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Socioeconomic And Demographic Factors And Social Dynamics Associated With Hiv Prevalence In East Hararge, Ethiopia

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Abstract

This paper investigates the association between socioeconomic and demographic factors, social dynamics, and HIV prevalence in East Hararge, Ethiopia, using data from Hiwot Fana Specialized University Hospital. Majority of HIV-positive individuals fell within the 19-49 age group, with males having the highest prevalence. Factors like unprotected sex, drug abuse, and limited HIV prevention access contributed to the higher prevalence in this age group. Progress in preventing mother-to-child transmission was evident, as fewer children under 12 had HIV.

Gender disparity was observed, with males having a higher prevalence, linked to gender-based violence, restricted healthcare access, and social stigma. Most respondents displayed a healthy weight range, reflecting positive nutrition efforts. Higher HIV prevalence among married and divorced individuals might be linked to infidelity and limited prevention access. Targeting young, unmarried individuals could aid in preventing HIV transmission. Lower education levels correlated with higher HIV prevalence, indicating the need for improved prevention education for those with limited formal education. Unemployment and self-employment were associated with increased prevalence, highlighting the impact of poverty and limited access to HIV prevention services. Enhancing formal employment opportunities may aid in HIV prevention and management. In conclusion, this study highlights the significant impact of socioeconomic and demographic factors, along with social dynamics, on HIV prevalence in East Hararge, Ethiopia. Targeted interventions addressing education, employment, and housing, as well as combating poverty and gender-based violence, are crucial in curbing HIV spread and improving overall well-being in the region.

Keywords: HIV prevalence; Socioeconomic factors; Demographic characteristics; Ethiopia; Social dynamics

1.0 INTRODUCTION

HIV/AIDS continues to be a global health challenge, with Sub-Saharan Africa being the most heavily affected region. In Ethiopia, HIV prevalence remains a significant public health concern, and understanding the socioeconomic and demographic factors associated with HIV prevalence is crucial for effective prevention and control strategies. East Hararge, a region in Ethiopia, has been experiencing a high burden of HIV infection. This paper aims to explore the socioeconomic and demographic factors that contribute to HIV prevalence in East Hararge, Ethiopia.

Several studies have investigated the determinants of HIV prevalence in Ethiopia, highlighting the importance of socioeconomic and demographic factors. For instance, a study by Mebratu et al. (2022) found that lower education levels, low household income, and unemployment were associated with higher HIV prevalence among adults in urban Ethiopia. Similarly, a study conducted by Belachew and colleagues (2022) identified younger age, lower educational attainment, and poverty as significant factors influencing HIV prevalence among women in Ethiopia.

While existing research provides valuable insights into the factors associated with HIV prevalence in Ethiopia, there is a paucity of studies specifically focusing on East Hararge. The region's unique socioeconomic and demographic characteristics, along with its high HIV burden, necessitate a comprehensive examination of the factors contributing to the spread of HIV in this specific context.

Understanding the socioeconomic and demographic factors associated with HIV prevalence in East Hararge is crucial for targeted interventions and resource allocation. By identifying the key determinants, policymakers and public health authorities can develop tailored strategies to address the specific challenges faced by the region. Moreover, such insights can contribute to the broader understanding of HIV transmission dynamics in Ethiopia and inform the development of evidence-based interventions nationwide.

Therefore, this study aims to fill the existing research gap by investigating the socioeconomic and demographic factors associated with HIV prevalence in East Hararge, Ethiopia. The findings of this research will provide valuable knowledge for the design and implementation of effective prevention and control programs, ultimately contributing to the reduction of HIV transmission rates in the region.

2.0 METHODOLOGY

2.1 Study Area and Period

The Hiwot Fana Specialized University Hospital hosted the study. Ethiopia's East Hararge was home to the hospital. The hospital's primary area of expertise was general medicine. The hospital's advantage was that it had been a teaching hospital until 2011, when it changed to becoming a regional hospital serving the eastern section of the nation. Additionally, it provided specializations that small clinics could not offer health care services to those residing in and around the village of Baite, where there was considerable unemployment (between 75 and 80 percent), and many of the underprivileged depended on farming as a source of income. The study was carried out from September to December 2022.

2.2 Study design, Target population, Sample Size calculation and Inclusion and exclusion criteria

The source population consisted of medical files of HIV-positive children who enrolled for antiretroviral therapy (ART) at the Hiwot Fana Specialized University Hospital. The research population included the medical records of HIV-infected children and adolescents who had received ART for a minimum of six months at the aforementioned study site.

