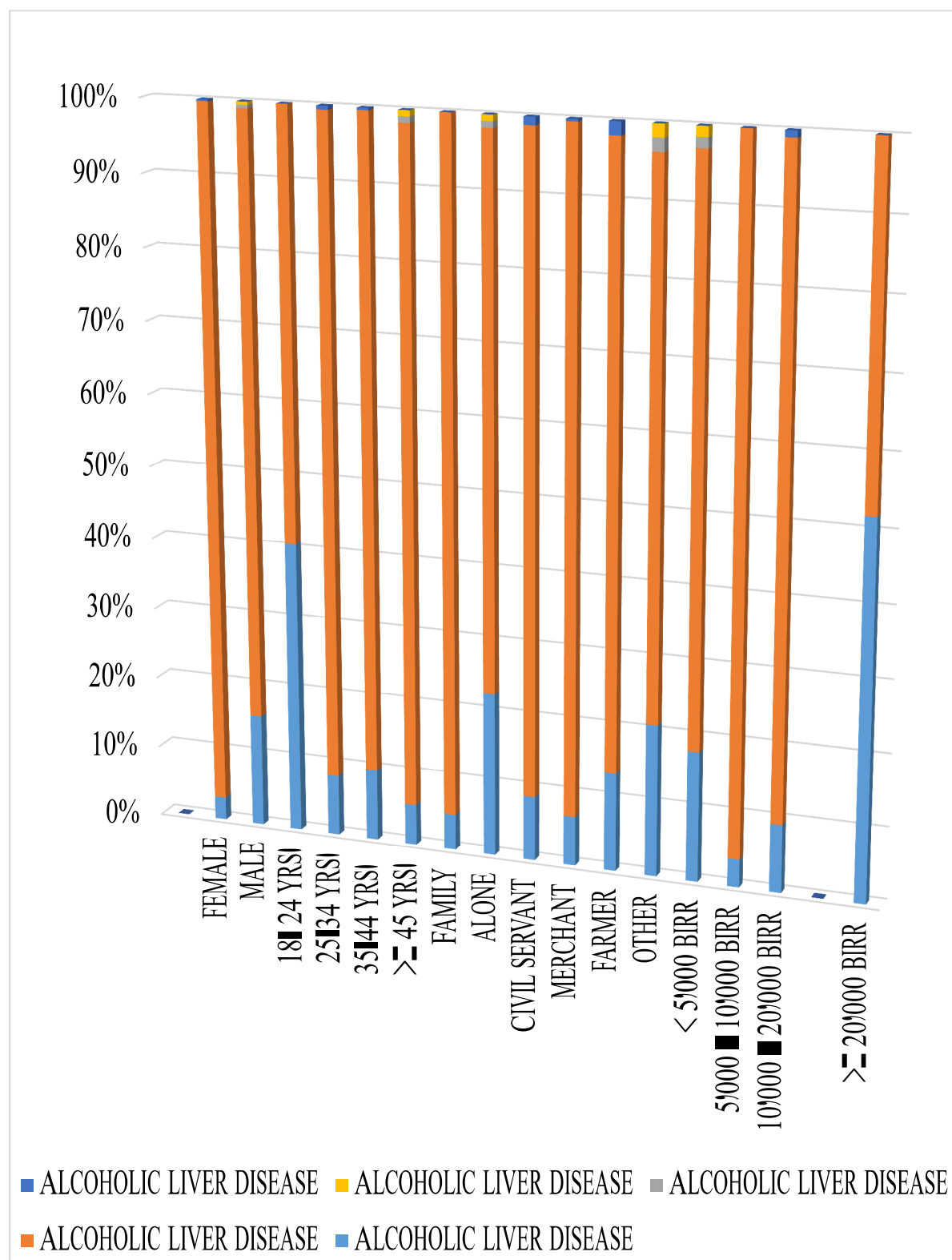
It was found that study participants age ≥ 45 years old were 3.08 (AOR= 3.08, 95%CI: 1.75, 5.56) times more likely to develop alcoholic liver disease compared to those whose age was 18-24years. . It is indicated that those who have monthly income $\geq 20,000$ birr were 2.5 (AOR= 2.5, 95%CI: 1.73, 3.73) times more likely to develop alcoholic liver disease when compared to those who have monthly income of $< 5,000$ birr. Moreover, those who live alone were 7.4(AOR= 7.4, 95%CI: 2.91, 18.87) times more likely to develop alcoholic liver disease when compared to those who live with family.

Table 5. Factors associated with alcoholic liver diseases among chronic liver disease patients at St. Paul's hospital millennium medical college, Addis Ababa, Ethiopia (n=417)

Variables		Alcoholic liver disease				
		yes	No	COR (95% CI)	AOR (95% CI)	p-value
gender	female	6	183	0.69 (0.46,1.03)	1.7(0.77, 2.70)	0.42
	male	36	192	1	1	
age	18- 24 yrs.	11	16	0.88(0.05,6.92)	0.325(0.18, 0.57)	0.001*
	25-34 yrs.	16	173	0.55(0.047,6.01)	0.99 (0.62, 1.56)	0.96
	35-44 yrs.	8	72	2.71(1.50,4.89)	1.302(0.766,2.213)	0.23
	≥ 45 yrs.	7	114	1	1	

whom you lived with	Family	15	285	0.653 (0.424,1.004)	0.135(0.05, 0.344)	0.001*
	alone	27	90	1	1	
occupation	Civil servant	8	80	1.193(0.596,2.387)	0.99 (0.62,1.65)	0.96
	merchant	16	215	0.882(0.393,1.979)	1.4(0.29, 2.666)	0.73
	farmer	6	37	2.286(1.013,5.070)	1.122(0.575,2.189)	0.78
	other	12	43	1	1	
Monthly income	< 5,000 birr	13	57	1	1	
	5,000 – 10,000 birr	10	249	0.70(0.46,1.08)	0.60(0.36,1.04)	0.06
	10,000 – 20,000 birr	6	57	4.688(1.709,12.86)	3.34(0.975,11.449)	0.55
	>= 20,000 birr	13	12	0.69(0.401,1.21)	2.5(1.73, 3.73)	0.01*
Note: * Represents variables having statistically significant association (P value <0.05). Reference groups.1 Abbreviations: COR- Crudes odds ratio, AOR- Adjusted odds ratio						

