

*Full Length Research Paper*

# Socio-demographic profiles and prevalence of human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) among voluntary counseling and testing (VCT) clients in Finote Selam, Northwest Ethiopia

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Voluntary counseling and testing (VCT) is an important component of the human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) prevention and control interventions. The services in Ethiopia are available in government and non-government health facilities. However, very little is known about the profile and HIV prevalence among VCT clients. In fact, any attempt to analyze the epidemiology of HIV in Ethiopia is limited by the lack of sufficient longitudinal, cross-sectional and behavioral data. A retrospective cross-sectional study was employed to determine the socio-demographic profiles and prevalence of HIV among VCT clients. Data were taken from VCT clients' records in Finote Selam Hospital. The quantitative data were entered using Microsoft excel and analyzed with SPSS 15.0 windows evaluation version. The International Training and Education Center for Health (I-TECH) and the woreda HIV/AIDS prevention and control offices are the only interventions. The prevalence of HIV among VCT clients decreased gradually from 6.5% in 2008 to 5.7% in 2009 and 4.3% in 2010. A little over half (55.6%) of HIV positive clients were females. The overwhelming majority of clients screened for HIV were males. Prevalence of HIV infection among VCT clients was estimated to 5.4% and varied by socio-demographic characteristics of the clients. Six in ten of the HIV positive clients were never married and nearly three-fourth of HIV positive clients (73.6%) were urban residents. Farmers and domestic workers accounted for more than half (52.5%) of the total HIV positive clients. Higher prevalence rates were observed in the 25 to 34 age groups, the urban residents, never married, farmers and domestic workers. The prevalence of HIV showed a decreasing pattern from 2008 through 2010; but the distribution was shifting from urban to rural areas. Trying to produce single prevalence estimates for the entire country is inadequate for understanding the scale and heterogeneity of the epidemic. HIV/AIDS programs should be more focused geographically and directed to the regions, districts and communities that exhibit higher prevalence rates and at higher risk and more intensive AIDS control efforts are needed.

**Key words:** Human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS), voluntary counseling and testing (VCT), Finote Selam, prevalence.

## INTRODUCTION

The emergence of the human immunodeficiency virus (HIV) epidemic is one of the biggest public health

challenges the world has ever seen in recent history. In the last three decades, HIV has spread rapidly and affected all sectors of society, young people and adults, men and women, and the rich and the poor. Sub-Saharan Africa is at the epicenter of the epidemic and continues to carry the full brunt of its health and socioeconomic impact. Ethiopia is among the countries most affected by the HIV epidemic (World Health Organization (WHO) and UNAIDS: Acquired Immune Deficiency Syndrome (AIDS) epidemic update, 2006).

HIV infections were first found in Ethiopia one to two years later than in most other sub-Saharan countries, but the main features of the virus resemble those elsewhere in Eastern Africa; the relatively virulent HIV-1 is the major strain in Ethiopia, with transmission largely through heterosexual contact and to a lesser extent through mother-to-child transmission, traditional surgical practices, and probably blood. HIV probably began to spread in Ethiopia in the early 1980s, the first evidence of HIV infection was found from stored serum drawn in 1984. The first two AIDS cases were reported in 1986 from Addis Ababa Hospitals. Since then the virus has continued to spread at a rapid pace (Kloos and Hailemariam, 2000).

The epidemic in Ethiopia is generally considered to be high, with increasing levels of seasonal migration of workers, multipartner sexual contacts, dislocation due to the civil war, high rates of sexually transmitted diseases, increasing sexual activity among youth and high unemployment rates including the demobilized soldiers. However, the size and distribution of high risk groups, sexual networks and bridging groups remain largely unknown, making determinations of epidemic potential largely speculative. In fact, any attempt to analyze the epidemiology of HIV in Ethiopia is limited by the lack of sufficient longitudinal, cross-sectional and behavioral data (Garbus, 2003; Berhane et al., 2008).

In response to the epidemic, the Government of Ethiopia launched the antiretroviral treatment program started with fee based in 2003 and then decentralized and free antiretroviral therapy (ART) program was launched since 2005. The country has scaled up its ART program and is planning to decentralize the service further to existing health facilities (Ministry of Health, Ethiopia, 2007).

Voluntary counseling and testing (VCT) is an important component of the HIV/AIDS prevention and control interventions. It helps people to learn about how HIV is transmitted, practice safer sex, get HIV test, and depending on the result, take steps to avoid becoming infected or infecting others. It should be emphasized that investing in VCT is more cost-effective and its uptake should be taken as critical entry point to Prevention of Mother to Child Transmission (PMTCT) programs (Korra et al., 2005). In the absence of VCT services, most women in Africa have no definitive way of knowing their HIV status until they themselves fall ill with identifiable symptoms of AIDS, or until they give birth to a baby who is diagnosed

with the virus, and eventually dies from AIDS (Sahilu, 1999, 2001; Centers for Disease Control (CDC), 2003; Garbus, 2003).

