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COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCES

DEPARTEMENT OF ZOOLOGICAL SCIENCES

PREVALENCE OF HIV AND LEVEL OF AWARENESS IN FOUR DIFFERENT DISTRICTS OF DEMBECHA WOREDA, WEST GOJJAM ZONE, AMHARA REGION, ETHIOPIA

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List of Acronyms

AIDS: Acquired Immune Deficiency Syndrome

ART: Antiretroviral Treatment

CDC: Center for Disease Control and Prevention

DWHO: Dembecha Woreda Health Office

EDHS: Ethiopian Demographic and Health Survey

FHAPCO: Federal HIV/AIDS Prevention and Control Office

FMOH: Federal Ministry of Health

HIV: Human Immuno Deficiency virus

HTC: HIV Testing and Counseling

MCH: Maternal and Child Health

NACS: National HIV/AIDS Council Secretariat

PLHV: People Living with HIV

PMTCT: Prevention of Mother to Child Transmission, Control and Treatment

PIHCT: Provide Initiating HIV Counseling and Testing

SIV: Simian Immuno Deficiency Virus

SSA: Sub Saharan Africa

SPSS: Statistical Packaging for Social Science

STIS: Sexually Transmitted Infections

UNAIDS: United Nations Program on HIV/AIDS

VCTS: Voluntary Counseling and Testing Service

WHO: World Health Organization

Abstract

Acquired immune deficiency syndrome (AIDS) is a global epidemic which is caused by the virus called human immunodeficiency virus (HIV). It affects the immune system of the body of human beings and destroying the lives and livelihood of many people around the world. The main objective of the study was to determine the prevalence of HIV and level of awareness in four different districts of Dembecha Woreda, West Gojjam Zone, Amhara Region, Ethiopia. A retrospective study design was conducted from September to June, 2017. Purposive sampling technique was used to collect data from four health centers and simple random technique from informants of the people in these districts. Primary data were collected by using structured questionnaire and secondary data were collected by review of records at health centers. Data obtained were analyzed by using statistical packaging for social science (SPSS) version 16.0 software.

Results obtained through frequency and percentage described that sex, marital status, age and awareness had significant on prevalence and level of awareness on HIV/AIDS. According to the secondary data obtained from health centers HIV positive females were 59.4% and males were 40.6%. So, females were more vulnerable than males. Majority of (77.5%) that lives with HIV virus were the productive age (15-49age) group in both sexes. The analyzed data indicated that HIV positivity is high among divorced and single individuals.

Majority of the respondents (93.6%) had an idea on HIV/AIDS that it is not curable while (5.4%) had believed that it is a punishment given from supernatural power. A large number of respondents (46.8%) were agreed that a person who has HIV virus in his /her blood should keep secret from others. Three hundred seventy eight (93.6%) of the respondents said that unsafe sexual contact is the main transmission method of HIV virus from infected person to healthy person. So, still there have been misconceptions and lack of knowledge among the community on HIV/AIDS prevention and control mechanisms. Finally it was concluded that sex, age, marital status, and awareness were more important variables for the prevalence and level of awareness on HIV/AIDS.

***Keywords**: HIV/AIDS, Prevalence, Dembecha, Woreda, awareness*

CHAPTER ONE

1. INTRODUCTION

1.1 Background

Acquired immune deficiency syndrome (AIDS) is a global epidemic which is caused by the virus called human immunodeficiency virus (HIV). It affects the immune system of the body of human beings. The epidemic was firstly recognized in the year 1980. Since then about 20 million died and 38 million people are estimated living with HIV in the world. The rate of infection of the epidemic is still increasing in many countries of the world and it is distributed unevenly. It is the major development concern in many countries and is destroying the lives and livelihood of many people around the world (FMOH, 2005).

Since HIV/AIDS was acknowledged as a human being problem, health researchers have been conducting different researches in order to tackle or control the epidemic by developing therapy or vaccine. However, due to the very unique nature of the virus they could not succeed in developing a medicine or vaccine that totally cures or protects from the disease. The antiretroviral medicine which are available currently, at best can diminish the infection rate i.e. they are not able to cure people who are infected by this epidemic (UNAIDS, 2004).

Almost all countries worldwide are affected by the HIV epidemic. No region of the world has been spared. Although the epidemic is global, there is a remarkable regional variation in its distribution. Some regions are highly affected by the epidemic as compared to other regions. Sub Saharan Africa (SSA) is one of the hot spots where HIV/AIDS is widely spread and it is more hard hit by the consequences of epidemic than other parts of the world. It is the region where the highest number of victims of HIV/AIDS is found. Among all the people who are infected by diseases all over the world about 68% (22.2 million) are living in this region (UNAIDS 2010).

According to the United Nation classification of generalized epidemic about 90% of the countries which are located in the SSA are severely affected by the epidemic. This epidemic has remained the major cause of death in this region. Although the region

accounts only for 10% of the world population, it comprises almost 25.8 million of the victims of HIV/AIDS in the world. In 2005 an estimated 3.2 million people in the region became newly infected, while 2.4 million died of AIDS. Among the younger (15-24years) the percentage of HIV infected women and men account for 4.6% and 1.7% respectively. There were 2.7 million new HIV infections in 2010. HIV/AIDS accounts for about approximately 90% of all infections (UNAIDS, 2005).

World Health Organization (2013) reported that almost 70 million people have been infected with HIV and almost 35 million people have died of AIDS since the beginning of the epidemic in the early 1980s. The World Health Organization reported that the number of new HIV infections peaked in the late 1990s at more than 3 million (WHO, 2013).

„"AIDS epidemic update"", which is released by the United Nations and the WHO (2011) stated that an estimated 2.5 million people were newly infected with the disease worldwide. Nearly one in every 20 adults (4.9%) living with HIV, or 69% of the people living with HIV worldwide, were in sub Saharan Africa. More than 34 million people worldwide were living with HIV/AIDS in 2011 and 1.7 million people died of AIDS related illness. Due in large part to antiretroviral therapy and some improvements in access to care, the number of deaths related to HIV/AIDS has declined since 2001 (WHO, 2011).

According to the WHO (2011) report 2.1 million people died of AIDS in 2007, and 3 million in 2001. HIV continues to be a major global public health issue since 2000, 38.1 million people have become infected with HIV and 25.3 million people have died of AIDS related illness. In 2014, an estimated 36.9 million people were living with HIV (including 2.6 children) a global HIV prevalence of 0.8%. The vast majority of this number lives in low and middle income countries. In the same year, 1.2 million people died of AIDS related illness (UNAIDS, 2015).

25.8 million People living with HIV are in sub Saharan Africa accounting for 70% of the global total. Only 54% of all people living with HIV know that they have the virus. In 2014 there were roughly 2 million HIV infections, 220,000 of which were children. Most

of these children live in sub Saharan Africa and were infected via their HIV positive mothers during pregnancy, child birth or breast feeding (UNAIDS 2015).

Despite these challenges, new global efforts have meant that the number of people receiving HIV treatment has increased dramatically in recent years, particularly in resource poor countries. As WHO report, 15 million people living with HIV were receiving antiretroviral treatment (including 823,000 children) representing 41% of those in need and 13.5 million of these people were in low and middle income countries. Significant progress has also been made in the prevention of HIV. In 2014 73% of all pregnant women living with HIV accessed treatment to prevent HIV transmission to their babies (WHO, 2015).

1.2 Basic research questions

This study was aimed to answer the following research questions.

1. How is the current prevalence of HIV/AIDS in four different districts?
2. Which groups of people are at high risk of HIV infection?
3. How is the level of awareness in four different districts on HIV/AIDS?

1.3 Research objectives

1.3.1 General objective

The study was aimed to determine the prevalence of HIV and level of awareness in four different districts of Dembecha Woreda, West Gojjam Zone, Amhara Region, Ethiopia

1.3.2 Specific objectives

- To determine the prevalence of HIV/AIDS in the study areas.
- To identify people with a high risk of HIV infection
- To determine the level of awareness in four different districts.

CHAPTER TWO

2. LITERATURE REVIEW

2.1 Origin and history of HIV/AIDS

Acquired immune Deficiency syndrome (AIDS) is caused by the human immune deficiency virus (HIV), which originated in non- human primates in central and West Africa. While various sub groups of the virus acquired human infectivity at different times, the global pandemic had its origin in the emergence of one specific strain HIV 1 sub group M in Leopoldville in the Belgian Congo (now Kinshasa in the Democratic Republic of Congo) in the 1920s (James Gallagher, 2014).

Two types of HIV exist: HIV 1 and HIV 2. HIV1 is more virulent, easily transmitted and is the cause of the vast majority of HIV infections globally (Reeves and Doms, 2002). The pandemic strain of HIV 1 is closely related to a virus found in Chimpanzee of sub species *Pantroglodytes troglodytes* which live in the forest of central Africa nations of Cameron, Equatorial Guinea, Gabon, Republic of Congo and Central African Republic. HIV 2 is less transmittable and is largely confined to west Africa , along with its closest relatives, a virus of the sooty mangabey (*Cercocebus atys*), and old World monkey inhabiting southern Senegal, Guinea Bissau, Sierra Leone, Liberia and western Ivory coast (Reeves and Dom, 2002).

The pandemic HIV 1 strain and a very rare strain found in a few Cameroonian people (group N) are clearly derived from SIVcpz strains endemic in *Pantroglodytes troglodytes* chimpanzee populations living in Cameron (Peeters and Hahn ,2006). Another very rare HIV1 strain (group) is clearly derived from SIVgor strains of Cameron (Robertson and Simon, 2009).

Finally, the primate ancestor of HIV1 group O, a strain infecting 100,000 people mostly from Cameron but also from neighboring countries has been recently confirmed to be SIVgor. The pandemic HIV1 group M is most closely related to the SIVcpz collected from the south eastern rain forests of Cameron near the Sangha River. Thus this region is presumably where the virus was first transmitted from chimpanzees to humans (Peeters and Hahn, 2006).