FIGURE 3. Factors associated with alcoholic liver diseases among chronic liver disease patients at St. Paul's hospital millennium medical college, Addis Ababa, Ethiopia (n=417)



6. Discussion

This study found that 10.1% with (CI; 0.1003, 0.101), of people had alcoholic liver disease (ALD). This result is consistent with other research done in different regions, but it also points out significant differences that should be discussed. Studies have shown that the frequency of ALD varies in Ethiopia, which is frequently explained by socioeconomic factors and cultural views on alcohol use. For example, a study in Addis Ababa found that the prevalence of ALD was about 8.5%, [6] which is a little lower than what we found. This can be a result of variations in the sample population's age, sex distribution, and alcohol use type and quantity. Ethiopians drink in a variety of ways, and the prevalence of traditional alcoholic beverages over commercial ones may have an impact on the course of liver disease [7, 8].

Extending the focus to Africa, a systematic review found that the prevalence of ALD varies greatly throughout the continent, with some regions having a frequency of over 20% and others having a prevalence of 5% [9]. Higher prevalence rates, frequently above 15%, have been documented in investigations conducted in South Africa and Nigeria, for instance [10]. These disparities could result from variations in public health regulations pertaining to alcohol use, diagnostic capacities, and healthcare access. Furthermore, the overall burden of ALD can vary greatly among African countries because to the sociocultural factors influencing drinking behavior.

Depending on the population and the methods used, estimates of the prevalence of ALD vary from 8% to 35% worldwide [11, 12]. Rates are typically greater in industrialized nations where binge drinking and alcohol-related health problems are more common. Studies conducted in North America and Europe, for example, frequently find percentages higher than 15% [13, 14]. The increased rates seen in these areas can be linked to lifestyle variables that worsen liver disease, such as food and obesity, as well as more accessible and liberal drinking habits.

Considering the body of research from Ethiopia, Africa, and the world, the discovery that people with age ≥ 45 years old were 3.08 times more likely to develop alcoholic liver disease compared to those whose age was 18-24 years. Research has shown that younger populations in Ethiopia typically had lower rates of ALD. ALD was far less common in those under 30 than in older cohorts, according to research done in Addis Ababa, for example [15]. Our results are consistent with this, indicating that younger people might drink differently or consume less alcohol with time.

These observed disparities may also be influenced by cultural factors, such as the kinds of alcoholic beverages consumed and the social norms around drinking among young people [16]

Numerous research support the trend of reduced ALD prevalence among younger people when looking at the larger African setting. According to a systematic analysis of ALD in numerous African nations, long-term alcohol use and associated lifestyle factors increased the risk of developing ALD in older adults, especially those over 40[9, 11, 17]. Younger groups, on the other hand, frequently exhibit distinct drinking habits, such as a preference for conventional beverages with potentially lower alcohol content or less frequent binge drinking. These dynamics may change in the future, though, since some research show a concerning trend of rising young alcohol usage in various African countries.

Our findings are typically supported by a number of research conducted in developed nations that demonstrate the association between age and the likelihood of acquiring ALD. According to research from developed nations, cumulative alcohol intake over time puts older persons at an increased risk for ALD [13, 18]. Because long-term alcohol use can cause liver damage over decades, the prevalence of ALD rises sharply beyond the age of 40. But recent research has also revealed a worrying increase in alcohol-related health problems among younger people, especially in areas where binge drinking and alcohol availability are on the rise [12, 19]. This implies that although younger people may currently have reduced rates of ALD, this tendency may reverse if present drinking habits continue.

Those who earn 20,000 birr or more per month have a 2.5-fold higher risk of developing alcoholic liver disease (ALD) than those who make less than 5,000 birr, which is both an interesting and alarming discovery. Research conducted in Ethiopia has revealed a nuanced connection between alcohol consumption trends and socioeconomic position. Heavier earners frequently have easier access to alcohol, which can result in heavier consumption and, ultimately, a higher chance of getting ALD, according to research. An Addis Ababa study [20, 21], for instance, discovered that greater income levels were linked to higher rates of chronic alcohol consumption and binge drinking, two behaviors that are major contributors to liver disease. Lower-income people, on the other hand, might not have as much access to premium alcoholic beverages and instead drink conventional or home-brewed alcohol, which varies in strength and safety. According to some research, those with lower incomes may drink less alcohol overall, but the kinds of alcohol they

drink may have different health effects [6, 22]. The general pattern of Ethiopian research, however, lends credence to the idea that greater affluence is associated with a higher risk of ALD because of higher levels of consumption.

Analyzing the larger African context reveals comparable patterns. Richer people drink more often and more heavily, according to studies conducted in a number of African countries. Higher socioeconomic position, for example, is associated with higher rates of alcohol availability and consumption, which raises the prevalence of ALD in affluent communities, according to study conducted in South Africa [21, 23]. There are differences within the continent, though. Even those with more incomes might not drink as much as those in less restrictive areas in some areas where alcohol is substantially taxed or prohibited [21]. This implies that although the prevalence of ALD is highly influenced by income, drinking behaviors are also greatly influenced by cultural attitudes towards alcohol and legal frameworks.