A recent literature review study and data research in Ethiopia about where HIV/AIDS is leading revealed that Ethiopia is facing an expanded HIV/AIDS epidemic with a rising prevalence and stable incidence. The estimated number of people living with HIV/AIDS rises rapidly in both urban and rural Ethiopia for every projected year between 1983 and 2008, driven by the increasing severity of the epidemic and/or population growth with a tendency of intensifying epidemic in rural areas (Hladik et al., 2006). However, very little is known about the profile and HIV prevalence among VCT clients. Selected characteristics of VCT clients and their serostatus were recorded at the hospital. An analysis of such health facility data (secondary data) particularly on VCT is limited. This study was, therefore, aiming at filling this gap and describing the socio-demographic profile of VCT clients as well as estimating the prevalence of HIV infection of these clients. So this study was assumed to have significance to program planners and implementers on HIV/AIDS in the town and its surrounding areas.

## METHODOLOGY

A retrospective cross-sectional study was employed to determine the socio-demographic profiles and prevalence of HIV among VCT clients. The study was conducted in Finote Selam Hospital in Finote Selam town in West Gojjam zone of Amhara National Regional State. The town is located along the Addis Ababa-to-Metema route and 374 km away from the capital city, Addis Ababa (Figure 1). Recently, the town also became the zonal town, shifted from Bahir Dar since 2010. The study town is home to large numbers of government employees, day laborers, FSWs, and secondary and college students as well as transient populations that temporarily reside in the town (truckers and their assistants, migrant workers and businessmen). It is a marketplace for the surrounding rural communities. The rural men and women frequently visit the town to sell their agricultural products and buy commodities for their household's consumption. The study town has several hotels, bars, and local brew-selling houses (areki and tella bets) where Female Sex Workers (FSWs) operate. Army forces based in Birshaleko/Tatek Military camp also frequently visited the town. Policy makers and program managers need accurate estimates of the size and scope of a country's HIV epidemic and the distribution of HIV infection within a population in order to identify areas with elevated HIV infection rates and higher-risk populations. Moreover, understanding HIV infection offers insight into appropriate interventions for prevention, care and support, and treatment programs.

The data used in these analyses came from special records kept at Finote Selam Hospital HIV counseling and testing center. The recording formats were prepared and filled by the VCT center counselors at the time of pre and post-test counseling. The quantitative data were entered using Microsoft excel and analyzed with SPSS 15.0 windows evaluation version. The study subjects were children (came with their parents or guardians), male and female clients who have visited the center for VCT services between January 2008 and December 2010. VCT service was given for outpatients and inpatients but Inpatient records were incomplete and service was started recently and excluded from the study and hence only outpatient and outreach records (campaign results) were evaluated. A total of 24,661 people have received the



Figure 1. Map of Finote Selam.

services during the specified period and records of these clients were used for analysis.

Ethical Review Committee of Addis Ababa University, Faculty of Medicine, Department of Microbiology, Immunology and Parasitology (DREC) have approved the study for its ethical and scientific merit. Formal letter of cooperation was written from Addis Ababa University, School of Medicine to Finote Selam Hospital. The selected health institution was communicated and has supported the undertaking of this study and all the necessary precautions were taken to make the records confidential. The client's name was not recorded on any of the formats used at the center.

For uniformity of understanding, the approach of key words is given as follows: areki, strong alcoholic beverage (about 75%) made by a local distillation system; cross-generational sex, when a woman age 15 to 24 has non-marital intercourse with a man who is 10 or greater years older than her; generalized epidemic, presence of more than 1% of infection in the population and 5% among high-risk population; kimit, woman who serves as a sexual partner for a man who usually has a legal wife; tella, locally brewed beer with an alcohol content of 5 to 10%; transactional sex, exchange of sex for money or goods; voluntary counseling and testing, the process by which an individual undergoes confidential counseling to enable the individual to make an informed choice about learning his or her HIV status and to take appropriate action [Parents/Guardians were counseled for the < 15 age years old]; woreda, an administrative unit (equivalent to a district); zone, an administrative level consisting of a number of weredas.