To determine the sample size, the single population proportion formula [(Z/2)2p(1-p)]/d2 was utilized. Assumptions included a 95% confidence interval (CI), a marginal error (d) of 5%, Z/2 value of 1.96, and an estimated proportion (p) of 50%. The necessary total sample size was determined using the correction formula (Nf = n/(1 + n/N)).

Patients meeting the inclusion criteria and having complete charts at the time of data collection were included through simple random sampling. All medical records of HIV-positive children and adolescents who had received ART at the Hiwot Fana Specialized University Hospital for at least six months were considered. However, individuals lacking complete information on hemoglobin (Hgb), CD4 count, WHO clinical stage, ART adherence, type of regimen, weight, height, or age were excluded from the study.

2.3 Data Collection Method and Quality Control

Structured questionnaires were used to collect data, which were adapted from the 2014 National Guidelines for Comprehensive HIV Prevention, Care, and Treatment published by the Ethiopian Federal Ministry of Health. The questionnaires were modified based on the children and adolescents' ART monitoring record book. The collected information included socio-demographic status, Hgb value, weight, and height, which were extracted from the patients' medical records.

To ensure the validity of the questionnaire, a pre-test was conducted on 5% of respondents who were not participants in the actual study. The questionnaire underwent suitable design modifications based on the pre-test results. Additionally, training was provided to the data collectors before commencing the actual data collection process. The questionnaire was carefully examined and verified for accuracy and relevance.

During the data collection phase, the main investigator oversaw the procedure and provided guidance to the data collectors each morning. Advisors played a crucial role in ensuring the overall work procedure was of high quality and approved the methodology employed in the study.

2.4 Data analysis

The collected data underwent a process of data cleaning, ensuring accuracy and completeness. Subsequently, the data was entered into Epi-info version 3.5.3 software. From there, it was transferred to statistical analysis software, specifically the Statistical Package for Social Science (IBM Corporation, Armonk, NY, USA) version 20.

Descriptive statistics were utilized to summarize and describe the characteristics of the research participants. Tables were created to present the descriptive statistics, providing a clear overview of the study population. These tables included relevant information such as demographic variables, HIV-related parameters, and other variables of interest. Descriptive statistics helped provide a comprehensive understanding of the participants' characteristics and facilitated meaningful interpretation of the data.

The study was conducted after obtaining approval of the protocol by the Ethical Review Committee. Additionally, a permission letter was sought from the chief clinical director of the Hiwot Fana Specialized University Hospital. To ensure confidentiality, the information obtained from the participants was coded.

As this was a retrospective study using medical records, a consent waiver to participate in the study was obtained from the ethical review board. This waiver was granted due to the nature of the study design, which involved the analysis of existing medical data without directly interacting with the participants. The use of coded data and the consent waiver helped protect the privacy and confidentiality of the participants' information throughout the study.

3.0 RESULTS

3.1 Age of participants

The study surveyed a total of 331 people living with HIV at Hiwot Fana Specialized University Hospital in East Hararge Ethiopia. The respondents were categorized by age, with the majority falling within the 19-49 years age group (63.75%). This was followed by the 12-19 years age group (20.85%). The remaining respondents were categorized as >50 years (10.88%), 5-12 years (3.63%), and 0-5 years (0.91%). These results indicate that the majority of the respondents were adults, with relatively few children under the age of 12 (Figure 1). Out of these respondents, majority (57.1%) were males and the remaining 42.9% females.