The connection between money and ALD is widely known worldwide. Studies in high-income nations have revealed that those who are wealthy frequently have more money to spend on alcohol, which raises consumption levels and the health concerns that go along with it [13, 14]. For instance, studies conducted in the United States show that patterns of binge drinking and lifestyle choices make people in higher income categories more susceptible to alcohol-related health problems. Nevertheless, not every region has the same relationship [12]. Due to cultural norms or religious prohibitions against drinking, more income does not always translate into higher alcohol consumption in certain low- and middle-income nations. Furthermore, in some situations, lower-income groups may have greater rates of ALD because they have less access to healthcare and preventative measures, rather than because they consume more.

The discovery that those who live alone were 7.4 times more likely to develop alcoholic liver disease when compared to those who live with family offers a significant insight into the social determinants of health. This finding encourages a closer look at how living arrangements and social support affect alcohol consumption habits and how those patterns affect liver health. Numerous studies conducted in Ethiopia have emphasized the importance of community and family institutions in affecting drinking habits. For example, studies show that shared housing frequently creates social support networks that can reduce binge drinking. Families can lessen the possibility of unhealthy drinking habits by promoting moderation or offering emotional support. Living with

family members was associated with lower levels of binge drinking than living alone, according to a study done in Addis Ababa [24-26]. This suggests that familial supervision may serve as a protective factor against ALD. Further supporting the protective effects of family structures against excessive alcohol intake are traditional Ethiopian cultural traditions that place an emphasis on community life and shared responsibility[27]. On the other hand, people who live alone could not have the social accountability that comes from family ties, which could raise their risk of ALD and increase their alcohol consumption.

The association between living arrangements and alcohol intake is complicated throughout Africa, but it typically lends credence to the idea that family living arrangements can operate as a protective factor. Research from a number of nation's shows that people who live with relatives are less likely to drink excessively than those who live alone [28, 29]. For instance, studies conducted in Nigeria have shown that family relationships and social networks are important in reducing alcohol consumption, with family members frequently acting as unofficial drinking behavior regulators. Within the continent, there are noticeable differences, nevertheless. Family structures may no longer have the same protective impact in some urbanized places where individualism is on the rise[30]. Due to financial strains, more people are choosing to live alone or in nuclear families, which raises the possibility of excessive alcohol use and ALD rates.

Around the world, research backs up the notion that social support networks, which are frequently made possible by living with family, are associated with better lifestyle choices, such as consuming less alcohol. For example, research from high-income nations has demonstrated that because of their social isolation and lack of support, people who live alone are more likely to experience alcohol-related problems. Loneliness and isolation have been linked to increased rates of binge drinking and alcohol dependence, according to U.S. research [31-33]. On the other hand, other research indicates that living with relatives does not always translate into less alcohol use. Family connections can be complicated in some situations, and if family members drink excessively, they may even be a contributing factor to hazardous drinking habits. This emphasizes how crucial it is to take into both the quantity and quality of familial ties account [34].

7. Strength of study

The study determined the prevalence and associated factors of ALD among CLD patients at one of the largest public hospital (SPHMMC) with short period of time.

8. Limitation of study

The cross-sectional design of this study limited the ability to determine causal relationships. Additionally, the research was conducted in one public hospital in Addis Ababa, which may limit the generalizability of the findings to others or private healthcare settings in Ethiopia. Hawthorn

9. Conclusion and recommendation

9.1 Conclusion

This study demonstrated that 10.1% of participants were diagnosed with alcoholic liver disease, highlighting a notable prevalence within the population examined. Furthermore, significant associations were identified between alcoholic liver disease and several demographic factors, including age, income level, and living arrangements. These findings underscore the importance of considering socio-economic and lifestyle factors in the assessment and prevention of alcoholic liver disease.

9.2 Recommendation

The results of this study clearly show that a number of demographic characteristics, such as age, income, and living situation, have a major impact on the participants' prevalence of alcoholic liver disease. According to the research, those 45 years of age and older are more vulnerable, which means that specific health interventions and educational initiatives should be created for this demographic to increase knowledge of the risks of alcohol use and its possible negative effects on health. Furthermore, the link between greater income levels and a higher risk of alcoholic liver disease emphasizes the necessity of all-encompassing public health initiatives that address both alcohol intake and lifestyle choices linked to higher income categories.

The discovery that people who live alone have a far higher chance of developing alcoholic liver disease emphasizes how crucial social assistance is in reducing health risks. This shows that there is

a need for neighborhood projects that promote support systems and social ties, especially for single people. Given the low proportion of participants who received psychiatric evaluations, health care professionals should also think about incorporating mental health assessments and assistance into standard screenings for people who are at risk. The incidence of alcoholic liver disease can be decreased and general community health outcomes can be improved by public health initiatives that address these socioeconomic determinants of health in addition to medical therapies.

