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Assessment of Knowledge, Attitude and Practice towards HIV/AIDS among the Urban Community of Adwa, Northern Ethiopia

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Abbreviations and Acronyms

AIDS = Acquired Immunodeficiency Syndrome

ANC = Antenatal care

ART= Antiretroviral therapy

ARV =Antiretroviral

CSA = Central Statistics Agency

EDHS =Ethiopian Demography Health Survey

HAPCO =HIV/AIDS Prevention and Control Office

HIV =Human Immunodeficiency virus

HMIS=Health Management Information System

MOH=Ministry of Health

NGOs =Non-Governmental Organizations

NACPO=National AIDS Control and Prevention Office

PMTCT=Prevention of mother to child transmission

SNNPR =Southern Nations, Nationalities and Peoples Region

SDGs =Sustainable Developmental Goals

SSA =Sub-Saharan of Africa

THB =Tigray Health Bureau

UNAIDS =Joint United Nations Programme for HIV/AIDS

UNDP =United Nations Development Programme

USAID=United States Agency for International Development

VCT = Voluntary Counselling and Testing

WHO = World Health Organization

Abstract

AIDS is one of the greatest public health and social problems that challenging the human race in the globe. In the 2018 alone, about 37.9million people were living with the virus worldwide. Among which sub-Saharan Africa region, where the highest number with an estimated 70% of the global victims of HIV is found. Ethiopia is hardly affected by the HIV pandemic and 690,000 infected people had been living with HIV in 2018. The aim of this study was to investigate the current status of HIV infected individuals in the study area (Adwa town) and, exploring knowledge, attitude, and practice (KAP) among the study participants toward HIV. A cross-sectional study was carried out on 408 participants. Random sampling technique was used to select representative kebelles and study participants from in each kebelle. Well-structured questionnaires were used to collect KAP data towards HIV.SPSS version 24 was used for the analysis of quantitative data. We enrolled 408 respondents, of which 64.0% were males and 36% were females. Majority of the respondents had informed about HIV regardless of the sources. Most (96.6%) knew that AIDS is caused by HIV virus and over 95% of them also know the mode of transmission. The majority (86.1%) agreed that HIV is not a curable disease and only few (13.9%) had misconception towards the curability of the disease. With regard to the mode of prevention and control of HIV, 73.0, 96.1, 96.2 and 93.5% of the study participants agreed that abstained, condom use, limited sex, and no sex with prostitutes were the ways of protection against HIV respectively. In addition to these, respondents also mentioned that blood transfusion and injection from unknown sources were means of acquisition of HIV. Interestingly, the majority (90%) of the study participants' attitude towards HIV and people living with HIV (PLHIV) were positive. Over seventy four percent of the study participants had history of sexual intercourse and most of them had first sex without the use of condom. From the total (408) participants of the study, slightly over half (54.5%) were tested for HIV, and rest were not yet tested. In conclusion, the overall knowledge and attitudes of the study participants were very high. However, very low practices towards HIV were observed among the study participants. Therefore, the study area requires a special attention, because there are high HIV risk practices among the community.

Key words: Adwa, AIDS, HIV, KAP, People Living with HIV (PLHIV)

1 Introduction

1.1Background of the Study

Immunodeficiency syndrome - is caused by the human immunodeficiency virus - is one of the greatest public health and social problems frightening the human race, globally. AIDS is now one of worlds' most serious public health challenges. But there is a global commitment to stopping new HIV infections and ensuring that everyone living with HIV has access to HIV treatment. An estimated 37.9 million people worldwide were living with HIV by the end of 2018, of which 1.8 million individuals were children (<15 years age) and 1.8 million individuals worldwide were become newly infected. More than 70% of HIV infected people are living in the developing countries among which most of them are in Sub-Saharan Africa, which accounts more than two-thirds of the people living with HIV worldwide, (WHO, 2018). Globally, women are representing half of all adults with HIV and this proportion had greater than before over time. Other reported data have given away that the prevalence rates in southern Africa are confounding: 18.90% of, adults (aged 15-49 years) are infected in some regions 20-50% of pregnant women were infected and to be expected transmit infection to one third of their offspring, (UNAIDS, 2017).

Epidemiologic studies have been demonstrated that HIV is transmitted by three primary routes; sexual, parental (blood-borne), and prenatal (Nancy *et al*., 2005). Factors that increase the risk of exposure to blood, such as genital ulcer diseases (Cameron *et al.,* 1989), trauma during sexual contact and menstruation of an HIV-infected woman during sexual contact are possible risk factors for transmission of HIV. Sexual transmission of HIV from an infected partner to a non-infected partner can occur through sexual contact. Globally, sexual transmission of HIV is the leading mode of transmission (Quinn, 1996 and 2005).