## RESULTS

A total of 24,661 clients were tested for HIV in Finote Selam Hospital VCT center in the years from 2008 to 2010. Of those tested for HIV, 13,621 clients were urban residents and 11,040 were from the rural settings and 1,341 of them were positive for HIV (562 in 2008, 382 in 2009 and 397 in 2010) (Table 1). Of those HIV positives, 987 clients (73.6%) were urban and 354 (26.4%) were

rural residents. The overall prevalence of HIV among VCT clients was 5.4%. The highest prevalence being found in the 25 to 34 age groups and particularly in urban settings, where the prevalence is as high as 7.4%, as opposed to rural settings where prevalence is approximately 3.2%. 55.6% of all people living with HIV were females and 8.5% were children under the age of fifteen (Table 2).

Most infections among VCT clients of Finote Selam Hospital were registered among never married with 332 cases (63.2%) occurring in 2008; 193 cases (36.8 %) in 2009 and 239 cases (60.2%) in 2010. In these three years, unmarried females were more affected than males while more married and widowed males were more affected than females. On the other hand divorced males and females were almost equally affected. Among those that tested HIV positives; 352 (26.3%) were domestic workers, 352 (26.2%) were farmers, 265 (19.8%) were traders, 122 (9.1%) were government employees, 113 (8.4%) were day laborers, 107 (8%) were students and 29 (2.2%) were those who have no jobs (Table 2).

More than half (59%) of the clients screened for HIV were males but higher percentage (55.6%) of HIV positive clients were females. The number of clients screened and tested positive were decreased from 2008 to 2009 and then increased in 2010. The prevalence in each individual years was 6.5% (4.59% in males and 9.9% in females) in the year 2008; 5.7% (4.6% in males and 7.1% in females) in 2009 and 4.3% (3.1% in males and 5.7% in females) in 2010 (Table 1). The trend of prevalence of HIV/AIDS showed a decreasing pattern from 2008 through 2010.

The prevalence of HIV in the adult population (15 to 49 ages) for the three years was 4.7% (5.1% in 2008, 5.26% in 2009 and 4.0% in 2010). Higher (37.7%) HIV infection

**Table 1.** Total number of clients screened and HIV positive population in Finote Selam Hospital in the years 2008 to 2010, February 2011.

Year	Total No. of clients tested		Total No. of HIV positive clients		Prevalence (%)
	M (%)	F (%)	M (%)	F (%)	
2008	5,508 (22)	3,130 (13)	253 (18.9)	309 (23)	6.5
2009	3,971 (16)	2,779 (11)	184 (13.7)	198 (14.8)	5.7
2010	5,082 (21)	4,191 (17)	159 (11.9)	238 (17.7)	4.3
Total	14,561 (59)	10,100 (41)	596 (44.4)	745 (55.6)	5.44

was registered in the 25 to 34 age group, followed by 35 to 49 (28.04%) and 15 to 24 (21.1%). Lower cases of infection occurred in the >49 years age group in 2008 while in the remaining two years, lower infections were observed in the <15 years age groups (Table 2).

Higher infection was registered in farmers and domestic workers. More male farmers, government employees, traders, day laborers and those who have no jobs were more affected than females. On the other hand, more female students and domestic workers than males were infected by the virus (Table 2).

## DISCUSSION

This three year retrospective cross-sectional study of VCT clients gives an insight into socio-demographic profiles and prevalence of HIV in a hospital setting in Ethiopia. The socio-demographic profile of VCT clients at Finote Selam Hospital revealed that a little over half of the clients were never married and more than 73% of the clients were living in the urban area. Farmers and domestic workers together comprised of half of the HIV positive clients. The highest rate of infection was registered among 25 to 34 age groups and 55.6% of infection occurring in females. The overall HIV prevalence was higher among females (7.4%) than males (4.1%). The ratio of HIV positive females and males in our study area was (1.5:1). A similar finding reported in Ethiopia (Korra et al., 2005) confirms that females are bearing a disproportionate burden of the disease and its impact, because of significant gender inequalities resulting in higher stigma, discrimination, poor access to public health services, lower rates of literacy, early marriage, leave school earlier than males, have little opportunity to participate in decision making and low negotiation skill on the use of condom (safe sex) or men's negligence, concurrent sex among better-off married males and economically disadvantaged young females (referred to as *kimit* and *wushima*), low socioeconomic status of females and engagement in high risk sexual behavior (Derbew, 2009).

The overall HIV prevalence of 5.4% among the study subjects is significantly lower than the prevalence in Addis Ababa, 24.5%. Female clients were more likely to be HIV positive than males. It was also observed that

urban females were more affected than urban males while rural males were more affected than rural females. Both males and females living in urban areas were more exposed to HIV/AIDS than those living in rural areas. Likewise, HIV prevalence was higher in urban residents (7.4%) than in rural populations (3.2%). This difference in prevalence in the urban and rural residents is supported by HIV/AIDS in Ethiopia (Kloos and Hailemariam, 2000) that urban residents were more affected than rural residents. The age pattern for HIV prevalence rates among VCT clients at Finote Selam Hospital revealed that the prevalence is higher among adult clients than younger and older ones as opposed to a study conducted in Addis Ababa in which higher prevalence was observed among older ones (Korra et al., 2005).