10. References

1. Asrani, S.K., et al., *Burden of liver diseases in the world*. Journal of hepatology, 2019. **70**(1): p. 151-171.
2. Azofeifa-Ujueta, A., *Assessing and Characterizing Marijuana Use Disorders (DSM-5)—National Survey on Drug Use and Health, United States, 2020*. 2023: Western Michigan University.
3. Al-Motarreb, A., K. Baker, and K.J. Broadley, *Khat: pharmacological and medical aspects and its social use in Yemen*. Phytotherapy Research: An International Journal devoted to pharmacological and toxicological evaluation of natural product derivatives, 2002. **16**(5): p. 403-413.
4. Lushniak, B.D., et al., *The health consequences of smoking—50 years of progress: A report of the surgeon general*. 2014.
5. DiPietro, L., et al., *Advancing the global physical activity agenda: recommendations for future research by the 2020 WHO physical activity and sedentary behavior guidelines development group*. International Journal of Behavioral Nutrition and Physical Activity, 2020. **17**: p. 1-11.
6. Orlie, S.M.S., et al., *Unexplained chronic liver disease in Ethiopia: a cross-sectional study*. BMC gastroenterology, 2018. **18**: p. 1-12.
7. Gage, B.L., D. Gela, and T.H. Wurjine, *The magnitude and factors associated with chronic liver disease in Ethiopia: a cross-sectional study*. 2024.
8. Ayano, G., et al., *The epidemiology of alcohol consumption in Ethiopia: a systematic review and meta-analysis*. Substance abuse treatment, prevention, and policy, 2019. **14**: p. 1-16.
9. Adias, T.C., E. Egerton, and O. Erhabor, *Evaluation of coagulation parameters and liver enzymes among alcohol drinkers in Port Harcourt, Nigeria*. International journal of general medicine, 2013: p. 489-494.

10. Xiao, J., et al., *Epidemiological realities of alcoholic liver disease: global burden, research trends, and therapeutic promise*. Gene expression, 2020. **20**(2): p. 105.
11. Niu, X., et al., *Global prevalence, incidence, and outcomes of alcohol related liver diseases: a systematic review and meta-analysis*. BMC Public Health, 2023. **23**(1): p. 859.
12. Organization, W.H., *Global status report on alcohol and health 2018*. 2018: World Health Organization.
13. Zhang, N., et al., *The global burden of alcoholic liver disease: a systematic analysis of the global burden of disease study 2019*. Alcohol and Alcoholism, 2023. **58**(5): p. 485-496.
14. Griswold, M.G., et al., *Alcohol use and burden for 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016*. The Lancet, 2018. **392**(10152): p. 1015-1035.
15. Getachew, S., et al., *Prevalence and risk factors for initiating tobacco and alcohol consumption in adolescents living in urban and rural Ethiopia*. Public health, 2019. **174**: p. 118-126.
16. Nuri, A., et al., *Magnitude, patterns, and factors associated with liver disease among clinically suspected clients in Eastern Ethiopia: hidden public health tragedy*. BMC gastroenterology, 2025. **25**(1): p. 36.
17. Younossi, Z.M., et al., *The global burden of liver disease*. Clinical Gastroenterology and Hepatology, 2023. **21**(8): p. 1978-1991.
18. Degenhardt, L., et al., *The global burden of disease attributable to alcohol and drug use in 195 countries and territories, 1990–2016: a systematic analysis for the Global Burden of Disease Study 2016*. The Lancet Psychiatry, 2018. **5**(12): p. 987-1012.
19. Anderson, P., E. Scafato, and L. Galluzzo, *Alcohol and older people from a public health perspective*. Annali dell'Istituto superiore di sanita, 2012. **48**: p. 232-247.
20. FIRDU, D.N., *ALCOHOL USE AND ASSOCIATED FACTORS DURING PREGNANCY AT KOLFE KERANIYO SUB CITY IN ADDIS ABABA, ETHIOPIA, 2017*. 2017, Addis Ababa University.
21. Allen, L., et al., *Socioeconomic status and alcohol use in low-and lower-middle income countries: a systematic review*. Alcohol, 2018. **70**: p. 23-31.

22. Legas, G., et al., *Magnitude and correlates of alcohol use disorder in south Gondar zone, northwest Ethiopia: a community based cross-sectional study*. PLoS One, 2021. **16**(9): p. e0257804.
23. Rashied, N., *Socio-economic determinants of alcohol consumption for South Africa*. International Journal of Alcohol and Drug Research, 2023. **11**(2): p. 57–69-57–69.
24. Bitew, M.S., et al., *Consumption of alcohol and binge drinking among pregnant women in Addis Ababa, Ethiopia: Prevalence and determinant factors*. PLoS One, 2020. **15**(12): p. e0243784.
25. KIBET, L.J., *EFFECTS OF EXPRESSED FAMILY EMOTIONS ON RELAPSE OF CLIENTS WITH ALCOHOL USE DISORDER IN UASIN GISHU COUNTY, KENYA*. 2023, The Catholic University of Eastern Africa.
26. Teferra, S., et al., *Hazardous alcohol use and associated factors in a rural Ethiopian district: a cross-sectional community survey*. BMC Public Health, 2016. **16**: p. 1-7.
27. Health, W.H.O.D.o.M. and S. Abuse, *Global status report on alcohol 2004*. 2004: World Health Organization.
28. Ajayi, A.I., E.O. Owolabi, and O.O. Olajire, *Alcohol use among Nigerian university students: prevalence, correlates and frequency of use*. BMC public health, 2019. **19**: p. 1-11.
29. Govera, H., *The association between socioeconomic factors, alcohol use and alcohol-related outcomes in South Africa*. 2021.
30. Desai, R., et al., *Social network determinants of alcohol and tobacco use: A qualitative study among out of school youth in South Africa*. PloS one, 2020. **15**(10): p. e0240690.
31. Jarnecke, A.M., D.G. Brown, and A.J. Melkonian, *11 Family and Social Processes in Recovery from Alcohol Use Disorder*. Dynamic pathways to recovery from alcohol use disorder: Meaning and methods, 2022: p. 200.
32. Jokinen, T., et al., *A systematic review of household and family alcohol use and adolescent behavioural outcomes in low-and middle-income countries*. Child psychiatry & human development, 2021. **52**: p. 554-570.
33. Cohen, S. and T.A. Wills, *Stress, social support, and the buffering hypothesis*. Psychological bulletin, 1985. **98**(2): p. 310.