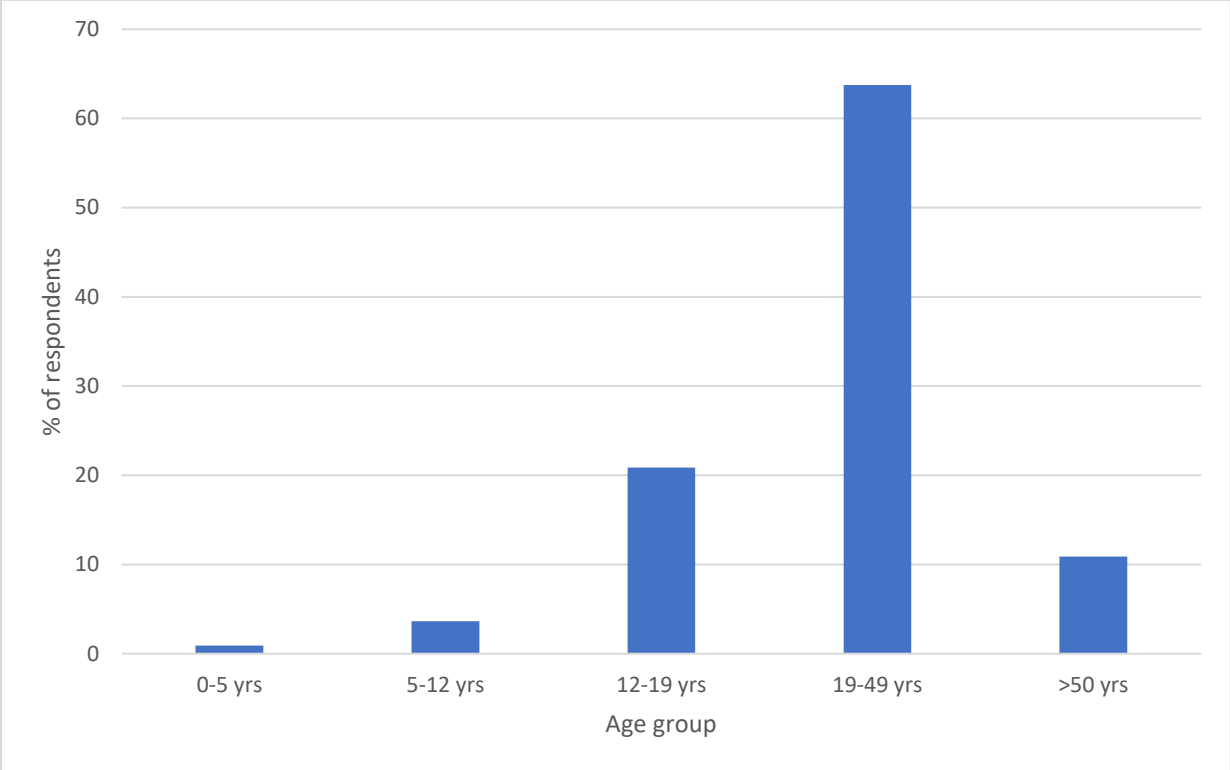

Figure 1: Age distribution of respondents in the current study.

3.2 Weight of participants

The weight of the respondents was also analyzed and categorized into five groups. The majority of the respondents fell into the 31-49 kg weight group, representing 64.35% of the total respondents. The next most common weight group was >50 kg, which represented 24.17% of the respondents. The remaining respondents were distributed across the 21-30 kg weight group (8.46%), 11-20 kg weight group (2.42%), and

<10 kg weight group (0.60%). These results indicate that most of the respondents had a weight within the normal range for their age and height, with only a small proportion being underweight or overweight (Figure 2).

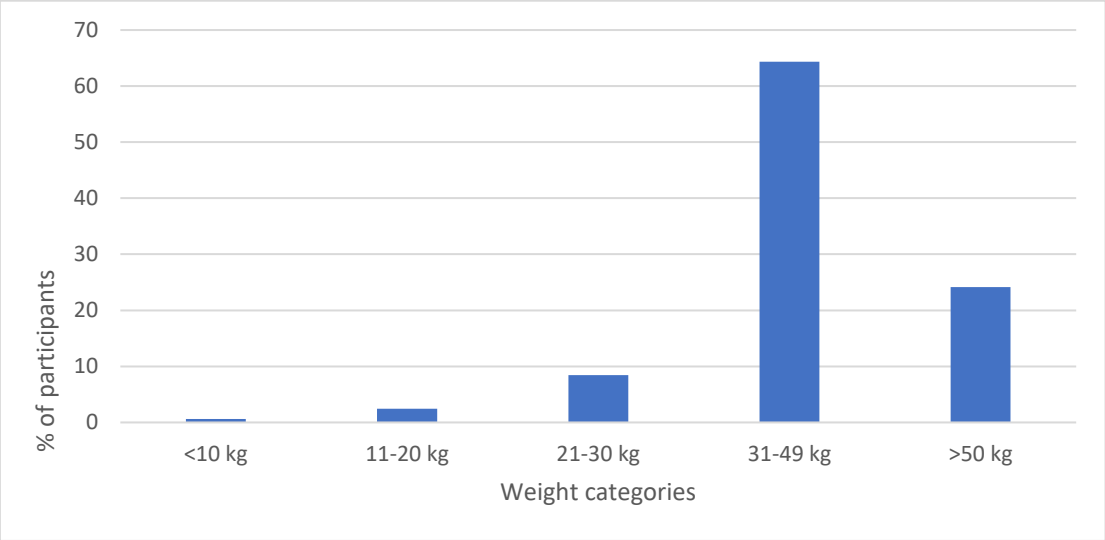

Figure 2: Body weight of study participants

3.3 Marital status of participants

The marital status of the respondents was analyzed and categorized into five groups. The married group had the highest percentage of respondents, with 33.84% of the total. The next most common group was the divorced group, which represented 33.23% of the respondents. The never married group represented 25.68% of the respondents, while the separated and widowed groups represented 4.23% and 3.02% of the respondents, respectively. These results indicate that a significant proportion of the respondents were either currently married or divorced, with a smaller proportion being never married, separated, or widowed.