However, reviews of the epidemiological evidence of early HIV1 infection in stored blood samples, and old case of AIDS in central Africa have led many scientists to believe that HIV1 group M early human cancer was probably not in Cameron, but rather farther south in the Republic of the Congo, more probably in its capital city, Kinshasa (Hooper Edward, 2000).

Using HIV1 Sequences preserved in human biological samples along with estimates of viral mutation rates, scientists calculate that the jump from chimpanzee to human probably happened during the late 19^{th} or 20^{th} century, a time of rapid urbanization and colonization in equatorial Africa. Exactly when the zoonosis occurred is not known Some molecular dating studies suggest that HIV1groupM had its most recent common ancestor that is started to spread in the human population in the early 20^{th} century probably between 1915 and 1941 AIDS was first recognized as a new disease in the United States center for disease control and prevention (CDC) in 1981 (Peeters and Vandamme., 2000).

The first report in the medical literature that alerted the world to this new immunodeficiency syndrome appeared in June of 1981.The report described five young homosexual men in Los Angeles with Pneumocystis carinii pneumonia (PCP). In 1982 CDC had published a case definition, using a current designation of acquired immunodeficiency syndrome (AIDS) in print, and it was rapidly adapted by researchers. The majority of researchers thought that the likely agent was a sexually transmitted virus that would found in the peripheral blood. HIV was first isolated in France in 1983 by Francoise Barresinoussi in the laboratory of Luc Montaignier as lymphadenopathy associated virus. (Barre-sinoussi, 1983).

HIV/AIDS is a spectrum of conditions caused by infection with the immunodeficiency virus (HIV) (Wilhem Krich, 2008). Following initial infection, a person may not notice any symptom or may experience a brief period of influenza like illness (WHO, 2015). Typically this is followed by a prolonged period with no symptoms. As the infection progresses, it interferes more with the immune system, increasing the risk of common infections like tuberculosis, as well as other opportunistic infections, and tumors that rarely affect people who have working immune systems. These late symptoms of infection are referred to AIDS (CDC, 2015).

HIV is spread primarily by unprotected sex, contaminated blood transfusion, hypodermic needles, and from mother to child during pregnancy, delivery, or breastfeeding. Some bodily fluids such as saliva and tear do not transmit HIV. Methods of prevention includes: safe sex, needle exchange programs, treating those who are infected, and male circumcision. Disease in a body can often be prevented by giving both the mother and child antiretroviral medication (WHO, 2015). There is no cure or vaccine however, antiretroviral treatment can show the course of the disease and may lead to the near normal life expectancy (UNAIDS, 2012). Treatment is recommended as soon as the diagnosis is made. Without treatment the average survival time after infection is 11 years old (UNAIDS and WHO, 2007).

HIV/AIDS has had a great impact on society, both as an illness and as a source of discrimination. The disease also has large economic impact. The disease has become subject to many countries and it has attracted international medical and political attention as well as large scale funding since it was identified in the 1980s (UNAIDS, 2006).

2.2 Epidemiology of HIV/AIDS

2.2.1 HIV/AIDS in Africa

HIV/AIDS is a major public health concern and cause of death in many parts of Africa. Although the continent is home to about 15.2% of the world population (world population project, 2015) sub Saharan Africa has the most serious HIV/AIDS epidemic in the world. In 2013, an estimated 24.7 million people were living with HIV, accounting for 71% of the global total and 70% of AIDS death in 2011 (UNAIDS, 2012). In the same year, there were an estimated 1.5 million new HIV infections and 1.1 million AIDS related deaths (UNAIDS, 2014).

HIV prevalence for the region is 4.7% but varies greatly between regions with sub Saharan Africa as well as individual countries. For example, South Africa is the worst affected region and widely regarded as epicenter of the global HIV epidemic. Swaziland has the highest HIV prevalence of any country worldwide (27.4) while South Africa has the largest epidemic of any country 5.9 million people are living with HIV. By comparison, HIV prevalence in West and East Africa is low to moderate ranging from

0.5% in Senegal to 6% in Kenya. While the vast majority of new HIV infection in Sub Saharan Africa occurs in adults over the age of 25, HIV disproportionately affects young women. More than 4 in 10 new infections among women aged 15-24 (UNAIDS 2014).

According to the Religious and cultural traits in HIV/AIDS epidemics in sub Saharan Africa, 2010, the HIV infection rates in the Horn of Africa are generally quite low. This has been attributed to the Muslim of many local communities and adherence to Islamic morals. Ethopian‟s HIV prevalence rate has decreased from 3.6% in 2001 to 1.4% in 2011. The number of new infections per year also has decreased from 130,000 in 2001 to 24,000 in 2011 (UNAIDS, 2012).

2.2.2 HIV/AIDS in Ethiopia

Ethiopia is one of the Sub Saharan African countries which, is hard hit by the HIV pandemic and a large number of infected people have been living with HIV. Ethiopia accounts for a big share in the number of cases at worldwide as well as at the regional levels. Following the first detection of the virus in 1984, AIDS cases were reported in 1986 in the country. In Ethiopia the estimated prevalence rate of HIV/AIDS among different survey has got different estimates. For example, the estimate of prevalence rate from EDHS in 2005 shows that 1.4% in country level 6% in urban and 0.7% in rural areas (Central statistical Agency and EDHS, 2005).

The study conducted at Finote Selam, North West Ethiopia of those HIV positive individuals 73.6% were urban and 26.4% were rural residents. The overall prevalence of HIV among individuals was 5.4%. The highest prevalence being found in the 25 to 34 age groups and particularly in urban settings (Addisu Melese, 2013)

A trend analysis carried out for the country from 1982-2011 shows a continuous gradual rise of HIV/AIDS prevalence rate until the late 1990s and then a steady decline in the year after 2000. The national adult HIV prevalence rate was estimated at 0.2% in 1985 report, in the year 2011 the prevalence rate shows a very slight increase as compared to the 2005 prevalence rate. According this the prevalence rate of women and men of individuals in the age group 15-49 was 1.5% and a very recent report revealed that

currently the prevalence rate was estimated to be 1.9% and 1%for women and men respectively (Central statistical Agency, 2011).

The study conducted in Dilla Town Ethiopia; there were gender variation in prevalence between males and females. Majority of the HIV positive were the productive age group (15-49 ages) among both genders. HIV infected distribution in this age group was higher among females than males. The highest number of HIV infected was 38% followed by 33% and 15% in the years of 2013, 2014 and 2012 respectively. Therefore the prevalence by age group and study period were 80% for 15-49 ages in 2012, 85.72% in 2013, and also 80% in 2014. Generally the prevalence of HIV/AIDS was more among females than males (Alemu Fekadu, 2015).

The national HIV prevalence in Ethiopia is 1.4%, indicating the country has more than achieved the Millennium Development goal 6 targets of 2.5%. Annual new HIV infections have also declined by 90% and AIDS related death by 53% in the last decade (between 2000 and 2011). Across all the regions, urban areas are more affected than rural ones, and females are more affected than males by the HIV epidemic. The 2014 estimated number of people living with HIV (PLHIV) was 769,600 with 15,700 new HIV infections and 35,600 AIDS related deaths (WHO, 2014).

Ethiopia has made significant progress to insure universal access to treatment of HIV/AIDS and HIV testing and counseling (HTC) services have also expanded with about 9.6 million tests done in the 2013/14 alone. Almost 2,500 health facilities are providing prevention of mother to child transmission of HIV (PMTCT) services with a national level coverage of 61%. WHO supports the Federal Ministry of Health (FMOH) of Ethiopia in leading and coordinating the national health sector response against the HIV epidemic (U.S Department state, 2008).

The study conducted in in Ambo Hospital ANC clinic, West Ethiopia on knowledge, attitude and practice towards PMTCT all of the respondents heard about HIV/AIDS and PMCT of HIV concerning the time of transmission of the virus from infected mother to her child. Regarding method of PMTCT of HIV during breast feeding the study had

showed that exclusive breast feeding was the major method that scores 69.5% (Gurmu Tesfaye et al., 2014).

According to the report of Federal HIV/AIDS prevention and control office Ethiopia plans to prevent more than half a million AIDS related deaths and up to 80,000 new HIV infections by 2020. Ethiopia has already exceeded its previous five year target, having reduced new HIV infections from 0.28% in 2010 to 0.03% in 2015, the plan was to reach 0.14%. This makes Ethiopia among one of the most successful countries in the world. HIV prevention activities since 2010 have focused mainly on people most at risk of HIV infection like hot spot areas for sex workers and long distance truck drivers, as well as addressing harmful practices like gender biased violence (FHAPCO, 2016).

FHAPCO said that more than 3,000 health facilities give voluntary counseling and testing services (VCTS), while 377,000 people are on treatment in 1,500 service centers. Around 35,000 of these people began the service in 2015. According to FHAPCO, over 70,000 people died of AIDS in 2010. By 2015, the death rate had fallen by 70%. This is the outcome of the increased access to the antiretroviral treatment (ART).Only 20% of HIV positive children are taking ART (FHAPCO, 2016).

The study conducted in Amhara Region, Ethiopia on prevalence of HIV and associated factors among infants born to HIV positive women, the prevalence of HIV infection among infants was 10.1%. Of the total participants nearly 93% of mothers were enrolled in HIV care and support services during the last pregnancy. Among these pregnant women most of them 63.4% were taking highly active ART. Those infants born from mothers who did not receive ART were having a greater risk of HIV infection (Zelalem Berhan et al., 2014).