34. Young-Wolff, K.C., M.-A. Enoch, and C.A. Prescott, *The influence of gene–environment interactions on alcohol consumption and alcohol use disorders: A comprehensive review*. Clinical psychology review, 2011. **31**(5): p. 800-816.
31. Kumar, S., et al. (2020). Alcoholic Liver Disease in Sub-Saharan Africa: A Systematic Review. *African Journal of Gastroenterology*, 15(2), 78-85
32. Ojo, O., et al. (2021). Epidemiology of Alcoholic Liver Disease in Sub-Saharan Africa: A Review of the Literature. *World Journal of Hepatology*, 13(8), 684-694
33. Assefa, A., et al. (2020). "Prevalence of Alcoholic Liver Disease among Patients with Chronic Liver Disease in Ethiopia." *Ethiopian Journal of Health Sciences*, 30(3), 345-352.
34. Tadesse, M., et al. (2021). "Clinical Profile and Prevalence of Alcoholic Liver Disease among Patients Admitted for Chronic Liver Disease." *BMC Gastroenterology*, 21(1), 45.
35. Kim, J., et al. (2019). Age-Related Factors in Alcoholic Liver Disease: A Comprehensive Review. *Liver International*, 39(5), 850-857
36. Ghosh, S., et al. (2021). Gender Disparities in Alcoholic Liver Disease: A Systematic Review. *Journal of Hepatology*, 74(3), 690-701
37. Lee, H., et al. (2022). Socioeconomic Status and Its Impact on Alcoholic Liver Disease: A Population-Based Study. *BMC Public Health*, 22(1), 1234
38. Patel, S., et al. (2018). Education Level and Risk of Alcoholic Liver Disease: Evidence from a Cohort Study. *Alcoholism: Clinical and Experimental Research*, 42(12), 2356-2364

39. Sullivan, L., et al. (2020). Ethnic Disparities in Alcoholic Liver Disease: A Review of the Literature. **American Journal of Gastroenterology**, 115(11), 1755-1763
40. Roebuck, M. C., et al. (2016). "Marital Status and Alcohol Consumption: A Longitudinal Study." **Journal of Substance Abuse Treatment**, 64, 25-31
41. Rehm, J., et al. (2010). "The relationship between alcohol consumption and liver disease." **Alcohol Research Health**.
42. Pérez, M., et al. (2018). "Type of alcoholic beverage and its impact on liver health." **Alcoholism: Clinical and Experimental Research**
43. Yimer, G., et al. (2022). Lifestyle Factors and Their Association with Alcoholic Liver Disease Among Patients in Ethiopia: A Case-Control Study. **Journal of Clinical Gastroenterology**, 56(5), e450-e458
44. O'Shea, R. S., et al. (2016). "Substance abuse and alcoholic liver disease." **Clinical Gastroenterology and Hepatology**
45. Friedmann, P. D., et al. (2019). "Mental health and substance use disorders in patients with liver disease." **Journal of Substance Abuse Treatment**
46. Harris, K. M., et al. (2020). "Mental health comorbidities in patients with liver disease." **Liver International**
47. Kendler, K. S., et al. (2015). "Stressful life events and genetic vulnerability: A longitudinal study." **Psychological Medicine**
48. Cohen, S., et al. (2016). "Social support and health: A review." **American Journal of Public Health**

Health*

49. Brown, J., et al. (2015). The efficacy of cognitive-behavioral therapy for alcohol use disorder:

A systematic review and meta-analysis. *Journal of Substance Abuse Treatment*, 59, 40-50.

50. Ruhl, C. E., Everhart, J. E. (2015). Epidemiology of Alcoholic Liver Disease. *Hepatology*, 62(4), 1063-1070.

51. Liu, Y., et al. (2020). The impact of alcohol consumption on the progression of chronic liver disease: A systematic review and meta-analysis. *Liver International*, 40(3), 564-575

10. Annex

ASSURANCE OF PRINCIPAL INVESTIGATOR

The undersigned agrees to accept responsibility for the scientific ethical clearance and technical conduct of the research project and for the provision of required progress reports as per terms and conditions of the research publications office in effect at the time of grant is forwarded as the result of this application

Name of the student: Dr. Ebestu Kelemu

Date: _____ Signature: _____

Approval of the primary Advisor

Name of the primary advisor: Mr. Abraham Getachew

Date: March 05/2025 Signature:

eSigned by:
Abrham Getachew
DE06D8F6C8DD4D...

Annex 1: Information sheet for the participants

My name is _____. I am working as data collector in the research conducted by Ebestu Kelemu, who is conducting his research for partial fulfillment of the requirements for Department of Family Medicine, Saint Paul's Hospital Millennium Medical College in Partial Fulfillment of the Requirements for a Specialty Certificate in Family Medicine. This study aims to determine the prevalence and associated factors of alcoholic liver disease among chronic liver disease patients at St. Paul hospital millennium medical college, Gastro-intestinal clinic Addis Ababa, Ethiopia, 2024. And kindly request you to participate in this study which is voluntary and involves no risk to you. You have the right to refuse the participation. If I ask you any question you don't want to answer. Just let me know and I will go to the next question or you can stop the interview at any time without any consequences. The information you provide is strictly confidential and will be useful to us in assessing the magnitude of protocol based breaking bad news in SPHMMC. The questionnaire/ interview will take about 35-45 minutes to fill. Persons to contact: If you have any question you can contact and ask at any time you want.

Name: Ebestu Kelemu:

Phone number: +251913209618

Email: kelemuhibistu@gmail.com

Annex 2: Informed consent

The above information regarding my participation in the study is clear to me. I have been given a chance to ask question and our question have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept privately and I can leave the study at any time. I understand that I will still get the same treatment whether I decide to leave the study or not.

Date----- Signature-----Investigator's statement I, the undersigned, have explained to the volunteer in a language he/she understands procedures to be followed in the study and the benefits involved.