3.4 Educational background of study participants

The educational level of the respondents was analyzed and the secondary education group had the highest percentage of respondents, with 41.99% of the total. The next most common group was the no education group, which represented 30.82% of the respondents. The primary education group represented 17.52% of the respondents, while the tertiary education group represented 9.67% of the respondents. These results indicate that a significant proportion of the respondents had completed secondary education, with a smaller

proportion having completed primary or tertiary education, and a substantial proportion having received no formal education.

3.5 Employment status of participants

The unemployed respondents group had the highest percentage of respondents, with 60.12% of the total. The next most common group was the self-employed group, which represented 36.56% of the respondents. The employed group represented only 2.42% of the respondents, while the retired group represented the smallest proportion of respondents, with only 0.91% of the total. These results indicate that the majority of the respondents were either unemployed or self-employed, with only a small proportion currently employed in paid work.

3.6 Religion of study participants

The religion of the respondents was analyzed and categorized into four groups. The Orthodox group had the highest percentage of respondents, with 49.70% of the total. The next most common group was the Muslim group, which represented 32.12% of the respondents. The Protestant group represented 13.64% of the respondents, while the Catholic group represented the smallest proportion of respondents, with only 4.55% of the total. These results indicate that the majority of the respondents were either Orthodox or Muslim, with a smaller proportion following Protestant or Catholic denominations (Figure 3). It must also be noted that Out of the total 331 respondents, 101 (30.5%) reported substance abuse, while the majority (69.5%) did not report substance abuse. These results indicate that a significant proportion of the respondents had a history of substance abuse, while the majority did not.

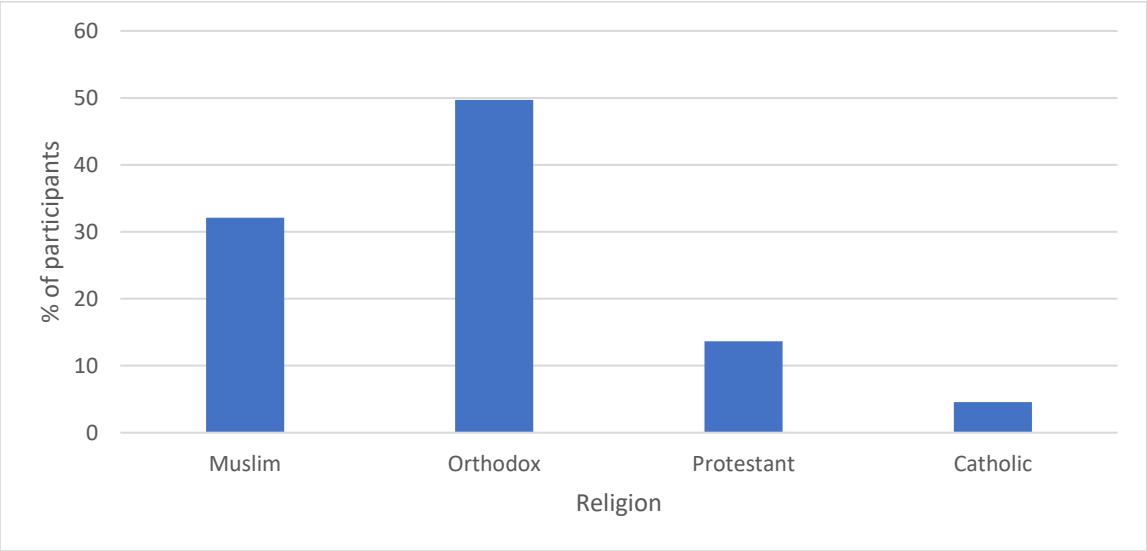

Figure 3: Religious status of participants

3.7 Determination of income levels of participants

The income level of the patients was analyzed and categorized into four groups. The <1000 birr group had the highest percentage of respondents, with 75.53% of the total. The next most common group was the 1000-5000 birr group, which represented 20.85% of the respondents. The 5000-10,000 birr group represented 3.32% of the respondents, while the >10,000 birr group represented the smallest proportion of respondents, with only 0.30% of the total. These results indicate that the majority of the respondents had a monthly income of less than 1000 birr, with only a small proportion having a higher monthly income (Figure 4). Out of the total 331 respondents, 276 (83.38%) lived in urban areas, while 55 (16.62%) lived in rural areas (Figure 4). These results indicate that the majority of the patients lived in urban areas, while a small proportion lived in rural areas.