2.3 knowledge, attitude and related issues on HIV/AIDS

The study conducted in Dilla University and Dilla referral Hospital, Ethiopia on assessment of the current status of HIV virus and predisposing factors among students, the majority of the respondents 67.15% had the idea that HIV virus is not curable is deadly disease while, 17.6% had an idea that HIV is curable. Similarly some respondents 15.9% had the idea that, HIV patients were cured by faith (the power of God). On the other hand the majority of the respondents 49.2% males and 44.6% females did not believe in isolating HIV positive individuals while, a small number of individuals 3.43% males and 2.94% females believed in isolating those HIV positive individuals (Fekadu Alemu, 2014)

Similarly the study conducted in Kombolcha Town, South Wello Zone, Ethiopia on assessment of HIV/AIDS knowledge among windows of hope population, 76.8% of the respondents knew that HIV/AIDS has no cure or vaccine and 81.2% of them replied that a healthy looking person infected with HIV virus could transmit the disease. Regarding the knowledge on HIV/AIDS mode of transmission among the correctly mentioned unsafe sexual practice accounted 94.2%. On the other hand majority of the respondents 96.5% were not willing to help an HIV/AIDS patient and 73.7% of the respondents did not disagree PLWHA to keep their status secret from the community (Mahteme Haile, 2005).

The study conducted in Mekelle city, North, Ethiopia on knowledge and misconceptions on HIV/AIDS and associated factors 35.8% of the respondents had poor knowledge on the correct mode of transmission of HIV/AIDS. Majority 89.2% of the respondents replied that HIV/AIDS is transmitted by unsafe sexual practice. More than half 66.4% of the respondents knew that a healthy looking person could have HIV. According to the finding in the study regarding to discussion on HIV/AIDS, 50.4% of the respondents replied that they discussed about HIV/AIDS with their peers followed by 39.3% discussed with both parents, others said that, they discussed with their classmates sisters and brother, health professionals and relatives (Hafty Gebremedhin et al., 2014).

On the other study conducted in Debremarkos University on HIV/AIDS related knowledge and attitude among health science students out of the respondents, 59(36.2%) had poor knowledge while 104(63.8%) had good knowledge towards HIV/AIDS. Almost all, 162(99.4%) of the respondents knew that HIV can be transmitted through unsafe sexual contact. On the hand 84(51.5%) of the respondents had favorable attitude HIV/AIDS patients (Nurlign Abebe et al., 2014).

On the study conducted in Debrebirhan Town, Ethiopia on assessment of HIV risk conception and condom use among youth, explained that among the sexuality active respondents 76.2% claimed that they had consistent condom use while they have sex and 55.7% of the participants were believed that using condom is a practical protection option against HIV/AIDS whereas, the rest did not use condom as a preventive method from HIV infection. Some of the reasons mentioned for nonuse of condom were trusting partner, ashamed to ask partner, fear to buy from shops/pharmacy and 25.2% agreed that using condom is a sign not trusting to partner (Zebideru Zewudie, 2005).

Similarly the study conducted in Gelemso Western Harerghe, Ethiopia on assessment of voluntary counseling and testing service utilization among youths , regarding information on VCT and its importance 5.82% did not have any information about VCT. Those respondents who heard of VCT agreed on the importance of VCT. The study explained that 5.28% of the respondents were fear of HIV test. According to the findings of the study fear of stigmatization and discrimination was another main factor 20% that inhibiting VCT utilization (Anteneh Gemechu, 2013).

Also the study conducted in Bahirdar University students on prevalence of voluntary counseling and testing utilization and its associated factors from all respondents who do have high perceived risk, majority 56% of them did not get tested for HIV/AIDS. This might be because of fear of the possible positive result as they were engaged in unprotected sexual intercourse (Getachew Fikadie et al., 2014)

CHAPTER THREE

3. MATERIALS AND METHODS

3.1 Study area and period

The study was conducted in Dembecha Woreda, West Gojjam zone, Amhara Regional state, North Western Ethiopia. It is located about 350Km North West of the capital city of Ethiopia, Addis Ababa, and 220Km South East of Bahir Dar, the capital city of Amhara Region. Dembecha is located at 10°30‟ North Latitude and 37°29‟ East longitude. Dembecha is bordered on the West by Bure, on the North West by JabiTehnan, on the North by Dega Damot and on the East and South by the Misraq Gojjam zone. The Woreda is subdivided into 29 kebeles. According to the 2014 Census project population the Woreda is 150,610 (75349 were males and 75261 were females). The majority (99.13%) of the inhabitants are followers of Ethiopian Orthodox Christianity (Dembecha Woreda communication affairs office, 2017).

There are six health centers of which four of them have been giving HIV/AIDS services (especially blood test in addition to others). The HIV/AIDS services are: voluntary counseling and testing (VCT), prevention of mother to child transmission (PMTCT), provide initiating HIV/AIDS counseling and testing (PIHCT), and care and support (Dembecha Woreda Health office, 2017).

The study was conducted from September to June, 2017 in the following four district health facilities: Dembecha health center, Yechereka health center, Wad Addis Alem health center, and Anjene health center.

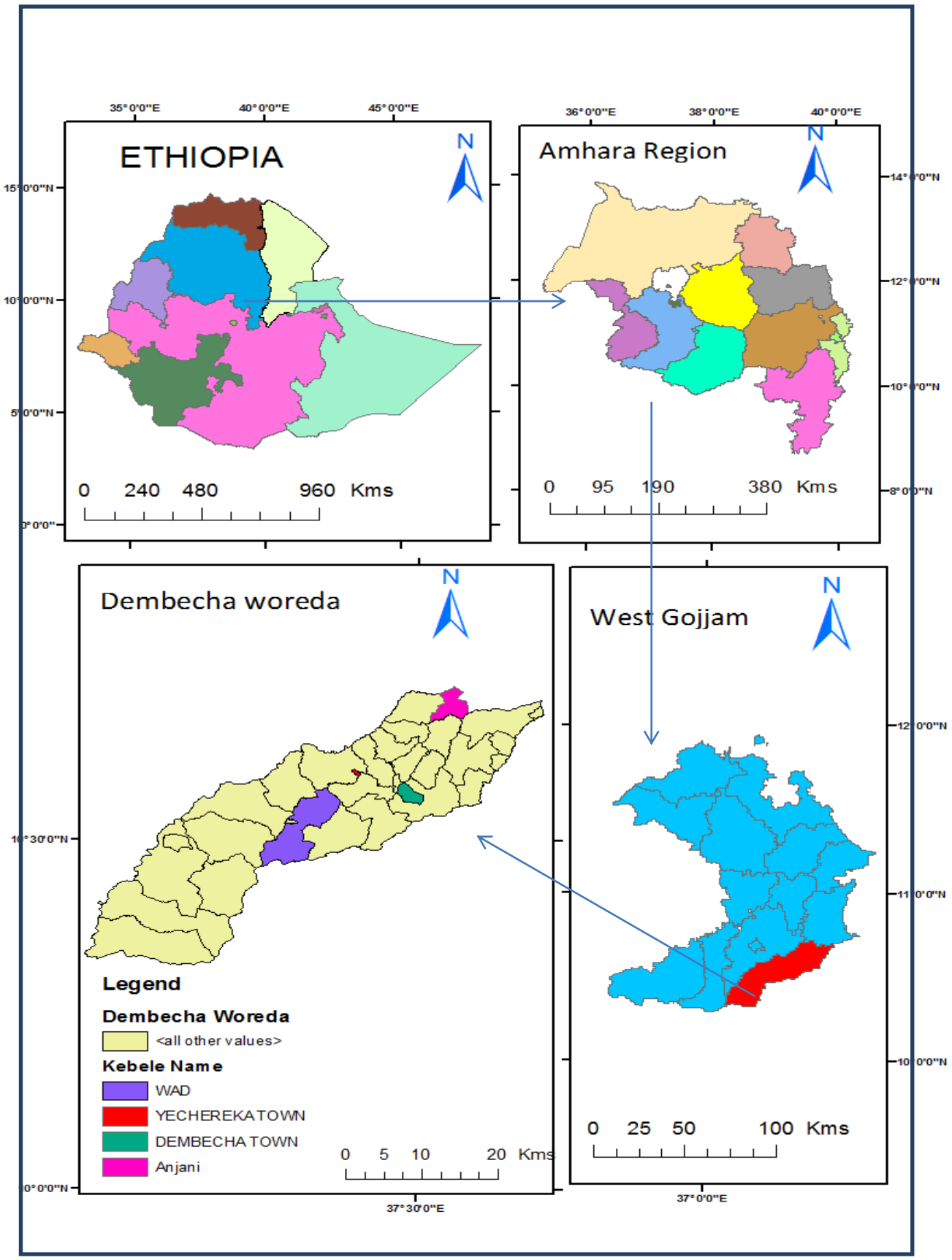

Figure: 1. Map of the study area

3.2 Research design

This research was focused on the prevalence of HIV and level of awareness. In the study, the researcher assessed the status of prevalence of HIV/AIDS and determines level of awareness in different districts. The study used a retrospective study design that employed quantitative study techniques.

3.3 Sources of population

The sources of the study population were all groups of individuals those are found in the study areas of the district.

3.4 Study population

The study population was selected individuals those are found in the district and data of HIV positive individuals which were recorded at four health centers from 2014 - 2017.

3.5 Methods of data collection

Data were generated from both primary and secondary data sources. Primary data were collected by administering questionnaires to group of selected respondents from the study areas. Questionnaire was adopted and modified from different literatures. The questionnaire was translated first into Amharic and back translated into English to assure its consistency. The collected data were checked for completeness, accuracy, clarity, and consistency. Secondary data were collected from review of institutional records from health centers in the district.