The first step of infection is binding of HIV target cells, followed by transportation to regional lymph-nodes, where it replicates and establishes a productive and, permanent infection .In the last few years it has been demonstrated that in the early phases of infection, HIV preferentially targets CCR5 CD4 memory T- lymphocytes, in the gastrointestinal tract. This results in a rapid massive and possible permanent destruction of CD4 cells, rupture of the intestinal mucosa and penetration of microbial translocation of products in the systemic circulation (Benchley *et al.,* 2004, and Potter, 2009).

HIV disrupts the proper functioning of the immune system. A weakened immune system allows the development of a number of different infections and cancers which causes illness and deaths. HIV also infects and causes direct damage to other types of cells; for example, damage to the lining of the intestine can contribute to wasting (sever weight loss) and damage

to the nerve cell can cause neurological problems (Pomerantz, 1987: Nelson, 1988: Elder and Sever, 1988).

The first documented reports of HIV, case in Ethiopia was recorded in 1986, (Hladik, 2005, and Sileshi Haile, 2013). The HIV epidemics have evolved in to a generalized epidemic with AIDS as the leading cause of morbidity and mortality among adults. Ethiopia has just over 1% of the world's population but contributes to 3% of the worlds HIV cases (Ayesha B.M. Kharsany & Quarraisha A. Karim, 2016). Ethiopia is one of the 10 African countries having the highest number of new HIV infections. Over 90% of the infections in Ethiopia occurred among 15-49 age ranges the most productive parts of the community. The prevalence of HIV in 2016 was estimated 1.2% for women and 0.6% for men to give a national average of 0.9%, (EDHS 2016). The prevalence of HIV in Tigray is 2.1% (in 2005), 1.8% (in 2011) and 1.2% (in 2016) according to the Ethiopian Demographic Health Survey (2011 and 2016). In general the prevalence of HIV in Tigray is greater than the national prevalence of HIV and also fellows the regional state of Afar which have the prevalence of 1.4% according to EDHS (2016). I am interested to study this research due to the above reasons. Therefore, the aim of this study is to know the current status of HIV, infected individual in the study area and exploring knowledge, attitude and practice among the study participants towards HIV.

1.2 Statement of the Problem

AIDS is a global epidemic which is caused by the virus called human immunodeficiency virus (HIV). It affects immune system of the body of human beings. The epidemic was first recognized in the year 1980.Since then about 32 million people were died and 37.9 million people are living with HIV in the world (WHO, 2018). At its beginning the rate of infection of the epidemic is increasing every year in many countries with uneven distribution pattern and become global problem. But know through many considerable efforts of fighting against HIV remarkable change in the reduction of new infections is seen even though it needs an additional effort (UNAIDS, 2017). Although HIV is epidemic, there is a remarkable regional variation in its distribution. Sub-Saharan Africa (SSA) is the region where the highest number of victims of HIV is found. Among all the people who are infected by HIV all over the world, about 70% are living in this region, (WHO, 2018). This epidemic has been remained the major cause of death in this region. Ethiopia is one of the Sub-Saharan Africa countries which are hardly affected 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. In Ethiopia there were an estimated of 690,000 people living with HIV in 2018, (UNAIDS, 2018). The general trend of the prevalence rate varies across each year and region in the country. Trend analysis carried out starting from 1982 to 2011

shows a continuous gradual rise of HIV/AIDS prevalence rate until the late 1990`s and then a steady decline in the years after 2000 in Ethiopia and fast decline after 2010 as reported in EDHS2016.

Adwa is a historical place which is found in the Central Zone of Tigray, the Northern part of Ethiopia, at 1800 - 1900 altitude above the sea level and 1006km far from Addis-Ababa and 203km far from Mekelle. Except in some potential towns including Mekelle, Alamata, Korem, Setit Humera and some rural woredas having concentrated economic activities such as Kafta Humera, Raya Azebo and Degua Tembien, there is no woreda specific HIV prevalence data existed in Tigray, Therefore, the HIV prevalence rate of the study area, Adwa town is not clearly known.

1.3 Objectives of the Study

1.3.1 General Objective

The main aim of this study is to know the current states of HIV infected individuals in the study area and exploring knowledge, attitude, and practice among the study participants towards HIV.

1.3.2Specific Objectives

1. Identify the current status of HIV, in the study area.
2. Examine the level of knowledge, attitude, and practice the mode of prevention on HIV in the community.
3. Analyze the trend and pattern of HIV cases for the past ten years (2009-2018) in the study area.