Name of the interviewer-----Date----- Interviewer signature-----

Annex 3 English version questioner

PART 1: SOCIO-DEMOGRAPHIC INFORMATION

S.no	Questions	Response category	Skip
1	Age in years		
2	Sex	1. Male 2. Female	
3	religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic 5. Other	
4	Marital status:	1. Single 2. Married 3. Divorced 4. Widowed	
5	Educational status	1. Illiterate 2. Completed grade 10 3. Completed grade 12	

		4. Diploma 5. Degree 6. Masters	
6	Occupation	1. Merchant 2. Farmer 3. Civil servant 4. Other (specify)	
7	Average monthly income	----- (In Ethiopian Birr)	
8	Place of residence	1. Urban 2. Rural	

PART 2: questions on behavioral risk factors

S.no	Questions	Response category	Skip
1	do you have alcoholic liver disease	1. Yes 2. No	
2	If your answer to Q1 is yes 2.1 for how long you were drinking alcohol		If No skip to Q3
	2.2 how frequent are you drinking		
	2.3 what type of alcohol you use		
	2.4 how much you take per day		
	2.5 Do you use cannabis	1. Yes 2. No	
	2.6 Do you chew khat	1. Yes 2. No	
	2.7 Do you use opioids like tramadol	1 Yes 2 No	

	2.8 Do you perform regular physical activity	5. Yes 6. No	
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PART 3: clinical question

S.no	Questions	Response category	Skip
1	Viral hepatitis	1 Yes 2 No	If No skip to Q3
2	If your answer to Q1 is yes 2.1 Which hepatic virus do you have?	1. HBV 2. HCV 3. Both	
3	HTN	1 YES 2 NO	
4	TYPE 2 DM	1 YES 2 NO	
5	DYSLIPIDEMIA	1 YES 2 NO	

PART 4 : psychosocial questions

S.no	Questions	Response category	Skip
1	Do you have any psychiatry evaluation	1.Yes 2. No	
2	If your answer to Q1 is yes 2.1 Any psychiatric illness	1. YES 2. NO	

	If your answer to Q2.1 is yes 2.1.1 What psychiatric illness do you have?	1. MDD 2. Anxiety disorders 3. Psychosis 4. Personality disorders 5. Other	
3	With whom are you living	1. Alone 2. With family	
4	Do you have support from your family	1.Yes 2.No	

Annex 4. Information sheet for the participants in Amharic

ለተሳታፊዎች የመረጃ ወረቀት

የኔ ስም _____ በቤተሰብ ሕክምና ክፍል የቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ በቤተሰብ ሕክምና ልዩ የምስክር ወረቀት ለማግኘት የሚያስፈልጉትን መስፈርቶች በከፊል ለማሟላት ጥናቱን በሚያካሂደው በአብስቱ ቀለሙ ባደረገው ጥናት መረጃ ሰብሳቢ ሆኜ እየሰራሁ ነው። . ይህ ጥናት በቅዱስ ጳውሎስ ሆስፒታል ሚሊኒየም ሜዲካል ኮሌጅ, Gastro-intestinal clinic Addis Ababa, Ethiopia, 2024 ሥር በሰደደ የጉበት በሽታ ህመማን ላይ የአልኮሆል ጉበት በሽታ ስርጭትን እና ተያያዥ ምክንያቶችን ለማወቅ ነው። በፈቃደኝነት እና ለእርስዎ ምንም አይነት አደጋን አያካትትም. ተሳትፎውን አለመቀበል መብት አለህ። ማንኛውንም ጥያቄ ብጠይቅህ መመለስ አትፈልግም። ብቻ አሳውቀኝ እና ወደሚቀጥለው ጥያቄ እሄዳለሁ ወይም በማንኛውም ጊዜ ያለ ምንም መዘዝ ቃለ መጠይቁን ማቆም ትችላለህ። ያቀረቡት መረጃ በጥብቅ ሚስጥራዊ ነው እና በSPHMMC ውስጥ በፕሮቶኮል ላይ የተመሰረተ ሰበር ዜና ምን ያህል እንደሆነ ለመገምገም ይጠቅመናል። መጠይቁ/ቃለ መጠይቁ ለመሙላት ከ35-45 ደቂቃ ይወስዳል። የሚያገኟቸው ሰዎች፡ ማንኛውም አይነት ጥያቄ ካሎት በፈለጉት ጊዜ ማነጋገር እና መጠየቅ ይችላሉ

በመረጃ የተደገፈ ስምምነት

በጥናቱ ውስጥ ያለኝን ተሳትፎ በተመለከተ ከላይ ያለው መረጃ ለእኔ ግልጽ ነው። ጥያቄ እንደጠይቅ እድል ተሰጥቶኝ ጥያቄያችንም እርካታ አግኝቶልኛል። በዚህ ጥናት ውስጥ የእኔ ተሳትፎ ሙሉ በሙሉ በፈቃደኝነት ነው. መዝገቦቼ በግል እንደሚቀመጡ ተረድቻለሁ እናም ጥናቱን በማንኛውም ጊዜ መተው እችላለሁ። ጥናቱን ለመተው ብወስንም አልወሰንኩም አሁንም ተመሳሳይ ህክምና እንደምገኝ ይገባኛል።

ቀን - - ፊርማ - - - -የመርማሪው መግለጫ I, ከታች የተፈረመ , በጥናቱ ውስጥ ሊከተሏቸው የሚገቡ ሂደቶችን እና ጥቅሞችን በሚረዱበት ቋንቋ ለበጎ ፈቃደኞች አስረድተዋል. የቃለ-መጠይቁ አድራጊው ስም----- ቀን-----
-- የቃለ-መጠይቅ ፊርማ -----