3.6 Sample size and sampling technique

The sample size was determined using population proportion general formula:

$n= N*x/(x+N-1)$

Where: - $(Z\alpha/2)^2$ is critical value of the normal distribution for confidence level of 95% = 1.96

MOE^2 (Margin of error at 95% confidence level) =0.05

P (Sample proportion of the normal distribution 50%) = 0.5

N (Population size) =28102

$x= Z\alpha/2^{2 * P} *(1-p)/MOE^{2}$ (1.96)2 * 0.5*(1-0.5)/(0.05)2 =384.16

n = 28102*384/ (384+28102-1)

n = 379+10%, additional 10% non-response rate. Then, n=417

Purposive sampling technique was used to collect data from health centers which can give HIV/AIDS services in smallest administrative units and simple random technique from informants of the people in the district. The study area has organized in to 29 Kebeles from these four districts, which have been giving HIV testing and counseling services, were selected. From each district sampled respondents were determined by using proportionate to population size. Therefore, from the total 417 respondents 192(46%) were from Dembecha, 104(25%) from Yechereka, 75(18%) from wad and 46(11%) were from Anjene.

3.7 **Study variables**

3.7.1 Dependent variables: - HIV prevalence status

3.7.2 Independent variables: - Socio demographic variables such as: age, sex, marital status, knowledge, and attitude of individuals about HIV/AIDS.

3.8 Data analysis and interpretation

Data obtained from various sources were analyzed using quantitative data analysis techniques. Quantitative data generated by questionnaire were analyzed by descriptive statistic. Data entry and analysis was performed by using statistical packaging for social sciences SPSS (version 16.0) software. For analysis of the total HIV/AIDS prevalence results were expressed in tables, charts, percentages, and graphs for description as appropriate

CHAPTER FOUR

4. RESULTS

4.1 Prevalence of HIV/AIDS among blood tested individuals in the study areas

4.1.1 Prevalence of HIV/AIDS at Dembecha health center

According to Dembecha town Health center data from 2014 to 2017 a total of 18937 people were tested their blood, of these 9031 were men and 9906 were women. The total prevalence was 0.8% (males were 0.7% and females were 0.9%). Females were more infected with the HIV epidemic compared with their males (Table 1).

Table 1:- Prevalence of HIV/AIDS among blood tested individuals at Dembecha health center.

Year	Blood tested individuals			HIV positive			Prevalence %		
	M	F	T	M	F	T	M	F	T
2014	3128	3458	6586	33	37	70	1.05	1.06	1.06
2015	2324	2531	4855	14	26	40	0.6	1.02	0.82
2016	2567	2785	5352	12	17	29	0.46	0.61	0.54
2017	1012	1132	2144	3	5	8	0.29	0.44	0.37
Total	9031	9906	18937	62	85	147	0.7	0.9	0.8

Of HIV positive individuals majority of 85(57.8%) were females and 62(42.2%) were males. The data showed that females were more affected than males. Under age 15 were 5.4%, age groups 15-49 were 78.9%, and age groups above 49 were 15.6%. Single, 49.7% divorced, and 6.1% widowed. The data reported in the institution indicated that divorced individuals were mostly affected by the virus compared with others those accounted 49.7% from the total HIV positive individuals (Table 2).

Table 2: distribution of HIV positive individuals in sex, age category, and marital status in Dembecha Health center.

Variables		Year				
		2014	2015	2016	2017	Total
		n(%)	n(%)	n(%)	n(%)	n(%)
Sex	Male	33(22.4)	14(9.5)	12(8.2)	3(2)	62(42.2)
	Female	37(25.2)	26(17.7)	17(11.6)	5(3.4)	85(57.8)
Age	<15	5(3.4)	2(1.4)	1(0.7)	-	8(5.4)
	15-49	55(37.4)	30(20.4)	24(16.3)	7(4.7)	116(78.9)
	>49	10(6.8)	8(5.4)	4(2.7)	1(0.7)	23(13.6)
Marital status	Married	8(5.4)	5(3.4)	2(1.4)	-	15(10.2)
	Single	26(17.7)	12(8.2)	10(6.8)	2(1.4)	50(34)
	Divorced	33(22.4)	20(13.6)	15(10.2)	5(3.4)	73(49.7)
	Widowed	3(2)	3(2)	2(1.4)	1(0.7)	9(6.1)

4.1.2 Prevalence of HIV/AIDS at Yechereka health center

Among 8972 (males were 4262 and females were 4710) individuals who had visited Yechereka health center from 2014-2017, the prevalence of HIV/AIDS was 0.4% (males were 0.3% and females were 0.5%). Females were more affected than males (Table 3).

Table 3: Prevalence of HIV/AIDS among blood tested individuals at Yechereka health center.

Years	Blood tested Individuals			HIV positive			Prevalence %		
	M	F	T	M	F	T	M	F	T
2014	977	1179	2156	4	8	12	0.41	0.6	0.5
2015	1187	1381	2568	3	5	8	0.25	0.36	0.31
2016	1533	1578	3111	3	7	10	0.19	0.4	0.31
2017	565	572	1137	2	4	6	0.35	0.6	0.5
Total	4262	4710	8972	12	24	36	0.3	0.5	0.4

Out of HIV positive individuals females were 24(66.7%) and males were 12(33.3%). The data showed that females were more vulnerable than males. Fewer than 15 age groups were 5.6%, 15-49 ages were 83.3%, and above 49 age groups were 11.1%. The data gathered from the institution showed that, 15-49 age groups were mostly affected by the virus. On the other hand, married individuals were 8.3%, single individuals were 36.1%, divorced were 50%, and widowed were 5.6%. The data indicated that divorced individuals were mostly affected by the virus when compared with other marital status (Table 4).

Table 4: Distribution of HIV positive individuals in sex, age and marital status at Yechereka Health center

Variables		Year				
		2014	2015	2016	2017	Total
		n(%)	n(%)	n(%)	n(%)	n(%)
Sex	Male	4(11.1)	3(8.3)	3(8.3)	2(5.6)	12(33.3)
	Female	9(25)	5(13.9)	6(16.7)	4(11.1)	24(66.7)
Age	<15	1(2.8)	-	1(2.8)	-	2(5.6)

	15-49	9(25)	8(22.5)	7(19.4)	6(16.7)	30(83.3)
	>49	3(8.3)	-	1(2.8)	-	4(11.1)
Marital status	Married	1(2.8)	1(2.8)	-	1(2.8)	3(8.3)
	Single	4(11.1)	2(5.6)	4(11.1)	3(8.3)	13(36.1)
	Divorced	8(22.1)	4(11.1)	4(11.1)	2(5.6)	18(50)
	Widowed	-	1(2.8)	1(2.8)	-	2(5.6)

4.1.3 The prevalence of HIV/AIDS at Wad health center

Among 10802 (males were 5162 and females were 5641) individuals who had visited Wad health center and tested their blood, the prevalence of HIV positive was 0.3% (males were 14(0.3%) and females were 0.4%). So, females were slightly more affected than males. The data indicated that there were variations with in years in the prevalence of the disease (Table 5).

Table 5: prevalence of HIV/AIDS among blood tested individuals at Wad health center

Year	Blood tested Individuals			HIV positive			Prevalence %		
	M	F	T	M	F	T	M	F	T
2014	1523	1755	3278	3	5	8	0.19	0.28	0.24
2015	1768	1901	3669	6	7	13	0.34	0.36	0.35
2016	1392	1483	2875	3	4	7	0.21	0.26	0.24
2017	478	502	980	2	3	5	0.41	0.59	0.51
Total	5161	5641	10802	14	19	33	0.3	0.4	0.3

Of HIV positive individuals males were 14(42.4%) and females were 19(57.6%). So, females were more affected than males. The distribution of HIV positive people within age category under 15 age groups was 3.0%, age groups 15-49 were 66.7%, and above

age groups 49 were 30.3%. Age groups of 15-49 were mostly affected by the virus compared with other age groups. The total percentage of married individuals was 30.3%, 42.4%, and Widowed were 6.1%. The data indicated that divorced and single individuals were more affected when compared with other marital status (Table 6).

Table 6: Distribution of HIV positive individuals in sex, age and marital status at Wad Health center

Variables		year				
		2014	2015	2016	2017	Total
		n(%)	n(%)	n(%)	n(%)	n(%)
Sex	Male	3(9.1)	6(18.2)	3(9.1)	2(6.1)	14(42.6)
	Female	5(15.2)	7(21.2)	4(12.1)	3(9.1)	19(57.6)
Age	<15	1(3.0)	-	-	-	1(3.0)
	15-49	5(15.2)	8(24.2)	5(15.2)	4(12.1)	22(66.7)
	>49	3(9.1)	4(12.1)	2(6.9)	1(3.1)	10(30.3)
Marital status	Married	4(12.1)	3(9.1)	-	-	7(21.2)
	Single	1(3.0)	5(15.20	3(9.1)	1(3.0)	10(30.3)
	Divorced	2(6.1)	5(15.2)	3(9.1)	4(12.1)	14(42.4)
	Widowed	1(3.0)	-	1(3.00	-	2(6.1)

4.1.4 The prevalence of HIV/AIDS at Anjene health center

Among 8014(males were 3946 and females 4068 were) individuals who had visited Anjene health center in four consecutive years. The total prevalence of HIV positive individuals were 0.3% (males were 11(0.3%) and females were 17(0.4%) Females were more affected than males (Table (7).

Table 7: Prevalence of HIV/AIDS among blood tested individuals for HIV virus at Anjene health center.

Year	Blood tested individuals			HIV positive			Prevalence %		
	M	F	T	M	F	T	M	F	T
2014	1231	1333	2564	5	6	11	0.4	0.45	0.42
2015	1406	1378	2784	3	5	8	021	0.36	0.28
2016	852	895	1747	2	4	6	0.23	0.44	0.34
2017	457	462	919	1	2	3	0.21	0.43	0.32
Total	3946	4068	8014	11	17	28	0.3	0.4	0.3

Out of HIV positive individuals males were 39.3% and females were 60.7%. Females were affected more than males. Under age group 15 were 3.6%, age group 15-49 were75.0%, and above age group 49 were 21.4%. Age groups 15-49 were the most affected age groups. The data indicated that age category affects the prevalence of HIV/AIDS. Married were 14.3%, single were 42.9%, divorced were 39.3% and widowed were 3.6%. Divorced and single individuals were affected more than married and widowed ones (Table 8).