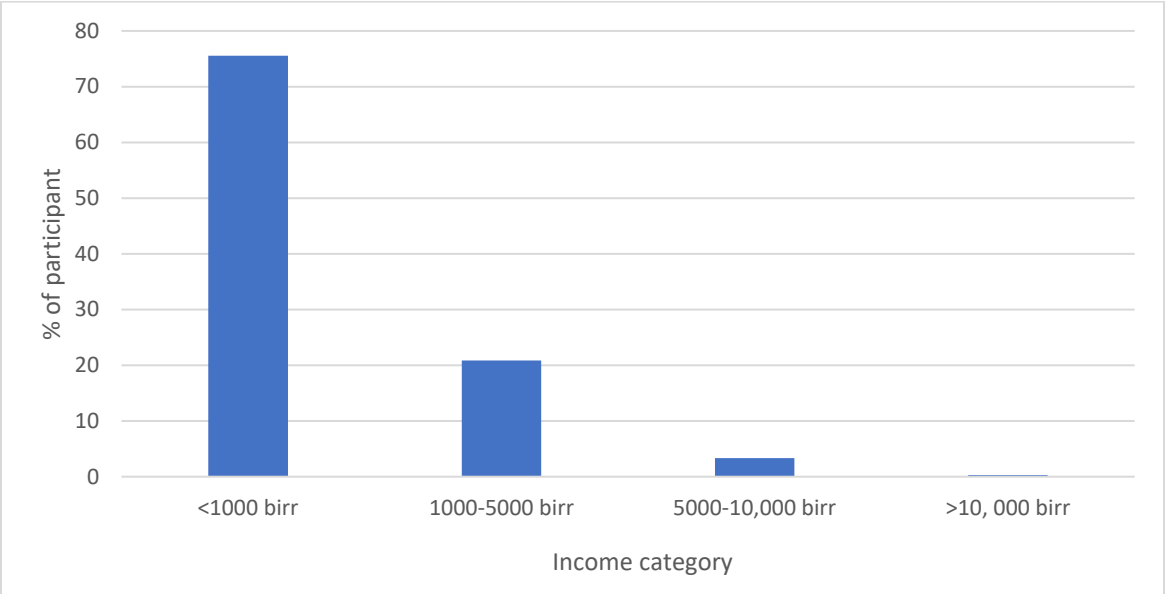

Figure 4: Income levels of study participants

3.8 Distance from the home of patients to the health facility

The 0-3 km group had the highest percentage of respondents, with 42.3% of the total. The next most common distance group was 3-5 km, which represented 32.3% of the respondents. The 5-10 km group represented 18.1% of the respondents, while the >10 km group represented the smallest proportion of respondents, with only 7.3% of the total. These results indicate that the majority of the respondents lived within a distance of 0-5 km from the health facility, while a smaller proportion lived further away.

3.9 Living arrangements of participants

The own house group had the highest percentage of respondents, with 66.16% of the total. The next most common group was with family, which represented 22.96% of the respondents. The rented group represented 10.27% of the respondents, while the with relatives group represented the smallest proportion of respondents, with only 0.60% of the total. These results indicate that the majority of the respondents lived in their own houses, while a smaller proportion either rented their homes or lived with family members or relatives.

3.10 Support system

The patients were asked if they have any person who can support them, and the responses show that 84.59% of the patients reported that they have many people who can support them, while 11.78% reported having only one person to support them. Additionally, 3.63% of the patients reported that they do not have anyone to support them

(Figure 5). The majority of the patients (60.7%) have told at least one family member about their HIV diagnosis, while 24.2% have told several family members. Only a small percentage of patients (less than 1%) have told their father, brother, or son about their diagnosis. A few patients (0.6%) have told a couple of friends about their diagnosis, while 5.1% have not told any friends. Additionally, 3.9% of patients have only disclosed their diagnosis to healthcare workers, and 0.6% have not told anyone in their family about their HIV status (Figure 5). Figure 8 reasons why patients chose not to disclose their HIV diagnosis to anyone. The majority (85.5%) reported fear of stigma and discrimination as the reason for not sharing their status, while 6.3% considered it a private matter, 2.4% did not want people to feel sorry for them, and 5.4% gave other reasons.