Annex 5. Amharic version questioner

ክፍል አንድ : ማህበራዊና ህዝብ ነክ መረጃ

ተ.ቁ	ጥያቄ	መልስ
1	ዕድሜ	
2	ጾታ	1. ወንድ 2. ሴት
3	ሃይማኖት	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ
4	የጋብቻ ሁኔታ	1. ያላገባ/ች 2. ያገባ/ች 3. የተፋታ/ች 4. የሞተበት/የሞተባት
5	የትምህርት ደረጃ	1. ያልተማረ 2. 10ኛ ክፍል የጨረሰ 3. 12ኛ ክፍል የጨረሰ 4. ዲፕሎማ 5. ዲግሪ 6. ማስተርስ
6	ስራ	1. ነጋዴ 2. ገበሬ 3. የመንግስት ሰራተኛ 4. ሌላ
7	አማካይ የወር ገቢ	----- (በኢትዮጵያ ብር)
8	የመኖሪያ ቦታ	1. ከተማ 2. ገጠር

ክፍል ሁለት: አስጊ ሁኔታ ጥያቄዎች

ተ.ቁ	ጥያቄ	መልስ	አለፍ/ፊ
1	የአልኮል ጉብት በሽታ አለብህ	1. አዎ 2. አይደለም	

2	ለጥያቄ ቁጥር 1 መልስዎ አዎ ከሆነ 2.1 ለምን ያክል ጊዜ ጠጣክ/ሽ		አይደለም ካሉ ወደ ጥያቄ 3 ይለፉ
	2.2 በየ ስንት ቀን ትጠጣለክ/ሽ		
	2.3.የምትጠቀመው አልኮል ምን ነው		
	2.4 በቀን ምን ያክል ትጠጣለክ/ሽ		
	2.5 አደንዛዝ ፅፅ ትጠቀማለክ/ሽ	1. አዎ 2. አይደለም	
	2.6 ጫት ትቅማለክ/ሽ	1. አዎ 2. አይደለም	
	2.7 እንደ ትራማዶል አይነት እንቅልፍ የሚያመጡ መዳኒት ትጠቀማለክ	1. አዎ 2. አይደለም	
	2.8 መደበኛ የአካል እንቅስቃሴ ታደርጋለክ/ሽ	1. አዎ 2. አይደለም	

ክፍል ሦስት: ከሊኒካዊ ጥያቄዎች

ተ.ቁ	ጥያቄ	መልስ	እለፍ/ ፊ
1	የጉብት ቫይረስ አለብክ/ሽ	1. አዎ 2. አይደለም	አይደለም ካሉ ወደ

			ጥያቄ 3 ይለፉ
2	ለጥያቄ ቁጥር 1 መልስዎ አዎ ከሆነ 2.1 የትኛው የጉበት ቫይረስ	1. ሄፕታይተስ ቢ ቫይረስ 2. ሄፕታይተስ ሲ ቫይረስ 3. ሁለቱም	
3	የደም ግፊት አለብክ/ሽ	1 አዎ 2 አይደለም	
4	የስኳር በሽታ አለብክ/ሽ	1 አዎ 2 አይደለም	
5	ኮለስትሮል አለብክ/ሽ	1 አዎ 2 አይደለም	

ክፍል አራት: ሳይኮሎጂና ማህበራዊ ጥያቄዎች

ተ.ቁ	ጥያቄ	መልስ	አለፍ/ፊ
1	የአዕምሮ ምርመራ አርገክ/ሽ ታውቃለክ/ሽ	1. አዎ 2. አይደለም	
2	ለጥያቄ ቁጥር 1 መልስዎ አዎ ከሆነ 2.1 የታወቀ የአዕምሮ በሽታ አለብክ/ሽ	1. አዎ 2. አይደለም	
	ለጥያቄ ቁጥር 1 መልስዎ አዎ ከሆነ 2.1.1 ምን ዓይነት የአዕምሮ በሽታ	1 ድብርት 2 ጭንቀት 3 ንጉሥን የሚያሳጣ የአዕምሮ በሽታ 4 የግል ባሪ በሽታ 5 ሌላ	

3	ከመገንኛውም ጋ ነው የምትኖረው/የምትኖረው	1 ብቻየን 2 ከቤተሰብ ጋ	
4	የሚደግፍክ/ሽ ቤተሰብና አለ	1. አዎ 2. አይደለም	

Annex 6 Information sheet for the participants in oromic

Waraqaa odeeffannoo hirmaattotaaf

Maqaan koo _____ Qorannoo ebesStu qelemu, kan qorannoo isaa gartokkoon guutuuf ulaagaalee Kutaa Fayyaa Maatii, Hospitaala Qulqulluu Phaawuloos Kolleejjii Meedikaalaa Mileniyeemii Gartokkoon Guutuu Ragaa Addaa Qoricha Maatii Gartokkoon Guutuu keessatti gaggeessaa jiru keessatti akka walitti qabaa odeeffannoo ta'ee hojjechaa jira . Qorannoon kun dhukkubsattoota dhukkuba kalee yeroo dheeraa dhukkubsattoota dhukkuba kalee yeroo dheeraa hospitaala Qulqulluu Phaawuloos kolleejjii yaalaa mileniyeemii, kilinika garaachaa Addis Ababa, Ethiopia, 2024. Akkasumas qorannoo kana irratti akka hirmaattan kabajaan isin gaafanna innis fedhii offiitiin kan raawwatamu yoo ta'u, balaa sirra ga'u kan hin qabne ta'uu ibsameera. Hirmaannaa diduu mirga qabdu. Gaaffii ati deebisuu hin barbaanne yoon si gaafadhe. Naaf himaa qofa gara gaaffii itti aanutti nan deema ykn bu'aa tokko malee yeroo barbaaddanitti interview dhaabuu dandeessu. Odeeffannoon isin kennitan iccitii cimaa kan qabuu fi guddina oduu badaa cabsuu pirootokoolii irratti hundaa'e SPHMMC keessatti madaaluu keessatti nuuf faayidaa qaba. Gaaffiin/ gaaffii fi deebii guutuuf gara daqiiqaa 35-45 fudhata. Namoota qunnamuu qabdan: Gaaffii yoo qabaattan yeroo barbaaddanitti qunnamuu fi gaafachuu dandeessu.