Table 8: Distribution of HIV positive individuals in sex, age, and marital status at Anjene Health center.

Variables		Year				
		2014	2015	2016	2017	Total
		n(%)	n(%)	n(%)	n(%)	n(%)
Sex	Male	5(17.9)	3(10.7)	2(7.1)	1(3.6)	11(39.3)
	Female	6(21.4)	5(17.9)	4(14.3)	2(7.1)	17(60.7)
Age	<15	1(3.6)	-	-	-	1(3.6)
	15-49	8(28.6)	6(21.4)	4(14.3)	3(10.7)	21(75)

	>49	2(7.1)	2(7.1)	2(7.1)	-	6(21.4)
Marital status	Married	3(10.7)	1(3.6)	-	-	4(14.3)
	Single	5(17.9)	3(10.7)	2(7.1)	2(7.1)	12(42.9)
	Divorced	3(10.7)	3(10.7)	4(14.3)	1(3.6)	11(39.3)
	Widowed	-	1(3.6)	-	-	1(3.6)

4.2 Socio demographic variables of total HIV positive individuals at four health centers in the district

Out of HIV positive individuals, majority of 145(59.4%) were females and 99(40.6%) were males and 4.9% were under age 15, 77.5% were 15-49 age and 17.6% were above 49 age groups. This indicated that productive ages of individual‟s 15-49 age groups were mostly affected than other age groups. The data indicated that married individuals accounted 11.9%, single individuals 35.2%, divorced individuals 47.1%, and widowed individuals 5.7%. Divorced individuals were more affected followed by single individuals (Table (9).

Table 9:- Socio demographic characteristics of HIV positive individuals in four Health centers of the district.

Variables		Year				
		2014	2015	2016	2017	Total
		n(%)	n(%)	n(%)	n(%)	n(%)
Sex	Male	45(18.4)	26(10.7)	20(8.2)	8(3.3)	99(40.6)
	Female	57(23.4)	43(17.6)	31(12.7)	14(5.7)	145(59.7)
Age	<15	7(2.9)	3(1.2)	2(0.8)	-	12(4.9)
	15-49	77(31.6)	52(21.3)	40(16.4)	20(8.2)	189(77.5)
	>49	18(7.4)	14(5.7)	9(3.7)	2(0.8)	43(17.6)
Marital	Married	16(6.6)	10(4.1)	2(0.8)	1(0.4)	29(11.9)

status	Single	36(14.8)	22(9.0)	20(8.2)	8(3.3)	86(35.2)
	Divorced	46(18.9)	32(13.1)	25(9.8)	12(4.9)	115(47.10
	Widowed	4(1.6)	5(2.0)	4(1.6)	1(0.4)	14(5.7)

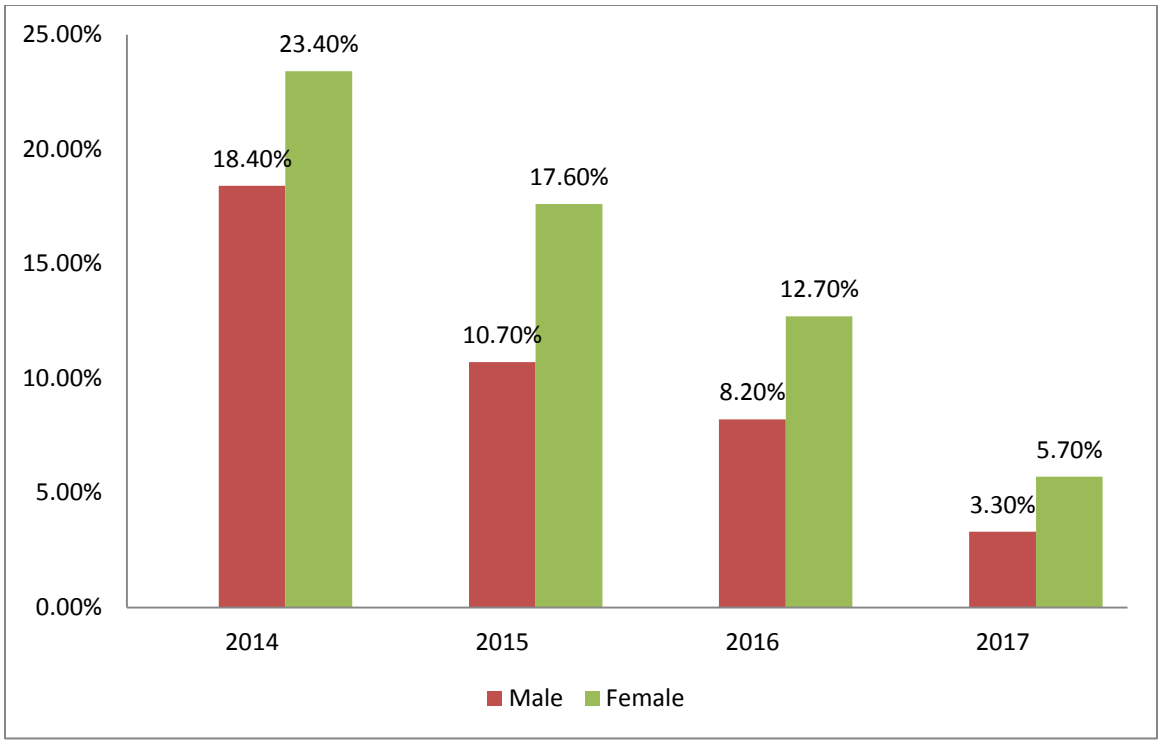

Figure2: The total percent of HIV positive individuals with in sex at four health centers per each year.

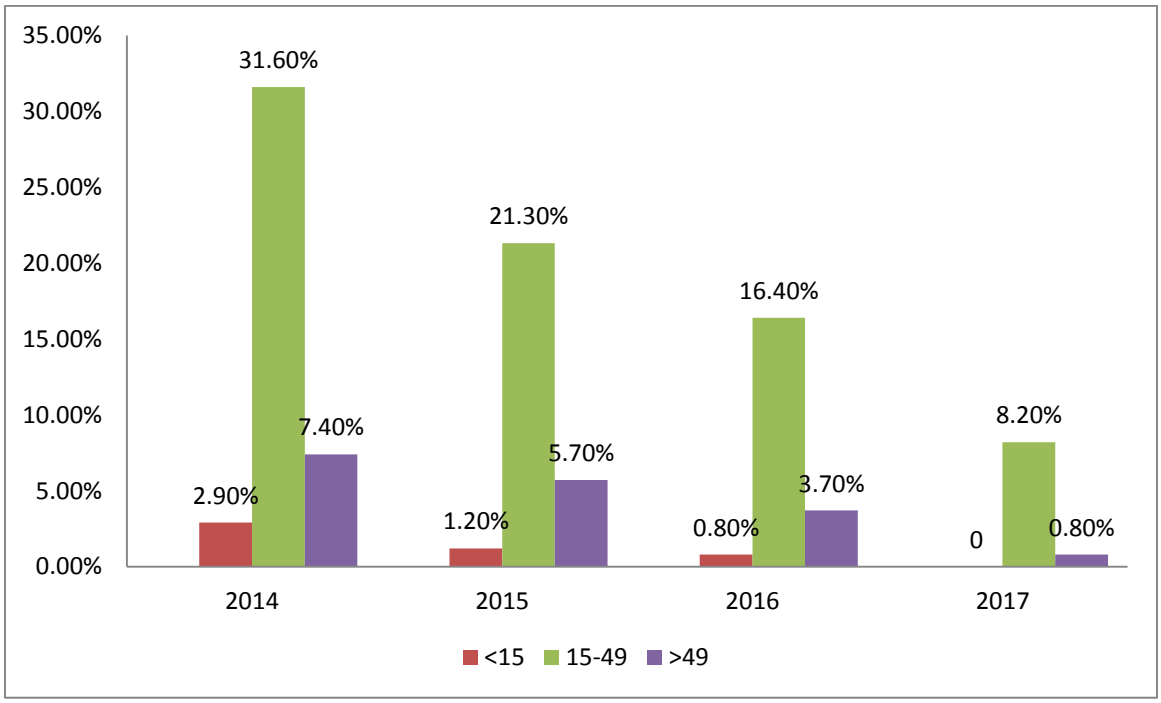

Figure 3: The percentage distribution of HIV positive individuals with in age category at four health centers in the district per each year.