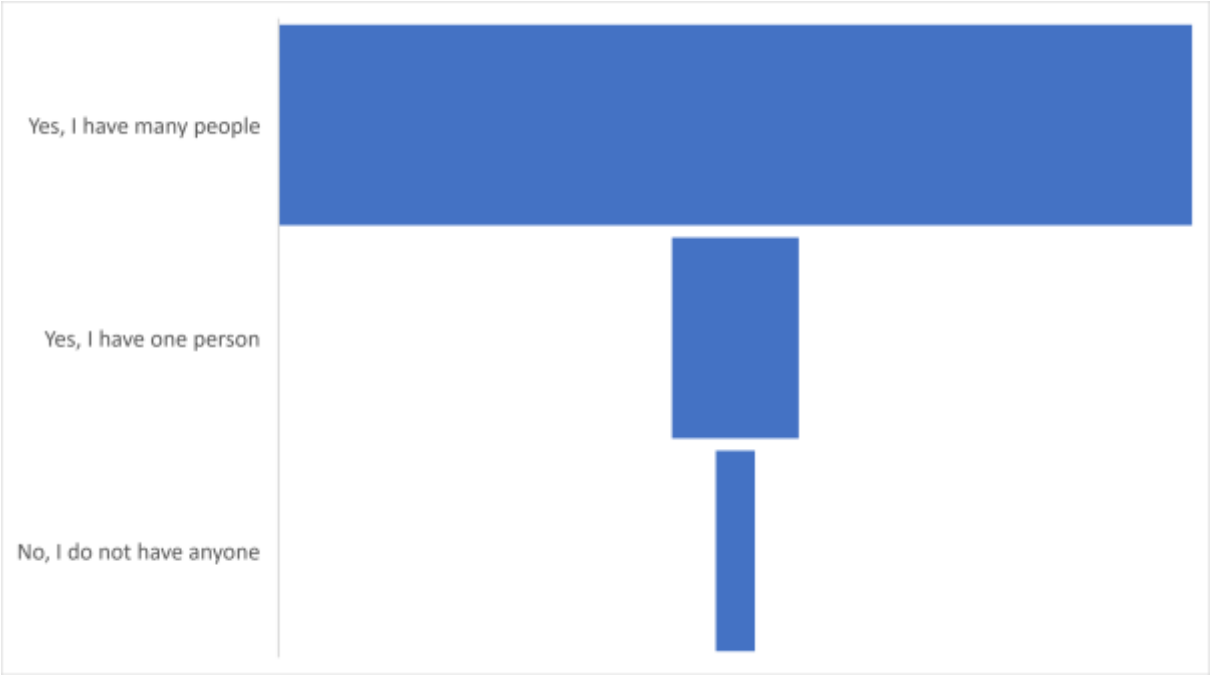

Figure 5: Number of people providing support to patients

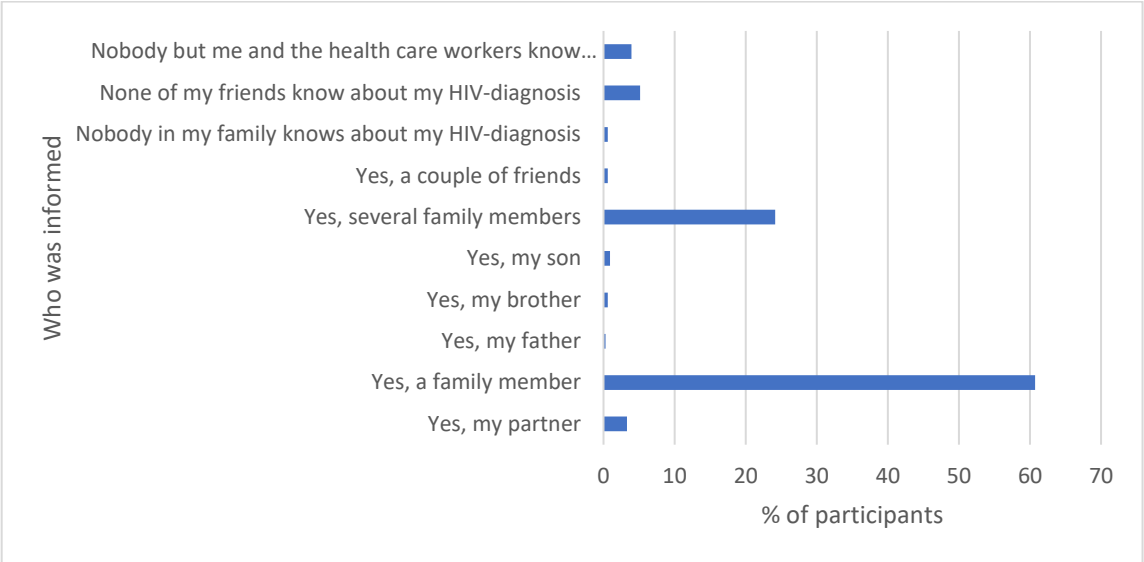

Figure 6: Informing family about HIV-status

3.11 Contact with sexual partners

When asked about their sexual partners, the majority of the respondents (56.5%) reported having one sexual partner, while 42.9% reported having no sexual partner. Only 0.6% of the respondents reported having two sexual partners. Additionally, majority of the participants, 208 (62.8%), reported that they currently did not have a partner. Among the remaining participants who reported having a partner, only 96 (29.0%) reported that their partner was HIV positive, while only 2 (0.6%) reported that their partner was HIV negative. Furthermore, 25 (7.6%) participants reported that they did not know their partner's HIV status (Figure 7).

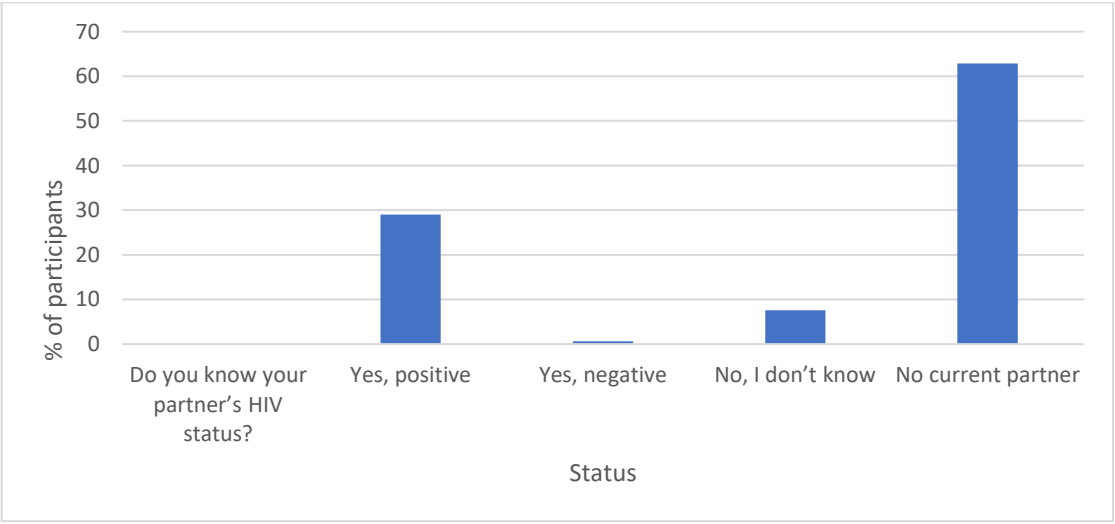

Figure 7: Knowledge of HIV status of sexual partners

4.0 DISCUSSION

4.1 Demographics of study participants

The study conducted at Hiwot Fana Specialized University Hospital in East Hararge, Ethiopia found that the majority of the respondents living with HIV fell within the 19-49 years age group, with the highest percentage being males. This is consistent with other studies conducted in Ethiopia, which have also reported a higher prevalence of HIV among adults aged 15-49 years compared to other age groups (Berhe et al., 2022; Ikoona et al., 2022). The high prevalence of HIV among adults in this age group could be attributed to various factors such as unprotected sexual intercourse, drug abuse, and lack of access to HIV prevention education and services. However, the relatively low proportion of children under the age of 12 living with HIV in this study suggests that there may be some progress in preventing mother-to-child transmission of HIV in the region. Furthermore, the gender disparity observed in this study is consistent with other studies conducted in Ethiopia, which have reported a higher prevalence of HIV among males compared to females (Woldeyes et al., 2022; Assefa et al., 2022). This could be attributed to factors such as gender-based violence, lack of access to healthcare services, and social stigma towards men accessing healthcare services.

The analysis of weight categories among the participants found that the majority of the respondents fell within the 31-49 kg weight group, which represents a healthy weight range for adults. This finding is consistent with the World Health Organization's definition of a healthy weight range for adults, which is a body mass index (BMI) between 18.5 and 24.9 kg/m2 (WHO, 2021). Additionally, the relatively low proportion of underweight and overweight respondents suggests that efforts to improve nutrition and food security in the region may be having a positive impact on the health and well-being of people living with HIV. However, it is important to note that the BMI measurement used in this study may not be a perfect indicator of body fat or overall health, as it does not take into account factors such as muscle mass and body composition (WHO, 2021). Overall, the findings suggest that most of the respondents in this study were within a healthy weight range for their age and height, which is a positive indication of the overall health and well-being of people living with HIV in the region.