The rate of HIV infection among rural males was more than one and half times (2.82%) than females (1.7%) while urban females were more than one and half times as likely as urban males to be infected (4.6% versus 2.84%). There were different types of bridging populations and market related risks that link the low prevalence rural areas with the high prevalence urban communities. There are those who link their rural communities with higher-risk urban hinterlands for employment, education or social reasons and those people who are attending administrative matters, such as rural administrators visiting the town for training, workshops, weekly reports; most farmers, migratory laborers and rural commercial farmers often visit local towns for social and business purposes (Berhane et al., 2008; Derbew, 2009).

Activities specifically associated with agricultural marketing potentially contribute to the spread of the disease. Larger weekly markets attract people from further and may result in stays in the town and many drink alcohol. Drinking on market days is a common and long established practice. Both females and males drink *tella* (a beer made from barley) to quench their thirst (farmers noted that it is not easy to get water on market days, because the *tella* producers wish to sell their brews). Females usually returned to home after one or two drinks whereas males may have several drinks of *tella* or *areki* in houses close to the market. This may lead to unprotected sex with young females serving drinks. Increased market orientation and production of a marketable surplus is also likely to result in more frequent

**Table 2.** Number of HIV positive clients in Finote Selam Hospital (2008 to 2010), February 2011.

Variable	Year			Total	Percentages
	2008				
<b>Sex</b>					
Male	253	184	159	596	44.4
Female	309	198	238	745	55.6
<b>Age</b>					
<15	98	11	5	114	8.5
15-24	108	78	87	283	21.1
25-34	168	171	167	506	37.7
35-49	146	106	114	376	28.04
>49	25	16	24	62	4.6
<b>Residence</b>					
Urban	413	278	296	987	73.6
Rural	149	104	101	354	26.4
<b>Marital status</b>					
Never married	339	212	239	790	58.9
Married	157	114	112	383	28.6
Divorced	49	31	34	114	8.5
Widowed	17	25	12	54	4.0
<b>Occupation</b>					
Domestic work	165	71	117	353	26.3
Farmers	147	101	104	352	26.2
Traders	105	86	74	265	19.8
Government employee	47	42	33	122	9.1
Day laborer	45	36	32	113	8.4
Students	44	32	31	107	8
No jobs	9	14	6	29	2.2

visits to markets or urban centers where FSW and other Most At Risk Populations (MARPs) are operating (Habte, 2008; Deribew, 2009).

Finote Selam is a marketplace and frequently visited by local businessmen and farmers from the neighboring *woredas*, including Quarit, Sekela, Dembecha, Dangila, Burie and Shindi from where many VCT clients tested for HIV were positive. In addition, truckers and their assistants enter and leave the town every day. The town also hosts large numbers of FSWs operating in hotels, bars, and local brew-selling houses. Army forces based in Birsheleko/Tatek Military camp, have also frequently visited the town which are frequently described as MARPs and with higher HIV prevalence than civilian populations (Whiteside et al., 2006), could contribute for increased prevalence of the disease in the study area by transmitting it to the general population. Cross-generational and transactional sex is common, especially among secondary and college students with uniformed

men, local businessmen and government employees. Alcohol and khat use and inconsistent condom use are among frequently cited reasons for the town's unchecked HIV transmission (Deribew, 2009).

## CONCLUSIONS AND RECOMMENDATIONS

In rural areas, conditions are conducive for further spread of the virus unless risky behaviors are reversed and poverty reduction programs bring about the changes required for an effective response to the epidemic. Strong and sustained support by the regional government as well as collaboration with local communities, private and civil organizations is essential.

Because of the heterogeneity of the epidemic, HIV/AIDS programs should not be based on national-level statistics, but need to be more focused geographically, and directed to regions, districts or communities

exhibiting higher prevalence rates.

Without continued focus on prevention, there would still be a huge potential that the epidemic may continue to be a threat to public health of the town. Prevention and treatment programs in the town and its surrounding areas should be upgraded and scaled up.

Surveillance in rural areas needs to be increased, not only to monitor the spread of the epidemic, but also to continue providing better estimates of the true prevalence of the epidemic in the region whose population remains overwhelmingly rural.

### LIMITATIONS OF THE STUDY

Since the study covered the three years data, clients tested more than once in the three years were not discriminated, especially if they were HIV positives, increasing the prevalence without new infection. Many clients also came from neighboring woredas for screening purposes and if unfortunately tested HIV positive, they may not returned to their home place where they came from, becoming source of infection in the town and hence increasing the prevalence.

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