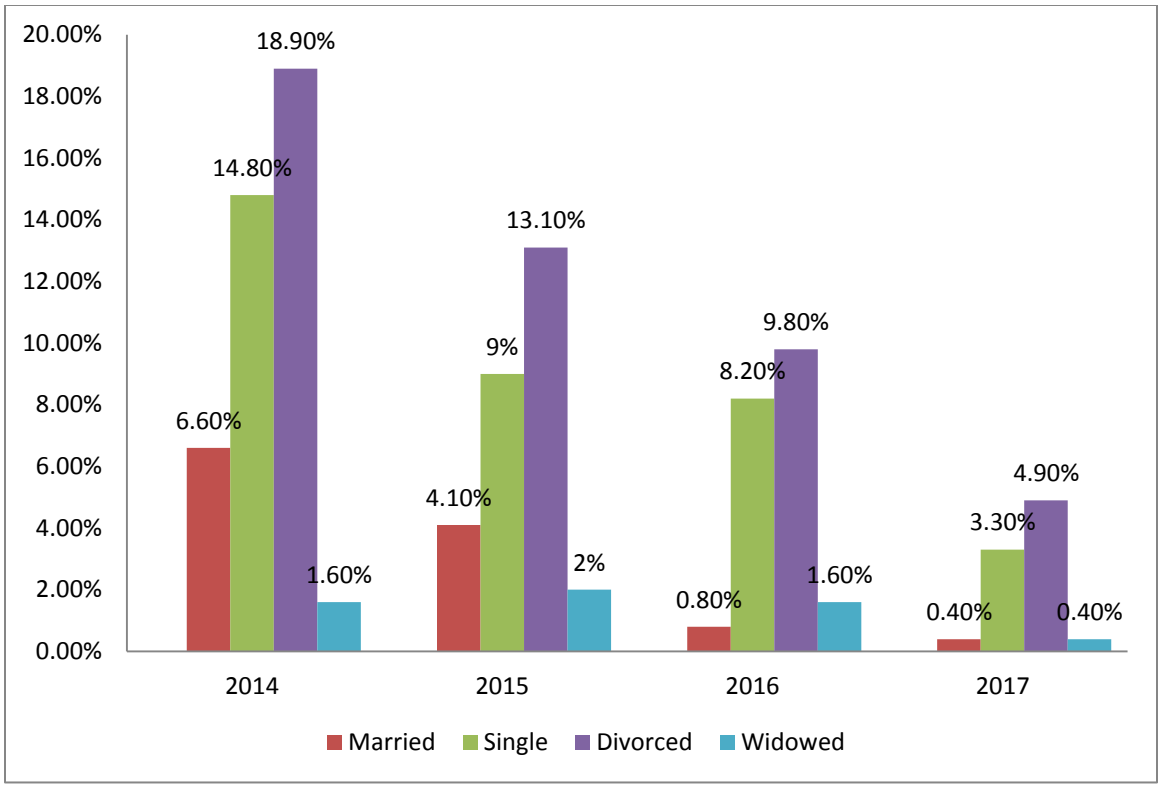

Figure 4: The total percentage distribution of HIV positive individuals with in marital status per each year.

4.3 Socio-demographic characteristics of respondents

A total of 417 respondents participated in the study. However; 13 respondents did not appropriately fill the questionnaires thus excluded from analysis, making the response rate 96.8%. Out of the total 404 respondents, 204 (50.5%) were males and 200(49.5%) were females. 341 (84.4%) of the respondents were Orthodox Christian and the rest 63(15.6%) were followers of Muslim religion. Majority of the respondents 285 (70.5%) were in the age group 15-49. Of the respondents 166 (41.1%) were single and 171 (42.3%) were married. Large number of respondents 181 (44.8%) were primary school educated. The number of merchant respondents were 146(36.1%), farmers were 125(30.9%), civil servants were 32(7.9%) and other respondents 101(25%) were individuals who had been working in different occupations like daily labor, house wife and the like (Table 10).

Table10: Socio demographic characteristics of respondents in Dembecha Woreda at four Kebeles in the district.

Variables		Frequency	Percent
Sex of respondents	Male	204	50.5
	Female	200	49.5
Age of respondents	<15	27	6.7
	15-49	285	70.5
	>49	92	22.8
Marital status	Married	171	42.3
	Single	166	41.1
	Divorced	60	14.9
	Widowed	7	1.7
Religion	Orthodox Christian	347	84.4
	Muslim	63	15.6
Educational level of	Uneducated	88	21.8
	Primary education	181	44.8

respondents	Secondary education	99	24.5
	College and University	36	8.9
Occupational status of respondents	Civil servant	32	7.9
	Farmer	125	30.9
	Merchant	146	36.1
	Others	101	25

4.4 Knowledge about HIV/AIDS and related issues

Out of the total respondents for HIV/AIDS and related issues, majority of 378(93.6%) replied that HIV/ AIDS is not a curable disease, 22 (5.4%) believed that the disease is given from super natural power as a punishment and 4(1.0%) of the respondents responded that HIV/AIDS is a curable disease.

All respondents did not agree in the issue that an individual who has HIV virus in his/her blood should be isolated from others. Out of 311 (77.0%) of the respondents were disagreed and 93(23%) were strongly disagreed.

A large number of respondents 189(46.8%) agreed that a person who has HIV virus in his/her blood should keep secret from others, 142(35.1%) were disagreed, 66(16.3%) were strongly disagreed and 7(1.7%) were strongly agreed with the idea.

Respondents of 227 (56.2%) had been discussed on HIV/AIDS and 177(43.8%) were not discussed on it. Majority of the respondents 83(20.5%) were discussed on HIV/AIDS with their friends, 96(23.8%) with health professionals, 35(8.7%) with teachers and few number of respondents with their parents 13(3.2%) (Table 11).

Table 11:- people's response to the questionnaires on the knowledge and related issues of HIV/AIDS.

Types of questions	Response	Frequency	Percent
Is HIV/AIDS curable?	Not curable	378	93.6
	Curable	4	1.0
	From super natural power	22	5.4
Do you agree that an individual who has HIV virus in his/her blood should be isolated from others?	Agree	-	-
	Strongly agree	-	-
	Dis agree	311	77.7
	Strongly disagree	93	23
Do you agree that an individual who has HIV virus in his/her blood should keep his/her status secret to other individuals?	Agree	189	46.8
	Strongly agree	7	1.7
	Disagree	142	35.1
	Strongly disagree	66	16.3
Did you discuss about HIV/AIDS with other people?	Yes	227	56.2
	No	177	43.8
If your answer for question number „4"yes with whom did you discuss?	Friends	83	20.5
	Parents	13	3.2
	Health experts	96	23.8
	Teachers	35	8.7

4.5. Knowledge on HIV/AIDS mode of transmission and prevention method.

The majority of respondents 291(72%) were visited HIV/AIDS blood test centers and 113(28%) respondents were not knew their status of the virus. From those respondents who had tested their blood 101(25%) were in PMTCT service, 100(24.8%) were in PIHCT service and 90(22.3%) were in VCT service.

Three hundred seventy eight (93.6%) of the respondents said that unsafe sexual contact is the transmission method of HIV virus from infected person to healthy person, 16(4%) respond that the virus mainly transmit during blood transfusion, 6(1.5%) from mother to child during delivery or after delivery and 4(1%) respondents replied that HIV virus mainly transmit through infected sharp materials.

Two hundred and twenty (54.5%) of the respondents said that there have been an education focus on HIV/AIDS in their surrounding and 184(45.5%) of the respondents respond that there had not been an education on the issue of HIV/AIDS in their surroundings.

From those respondents who had an education on the awareness of HIV/AIDS 146(35.4%) responded that the awareness had been given by health professionals, 53(13.1%) of the respondents said that the education had been given by teachers, 21(5.2%) replied that religious leaders had given the awareness.

Majority of the respondents 340(84.2%) replied that a pregnant woman infected with HIV virus could transmit the virus to her unborn child, 9(2.2%) respond that an infected pregnant mother could not transmit the virus to her unborn child and 55(13.6%) of the respondents did not have any knowledge on the issue.

On the other hand 106(26.2%) of the respondents said that an infected mother with HIV virus could not transmit the virus to her new born child through breast feeding, 144(35%) responded that the virus could transmit from infected mother to her new born child through breast feeding and 154(38.1%) of the respondents had not any knowledge on this issue.

One hundred and seventy eight (44.1%) of the respondents said that a healthy looking person could have HIV virus in his/her blood, 101(25%) replied that a healthy looking person could not have HIV in his/her blood and 125(30.9%) of the respondents did not know whether a healthy looking person could have HIV virus or not.

One hundred forty three (35.4%) of the respondents said that individuals could protect from HIV infection by using condom correctly every time they have sex, 119(29.5%) of the respondents responded that individuals could not protect themselves from HIV infection by using condom and 142(35.1%) of the respondents did not know whether individuals protect themselves from infected with HIV by using condom or not (Table 12).

Table 12:- People's response to the questionnaires on the prevention and transmission methods of HIV/AIDS.

Types of questions	Response	Frequency	Percent
Have you ever tested for HIV?	Yes	291	72
	No	113	28
If your answer to question number „1" is yes from which service did you test?	VCT	90	22.3
	PMTCT	101	25
	PIHCT	100	24.8
What did you think about the main transmission of HIV from infected person to healthy person?	Un safe sexual contact	378	93.6
	During blood transfusion	16	4.0
	From infected mother to her child	6	1.5
	With infected sharp materials	4	1.0
Do you have an education center focus on the awareness of HIV/AIDS in your surrounding?	Yes	220	54.5
	No	184	45.5
If your answer to question number	Religious leaders	21	5.2

„4" is yes who has given the education?	Teachers	53	13.1
	Health experts	146	35.4
Can a pregnant woman infected with HIV virus transmit the virus to her unborn child?	Yes	340	84.2
	No	9	2.2
	Do not know	55	13.6
Can a pregnant woman with HIV virus transmit the virus to her new born child through breast feeding?	Yes	106	26.2
	No	144	35
	Do not know	154	38.1
Do you think that a healthy looking person can be infected with HIV?	Yes	178	44.1
	No	101	25.0
	Do not know	125	30.9
Can people protect themselves from HIV by using condom correctly every time they have sex?	Yes	143	35.4
	No	119	29.5
	Do not know	142	35.1

CHAPTER FIVE

5.1 DISCUSSION

HIV positive males were 99(40.6%) and females were 145(59.4%). Similarly the study conducted at Finote Selam 55.6% of HIV positive clients were females and Dilla Town Ethiopia higher HIV positive individuals were females than males (Addisu Melese, 2013, Alemu Fekadu, 2015). This concluded that in the prevalence of HIV/AIDS females were more vulnerable than males in the epidemic.

The highest rate of HIV positive individuals were in the age 15-49 groups (77.5%) followed by above 49 age groups (17.6%). This findings were also seen in another studies done in Dilla Town and Dilla referral Hospital majority of 80% of individuals that live with HIV virus were age(15-49) among both female and male ((Fekadu Alemu, 2014).This shows that the productive age groups of the community were affected more by the virus than other age groups.