A significant proportion of the respondents were either currently married or divorced, with a smaller proportion being never married, separated, or widowed. These findings are consistent with other studies conducted in Ethiopia, which have also reported a higher

prevalence of HIV among married and divorced individuals compared to never married, separated, or widowed individuals (Diress et al., 2022; Gelibo et al., 2022). The higher prevalence of HIV among married and divorced individuals could be attributed to various factors such as infidelity, gender-based violence, and lack of access to HIV prevention education and services. Furthermore, the relatively low number of never married individuals living with HIV in this study suggests that efforts to prevent HIV transmission among young people, particularly those who are not yet sexually active, may be having a positive impact in the region.

The analysis of educational level found that a significant proportion of the respondents had completed secondary education, with a smaller proportion having completed primary or tertiary education, and a substantial proportion having received no formal education. These findings are consistent with other studies conducted in Ethiopia, which have also reported a higher prevalence of HIV among individuals with lower levels of education (Berhe et al., 2022; Worku et al., 2022). The higher prevalence of HIV among individuals with lower levels of education could be attributed to various factors such as lack of access to HIV prevention education and services, poverty, and gender-based violence. Furthermore, the relatively low proportion of respondents with tertiary education in this study suggests that efforts to improve access to higher education in the region may have a positive impact on the prevention and management of HIV.

Majority of the respondents were either unemployed or self-employed, with only a small proportion currently employed in paid work. The higher prevalence of HIV among individuals who are unemployed or engaged in informal employment could be attributed to various factors such as poverty, lack of access to HIV prevention education and services, and gender-based violence. Furthermore, the relatively low proportion of respondents currently employed in paid work in this study suggests that efforts to improve access to formal employment in the region may have a positive impact on the prevention and management of HIV. The analysis of religion among the respondents found that the majority of the respondents were either Orthodox or Muslim, with a smaller proportion following Protestant or Catholic denominations. These findings reflect the religious composition of the region, where the Ethiopian Orthodox Church and Islam are the predominant religions (Central Statistical Agency [CSA], 2013).

A majority of the respondents had a monthly income of less than 1000 birr, with only a small proportion having a higher monthly income. This

is not surprising, given that poverty is a known risk factor for HIV transmission and poor health outcomes among people living with HIV (UNAIDS, 2021). Furthermore, the study found that the majority of the patients lived in urban areas, while a small proportion lived in rural areas. This is consistent with the population distribution in Ethiopia, where the majority of the population lives in urban areas (World Bank, 2021). However, it is important to note that people living with HIV in rural areas may face additional challenges in accessing HIV prevention and management services, due to limited health infrastructure and resources. Similar findings have been reported in other studies conducted in Ethiopia, which have also highlighted the impact of poverty and geographic location on HIV transmission and health outcomes (Amhare et al., 2022). These findings highlight the need for targeted interventions to address poverty and improve access to HIV prevention and management services, particularly in rural areas.

The majority of the respondents lived in their own houses, while a smaller proportion either rented their homes or lived with family members or relatives. This is a positive finding, as stable housing is known to be an important factor in improving health outcomes for people living with HIV (Aidala et al., 2016). However, it is important to note that housing insecurity is a common issue among people living with HIV, particularly in low- and middle-income countries (Kalichman et al., 2018). Inadequate housing conditions, such as overcrowding and poor sanitation, can also contribute to poor health outcomes and increased risk of HIV transmission (UNAIDS, 2021). The findings of this study suggest that efforts to improve housing conditions and address housing insecurity among people living with HIV should focus on expanding access to affordable housing options and addressing the underlying social and economic determinants of housing insecurity.

5.0 CONCLUSION

In conclusion, the study conducted at Hiwot Fana Specialized University Hospital in East Hararge, Ethiopia provides valuable insights into the demographics and socio-economic characteristics of people living with HIV in the region. The study found that the majority of the respondents were within the 19-49 years age group and the highest percentage were males. The gender disparity observed in this study is consistent with other studies conducted in Ethiopia, which have reported a higher prevalence of HIV among males compared to females. The study also found that most of the respondents were within a healthy weight range, and efforts to improve nutrition and food security in the region may be having a positive impact on the health and well-being of people living with HIV. However, the higher

prevalence of HIV among individuals with lower levels of education, those who are unemployed or engaged in informal employment, and those living in poverty highlights the need for targeted interventions to improve access to HIV prevention and management services. Additionally, efforts to prevent mother-to-child transmission of HIV and prevent HIV transmission among young people should be continued. The findings of this study underscore the importance of addressing the underlying social and economic determinants of HIV transmission and poor health outcomes among people living with HIV.

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