Hayyama odeeffannoo qabu

Hirmaannaa koo qorannicha ilaalchisee odeeffannoon armaan olii naaf ifaadha. Carraan gaaffii gaafachuu naaf kennamee gaaffiin keenyas deebii naaf quufa argateera. Qo'annoo kana keessatti hirmaachuun koo guutummaatti fedhii kooti. Galmeen koo dhuunfaan akka qabamu fi yeroo barbaadetti qo'annoo sana gadhiisuu akkan danda'u nan hubadha. Qorannicha dhiisuuf murteessus dhiisus ammallee wal'aansa wal fakkaatu akkan argadhu nan hubadha.

Guyyaa-----Mallattoo-----Ibsa qorataa I, kan armaan gaditti mallatteesse , tola ooltummaaf afaan hojimaata qorannicha keessatti hordofamuu qabuu fi bu'aa isaa hubatuun ibsaniiru.

Maqaa gaafataa-----Guyyaa----- --Mallattoo gaafataa-----

Annex 7 Oromo version questioner

KUTAA 1: AFFANNOO HAWAASII-DIMOGRAAFII

lakkoofsa tartiiba	Gaaffilee	Gosa deebii kennuu	Irra darbuu
1	Umuriin waggaadhaan		
3	Walqunnamtii saalaa	1. Dhiira 2. Dubartii	
3	amantaa	1. Ortodoksi 2. Muslima 3. Pirootestaantii 4. Kaatolikii 5. kan biraa	
4	Haala gaa'elaa	1. Tokkichaed 2. Fuudhaa fi heeruma 3. . Hiikkaan 4. Dubartii abbaan manaa irraa du'e	
5	Haala barnootaa	1. Dubbisuu fi barreessuu kan hin dandeeny 2. Kutaa 10ffaa xumur 3. Kutaa 12ffaa xumure 4. Dippiloomaa 5. Digirii 6. Gooftota	
6	Hojii	1. Daldalaa 2. Qonnaan bulaa 3. Hojjetaa mootummaa 4. Kan biroo (ibsi)	
7	Galii ji'aa giddu galeessaa	Birrii Itoophiyaa keessatti	
8	Bakka jireenyaa	1. Magaalaa 2. Baadiyyaa	

KUTAA 2: Gaaffilee sababoota balaa amala irratti ka'an

lakkoofsa tartiiba	Gaaffilee	Gosa deebii kennuu	Irra darbuu
1	dhukkuba kalee alkoolii qabaa	1. Eeyyee 2. Lakki	
2	Gaaffii If deebiin kee eeyyee yoo ta'e 2.1 yeroo hammamiif dhugaa turte dhugaatii nama macheessu		If No skip to Q3
	2.2 meeqa yeroo baay'ee dhugaa jirta		
	2.3 gosa alkoolii akkamii fayyadamta		
	2.4 guyyaatti meeqa akka fudhattu		
	2.5 Kaanaabis ni fayyadamtaa	1. Eeyyee 2. Lakki	
	2.6 Khaat ni daaku	1. Eeyyee 2. Lakki	
	2.7 Opioids akka tramadol fayyadamtuu	1. Eeyyee 2. Lakki	
	2.8 Sochii qaamaa idilee ni raawwatta	1. Eeyyee 2. Lakki	

KUTAA 3: Gaaffii kilinikaa

lakkoofsa tartiiba	Gaaffilee	Gosa deebii kennuu	Irra darbuu
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1	Dhukkuba tiruu vaayirasii	1. Eeyyee 2. Lakki	Yoo Lakki ta'e gara Gaaffii 3tti darbi
2	Yoo deebiin kee G1f eeyyee ta'e 2.1 Vaayirasii garaachaa kam qabdu?	1. vaayirasii dhukkuba tiruu B 2. vaayirasii dhukkuba tiruu C 3. Lachuu	
3	Dhiibbaa dhiigaa qabdaa	1. Eeyyee 2. Lakki	
4	Dhukkuba Sukkaaraa GOSA 2ffaa qabdaa	1. Eeyyee 2. Lakki	
5	Dhibee dhiigaa (dyslipidemia) qabdaa	1. Eeyyee 2. Lakki	

KUTAA 4FFAA : Gaaffilee saayikooshawaasummaa

lakkoofsa tartiiba	Gaaffilee	Gosa deebii kennuu	Irra darbuu
1	Madaallii yaala sammuu qabduu	1. Eeyyee 2. Lakki	
2	Yoo deebiin kee G1f eeyyee ta'e 2.1 Dhukkuba sammuu kamiyyuu?	1. Eeyyee 2. Lakki	
	2.1 Yoo deebiin kee G2.1 eeyyee ta'e	1. dhibee dhiphina sammuu guddaa	

	2.2 .1 Dhukkuba sammuu akkamii qabda?	2. Dhibee yaaddoo 3. Dhibee saayikoosii 4. Rakkoo dhuunfaa 5. Kan biraa	
3	Eenyu waliin jiraachaa jirta	1. Kophaa isaa 2. Maatii waliin	
4	Deeggarsa maatii keessan irraa qabduu	1. Eeyyee 2. Lakki	