The majority of HIV positive individuals (47.5%) were divorced followed by single individuals (35.2%). This finding is also similar with a study done in Finote selam Hospital in which majority of (63.2%) infectious among VCT clients were never married (Addisu Melese, 2013). In similar study which is conducted in Jinka town health institutions marital status characteristics were strong predictors for HIV. Pregnant mothers who have no partners were more affected than pregnant mothers who had partners (Wanzahun Godana and Abraham Atta, 2013). This indicated that divorced and single individuals were exposed to the virus than other marital status. This might show that individuals who have no partner were practicing unsafe sex and have many sexual partners. This increases the chance to be infected with HIV.

The total prevalence of HIV positive individuals in four districts was 0.41% (males were 0.4% and females were 0.5%). The prevalence differed among each health center that was Dembecha 0.7%, Yechereka 0.41%, both Wad and Anjene 0.3%. This finding is relatively lower compared to national HIV estimate in Ethiopia 1.4% (WHO, 2014) and the prevalence in Amhara Region 1.6% (EDHS, 2011). On the other hand this finding is comparable with the reported Global HIV prevalence of 0.8% (UNAIDS, 2015).This

indicates that the HIV prevalence of the district was slightly lower than the prevalence in the country and regional level.

The percentage of HIV positive individuals was 147(60.2%) at Dembecha 36(14.8%) Yechereka 33(13.5%) Wad and 28(11.5%) Anjene. According to WHO (2014) HIV estimate the prevalence varied among the regions in which across all the regions urban areas were more affected than rural ones.

Similarly this study indicated that more HIV positive individuals were recorded at Dembecha health center followed by Yechereka health center because Dembecha and Yechereka health centers are settled in the main road to Bahir Dar and center of other towns. This finding is similar with the study conducted in Ethiopia (Sileshi Haile, 2013).This shows that the prevalence rate was increased in Urban than Rural areas because in urban areas there might be a high prevalence of sexual networking.

The highest rate HIV positive individuals were in the 15-49 age groups in all health centers. Dembecha 116(78.9%), Yechereka 30(83.3%), Wad 22(66.7%) and Anjene 21(75.0%) from HIV positive individuals at each health center. This indicated that productive age groups of individuals were more vulnerable than other age categories.

On the other hand, this study gives important information regarding the knowledge on HIV/AIDS, mode of transmission and prevention methods, attitude towards people living with the virus and factors that influence their knowledge and attitude.

The majority of respondents (93.6%) knew that HIV/AIDS is not a curable disease. This showed that most respondents understand the disease has no vaccine and medicine to cure it. Twenty two (5.4%) believed that the disease is given from super natural power as a punishment. This is almost similar to the study done in Kombolcha Town, South Wello Zone in which 76.8% of the respondents responded that HIV/AIDS has no cure or vaccine (Mahteme Haile, 2005).

All respondents were not agreed in the issue that an individual who has HIV virus in his/her blood should be isolated from others. In similar study which was conducted in Kombolcha Town, majority of the respondents (96.5%) displayed that non stigmatized

attitude towards AIDS patients and PLWHA (Mahteme Haile, 2005).This might be indicated that respondents have awareness to care and support people living with the virus.

A large number of respondents 189(46.8%) were agreed that a person who has HIV virus in his/her blood should keep secret from others. This finding is also consistent with a study done in Kombolcha Town, South Wello Zone in which 73.7% of the respondents replied that they did not disagree PLWHA to keep their status secrete from the community (Mahteme Haile, 2005). This shows that there was fear of stigma and discrimination in the society.

Although (56.2%) of respondents had been discussed on HIV/AIDS other respondents (43.8%) were not discussed on it. Majority of the respondents (20.5%) were discussed on HIV/AIDS with their friends, (23.8%) and with health professionals. This finding is also comparable with a study done on the knowledge of HIV/AIDS in Kombolcha Town in which majority of the respondents (75.8%) replied that they discussed about HIV/AIDS with their friends (Mahteme Haile, 2005). This might show that those who discussed with their friends may have better knowledge because of free exchange of ideas.

The majority of respondents (72%) visited HIV/AIDS blood test centers and (28%) respondents were not knew their status of the virus. From those respondents who had tested their blood (25%) were in PMTCT service, (24.8%) were in PIHCT service and (22.3%) were in VCT service. Similarly the study conducted at Gelemso High school 5.8% of respondents reported that fear of stigmatization and discrimination is the main factor that inhibits VCT utilization (Anteneh Gemechu, 2013). Similarly the study conducted in Bahirdar University students 56% of the respondents did not get tested for HIV/AIDS because of fear of the possible positive results as they were engaged in unprotected sexual intercourse (Getachew Fikadie et al., 2014). This showed that many individuals did not understand the benefits of HIV/AIDS services in the fight against the virus.

Three hundred seventy eight (93.6%) of the respondents said that unsafe sexual contact is the main transmission method of HIV virus from infected person to healthy person. This

finding is also similar with the study conducted at Mekelle city in which 89.2% of the respondents replied that HIV is transmitted by unsafe sexual practice and in Debre Markos University almost all 99.4% of respondents knew that HIV can be transmitted through unsafe sexual contact (Haftay Gebremedhin et al., Nurlign Abebe et al., 2014). This shows that people had good knowledge that unsafe sexual contact is the main transmission methods of HIV virus.

Two hundred twenty (52.6%) of the respondents said that there have been an education focus on HIV/AIDS in their surrounding and (45.5%) of the respondents responded that there had not been an education on the issue of HIV/AIDS in their surroundings.

Out of those respondents who had an education on the awareness of HIV/AIDS (35.4%) responded that the awareness had been given by health professionals, (13.1%) of the respondents said that the education had been given by teachers, (5.2%) replied that religious leaders had given the awareness. This finding also similar with the study conducted in Mekelle city (Hafty Gebremedhin et al., 2014). This finding indicated that most of the task of education on the awareness of HIV/AIDS was given to health professionals but, others were not involved as health professionals did.

Majority of the respondents (84.2%) replied that a pregnant woman infected with HIV virus could transmit the virus to her unborn child, (2.2%) responded that an infected pregnant mother could not transmit the virus to her unborn child and (13.6%) of the respondents did not have any knowledge on the issue. Similar finding was also reported in the study conducted in Amhara Region (Zelalem Berhanu et al., 2014). This shows that small number of participants had awareness on the transmission of HIV virus from mother to child.

On the other hand (35%) of the respondents said that an infected mother with HIV virus could not transmit the virus to her new born child through breast feeding, (26.2%) responded that the virus could transmit from infected mother to her new born child through breast feeding and (38.1%) of the respondents had not any knowledge on this issue. Similarly the study conducted at Ambo Hospital ANC clinic some of the respondents 28(11.9%) did not know whether HIV transmit through breast feeding or not

(Gurmu Tesfaye et al., 2014).This shows that some people did not have knowledge on the transmission of HIV virus through breast feeding.

One hundred seventy eight (44.1%) of the respondents said that a healthy looking person could have HIV virus in his/her blood, (25%) replied that a healthy looking person could not have HIV in his/her blood and (30.9%) of the respondents did not know whether a healthy looking person could have HIV virus or not. This similar finding is also reported in the study done in Kombolcha Town, South Wello Zone majority of the participants (77.0%) said that a healthy looking person could have HIV/AIDS (Mahteme Haile, 2005). This finding implies that most people had awareness that every individual could have HIV virus in his/her blood.

One hundred forty three (35.4%) of the respondents said that individuals could protect from HIV infection by using condom correctly every time they have sex (29.5%) of the respondents responded that individuals could not protect themselves from HIV infection by using condom and (35.1%) of the respondents did not know whether individuals protect themselves from infected with HIV by using condom or not.

As the study conducted in Debrebirhan Town Amhara region 55.7% of the participants were believed that using condom is a practical protection option against HIV/AIDS and 25.2% agreed that using condom is a sign of not trusting to partner (Zebideru Zewudie, 2005). This could be explained that still there is a misconception and lack of knowledge among the community in using condom as a preventive mechanism to the transmission of HIV virus.

CHAPTER SIX

6. CONCLUSION AND RECOMMENDATION

6.1 Conclusion

From this study, it is possible to conclude that the prevalence of HIV/AIDS was more prevalent among females than males. The study also revealed that younger and productive age groups were more affected by HIV infection. This implies that a negative consequence of the country and the future generation.

The study indicated that divorced and single individuals were exposed to the virus. This might show that individuals who had no partner were practicing unsafe sex and had many sexual partners. The condition increases the chance to be infected with the virus.

On the other hand, most of the people had positive attitude towards a person who had HIV virus in his/her blood. This might show that people have an awareness to give care and support PLWHA. In addition most people used condom when they have sex while others had not used condom. This shows that some people still had negative attitude towards use of condom and lack of knowledge.

In this study the prevalence of HIV/AIDS in the district was slightly lower than the prevalence in country and regional level. This might explained that people had knowledge on the transmission method of the virus.

In this study majority of the people replied that a pregnant woman infected with HIV could transmit the virus to her unborn child. On the contrary, other people responded that HIV infected woman could not transmit the virus to her new born child. This shows that still people had doubted whether the virus transmit through breast feeding or not.

The number of HIV positive individuals was higher in Dembecha health center than other administrative units of the study areas. This indicated that those people who were living in urban areas were more affected than rural areas.

6.2 Recommendations

Based on the results obtained and the conclusion drawn, the following recommendations are forwarded.

- Stakeholders found in the district, particularly those are working on HIV/AIDS should work on the prevention and control mechanisms of the virus.
- Expansion of HIV/AIDS services with well trained counselors and educate people to test their blood.
- Health professionals in each health centers should design programs with comprehensive education on sexual and reproductive health to protect people from situations and behaviors that would place them at risk of HIV transmission.
- Strengthen community based education in focus on behavioral change to prevent HIV infection because knowledge alone does not help to combat the epidemic.
- Further study is needed to understand the factors associated with HIV/AIDS which can increase the prevalence of the virus.

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APPENDIX ONE

ADDIS ABABA UNIVERSITY

COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCE

DEPARTMENT OF BIOLOGY

Questionnaire

Dear respondents! This questionnaire is used to gather information to the study on the prevalence of HIV and level of awareness in Dembecha woreda health centers. It is aimed to understand the general awareness of the community on HIV/AIDS and indicate appropriate solutions on the prevention and controlling of the disease. Based on this objective you are requested to fulfill the following questions accordingly. Please circle your response.

No need of writing your name.

Thank you very much for your cooperation!

I. Demographic characteristics of the respondents

No.	Variables	Response	Code
1.	Sex	Male	1
		Female	2
2.	Age group	<15	1
		15-49	2
		>49	3
3.	Marital status	Married	1
		Single	2
		Divorced	3
		Widowed	4

4.	Religion	Orthodox Christian	1
		Muslim	2
5.	Educational level	Uneducated	1
		Primary education	2
		Secondary education	3
		College and University	4
6.	Occupational status	Civil servant	1
		Farmer	2
		Merchant	3
		Student	4
		Others	5

II. Questionnaires on the knowledge and related issues of HIV/AIDS

No.	**Questions**	**Response**	**Code**
1.	Is HIV/AIDS curable?	Curable	1
		Not curable	2
		From super natural power	3
2.	Do you agree that an individual who has HIV virus in his/her blood should be isolated from others?	Agree	1
		Strongly agree	2
		Disagree	3
		Strongly disagree	4
3	Do you agree that an individual who has	Agree	1

	HIV virus in his/her blood should keep his/her status secret to other individuals?	Strongly agree	2
		Disagree	3
		Strongly disagree	4
4.	Did you discuss about HIV/AIDS with other people?	Yes	1
		No	2
5.	If your answer for question number „4" is yes with whom did you discuss?	Friends	1
		Parents	2
		Health experts	3
		Teachers	4
		Others	5

III. Questionnaires on the prevention and transmission of HIV/AIDS

No.	**Questions**	**Response**	**Code**
1.	Have you ever tested for HIV?	Yes	1
		No	2
2.	If your answer for question number „1"is yes from which service did you test?	VCT	1
		PMTCT	2
		PIHCT	3
		Others	4
3	What do you think about the main transmission of HIV virus from infected	Unsafe sexual contact	1
		During blood transfusion	2

	person to healthy person?	From infected mother to her child	3
		With infected materials	4
4.	Do you have an education focus on the awareness of HIV/AIDS in your surrounding?	Yes	1
		No	2
5.	If your answer for question number „4" is yes who has given the awareness?	Religious leaders	1
		Teachers	2
		Health experts	3
		Others	4
6.	Can a pregnant women infected with HIV virus transmit the virus to her unborn child?	Yes	1
		No	2
		Do not know	3
7.	Can women with HIV virus transmit the virus to her new born child through breast feeding?	Yes	1
		No	2
		Do not know	3
8.	Can people protect themselves from HIV by using condom correctly every time they have sex?	Yes	1
		No	2
		Do not know	3
9.	Do you think that a healthy looking person can be infected with HIV?	Yes	1
		No	2
		Do not know	3

APPENDIX TWO

በአዲስ አበባ ዩኒቨርስቲ የድኅረ ምረቃ ትምህርት ቤት ለሁለተኛ ዲግሪ ትምህርት ማሙያ ጥናት የተዘጋጀ መጠይቅ። (2009 ዓ.ም)

የፅሑፍመጠይቅ

ይህ የፅሑፍ መጠይቅ የተዘጋጀው የኤች አይቪ ኤድስ ስርጭትን ሁኔታ ለማወቅ ለሚደረግ ጥናት አጋዥ መረጃ ሲሆን በመጠይቁ ማህበረሰቡ በኤች አይቪ ኤድስ ላይ ያለውን የግንዛቤ ደረጃ በመረዳት በሽታውን ለመቆጣጠርና ለመከላከል አመች መፍትኄ ለመጠቆም ይረዳ ዘንድ ነው። ይህን ዓላማ ተገንዝበው መጠይቁን በተክክል ይሞሉልን ዘንድ ትብብርዎን እንጠይቃለን።

ስምመግፍአያስፈልገም

"**መረጃውን በትክክል ስለሞሉ እናመሰግናለን!**"

ሀ. አጠቃላይመረጃ

I. ፆታ፡- 1. ወንድ 2. ሴት ዕድሜ ------

II. ሐይማኖት፡- 1. ኦርቶዶክስክርስቲያን 2. ሙስሊም
3. ካቶሊክ 4.ፕሮቴስታንት 5. ሌላ ካለ ይገለጽ------

III. የጋብቻሁኔታ፡- 1. ያገባ 2. ያላገባ 3. በፍች የተለየ
4. በሞት የተለየ 5. ሌላ ካለ ይገለጽ-----

IV. የትምህርት ሁኔታ፡- 1.መደበኛ ትምህርት ያልተማሩ
2. የመጀመሪያ ደረጃ ትምህርት የተማሩ 3. ሁለተኛ ደረጃ ትምህርት የተማሩ 4. ኮሌጅ እና ዩኒቨርስቲ የተማሩ

V. የስራሁኔታ፡- 1. የመንግስት ሠራተኛ 2. አርሶአደር
3. ነጋዴ 4. ተማሪ 5 .ሌላ ካለ ይገለጽ----------

ለ. በኤች አይ ቪ ግንዛቤና ተያያዥ ጉዳዮች ላይ ተዘጋጀ የፅሑፍ መጠይቅ

1. ስለ ኤች አይቪ ኤድስ በሽታ ያለዎት ግንዛቤ ምንድን ነው? 1.የሚፈወስ በሽታ ነው

2. የማፈወስ በሽታ ነው 3. ከአምላክ የተላከ ቁጣ ነው 4. ሌላ ካለ ይገለጽ-

2. ቫይረሱ በደሙ ውስጥ ያለበት ሰው ከሌሎች ሰዎች ተገልሎ መኖር አለበት በሚለው ሀሳብ ይስማማሉ?

1. እስማማለሁ 2. በጣም እስማማለሁ 3. አልስማማም

4. በጣምአልስማማም

3. ቫይረሱ በደሙ ውስጥ ያለበት ሰው ጉዳዩን ከሌሎች በሚስጠር መያዝ አለበት በሚለው ሀሳብ ይስማማሉ?

1. እስማማልሁ 2. በጣም እስማማለሁ 3. አልስማማም

4. በጣም አልስማማም

4. ስለ ኤች አይቪ ኤድስ በሽታ ከሌሎች ጋር ይዎያያሉ? 1. እወያያለሁ

2. አልወያይም

5. ለተራ ቁጥር 4 መልስዎ እወያያለሁ ከሆነ ከማን ጋር ነው የሚዎያዩት?

1. ከጓደኛ 2. ከወላጅ 3. ከጤና ባለሙያ 4. ከመምህራን

5. ሌላ ካለ ይገለጽ-------

ሐ. በኤች አይቪ ኤድስ በሽታ መከላከልና መቆጣጠር ዙሪያ ያለውን ሁኔታ ለመዳሰስ የተዘጋጀ የፅሑፍ መጠይቅ

1 የኤች አይቪ ኤድስ ምርመራ አድርገው ያውቃሉ? 1. አዎ 2. የለም

2 ለተራቁጥር '1'መልሰዎ አዎ ከሆነ በምን ምክንያት ነው የተመረመሩት?

1. በፈቃደኝነት እራሴን ለማወቅ 2. በወሊድ ክትትል ወቅት 3.ለሌላ በሽታ ህክምና በሄድኩበት 4. ሌላካለይገለጽ----------

3 **ኤች አይቪ ቫይረስ በአብዛኛው ቫይረሱ በደሙ ውስጥ ካለበት ሰው ወደ ጤነኛው የሚተላለፈው በየትኛው መንገድ ነው ብለው ያምናሉ? 1. ጥንቃቄ በጎደለው የግብረስጋ ግንኙነት 2. በደም ልገሳ ወቅት 3. በወሊድ ወቅት ወይም ከወሊድ በኋላ ከእናት ወደ ልጅ 4. በቫይረሱ በተበከሉ ስለታም ነገሮች 5. ሌላ ካለ ይገለጽ**

4 **በአካባቢዎበኤችአይቪኤድስዙሪያየግንዛቤማስጨበጫትምህርትይሰጣል?**

1. አዎ 2. አይሰጥም

5 **ለተራቁጥር '4' መልሰዎ አዎ ከሆነ ትምህርቱን የሚሰጠው ማነው?**

1. የሐይማኖት አባቶች 2. መምህራን 3. የጤና ባለሙያዎች

4. ሌላ ካለ ይገለጽ----------

6 **ኤች አይቪ ቫይረስ በደሟ ያለባት ነፍሰጡር ሴት ቫይረሱን ወደ ጽንሱ ማስተላለፍ ትችላለች? 1. አዎ 2. አትችልም 3. አላውቅም**

7 **ኤች አይቪ ቫይረስ በደሟ ውስጥ ያለባት ሴት አዲስ ወደ ተወለደ ልጅ ቫይረሱን በጡት አማካኝነት ልታስተላልፍ ትችላለች? 1. አዎ 2. አትችልም 3. አላውቅም**

8 **ጤናማ መሰል ሰዎች በኤች አይቪ ቫይረስ የተጠቁ ሊሆኑ ይችላሉ ብለው ያስባሉ? 1.አዎ 2. አላስብም 3. አላውቅም**

9 **ሰዎች በግበረስጋ ግንኙነት ወቅት ኮንዶምን በትክክል በመጠቀም ከኤች አይቪ ቫይረስ ራሳቸውን መከላከል ይችላሉ ? 1. አዎ 2. አይችሉም 3. አላውቅም**