1.4 Significance of the Study

The findings and recommendations after the study had the following significances;

1.The findings of this study had been enabled respective community, stakeholders, policy makers' implementers, NGOs, health officials and regional government provided basic information on HIV for the implementation of prevention and treatment plan to reduced new HIV cases.

2. The local and regional government with their collaborative stakeholders will help them to designed strategic plan on education and HIV to create awareness in the community.

3. It would be important to conduct this study because there was no recorded research data on the magnitude of HIV distribution and impact on the community in the study area.

2. REVIEW LITERATURE

2.1The Prevalence of HIV/AIDS

The Human Immunodeficiency Virus-which causes the Acquired Immunodeficiency Syndrome - was first discovered in the early 1980s'. It has spread more rapidly than most diseases in recent history. In addition to the biological cause on human being, it has social cultural, economic and moral repercussions on individuals, families, communities and threatening foundations of entire societies. Over the years, the link between HIV and impoverishment has grown and even stronger as the disease is infecting and affecting the younger generation who are the productive labour force of every economy. HIV infections are spreading quickly within the youth populations and what happens to them today will determine what becomes of them and their communities in the future. An estimated 11.8 million young people aged 15–24 are living with HIV, and half of all new infections, over 5,000 daily, are occurring among them (Potter,2009 andUNAIDS,2017).

The World Health Organization (WHO) has identified HIV/AIDS as one of the world's first health emergency and an urgent threat to global public health. It reveals that HIV/AIDS is the 5th widely spread communicable disease and the sixth common cause of death globally. In recent years at international level, it has received as much attention as other pressing global questions like war, terrorism, environmental degradation among others. According to WHO, (2018) since the beginning about 75 million people have been affected and more than 32 million people have died of AIDS related causes. The situation is made even gloomier, with 29 million new infections estimated by 2020 if prevention and treatment are not accelerated.

The United Nations Millennium Development Goals (MDGs) report for 2006, states that several countries including Ethiopia reported success in reducing HIV infections.

However, the overall infection rate is on the rise. Sub-Saharan Africa (SSA) remains the highest affected region (Nancy *et al*., 2005 and WHO, 2018). The WHO (2018) has classified HIV/AIDS as the main cause of adult mortality in Africa. It affirms that about 3.9% of all male and female deaths respectively are caused by AIDS related diseases. In the same vein, UNAIDS (2017) fact sheet states that 69% of the global HIV/AIDS infections has in Africa, South of the Sahara with the prevalence rate of the highest among the age group 15-49 years. It is for which reason Africa heads of state declared AIDS as a state of emergency in the continent.

This does not give a hopeful picture for the African Continent because this age group constitutes youths and adults who are the most dynamic and industrious and should be leading the process of development and social change. The international community has come to recognize that HIV/AIDS is not only a health problem but also a developmental

disaster of alarming proportions which will affect development goals at the human, financial and material levels. Although one of the Millennium Development Goals (goal 6) particularly addresses HIV, an effective response will enhance the achievement of all other Millennium Development Goals (Bekeny, 2009). According to UNAIDS,(2017), no disease in history has encouraged a comparable mobilization of political, financial and human resources and no development challenge has led to such a strong leadership by communities and countries most heavily affected. By reducing life expectancy, increasing child mortality and, proliferating the number of orphans, HIV/AIDS impoverishes individuals, communities and nations by eroding the capacities of socio-economic systems through losses of human resources which is the most important resource for meaningful and sustainable development. The devastating effect of the HIV pandemic especially on the young generation is therefore a major hindrance to development.

UNAIDS, (2017) estimate that the number of persons living with HIV worldwide is 36.9 million. Deaths related to HIV, is reduced by 51%, from 1.9 million in 2004 to 940,000 in 2017. Rather than being complacent, this underscores the need for countries to increase their commitment to prevention efforts. This is necessary if this pandemic must start reversal in order to meet the 2030 target by the Sustainable Development Goals (SDGs) and to save humanity from an impending scourge.

According to the Federal HIV/AIDS Prevention and Control Office (2018), the Federal Democratic Republic of Ethiopia has committed to reducing new adult HIV infections by 50% by 2020 and to ending AIDS as a public health threat by2030 and this is reflected in the country's Health Sector Transformation Plan II 2015-2020,where one of the major indicators in reduction of HIV incidence rate from 0.03% to 0.01% , and reducing HIV prevalence rate from 3.3% in 2000 to 0.9% in 2017, AIDS related deaths from 83000 deaths in 2000 to 15600 deaths in 2017. However, the gains made so far to be challenged.

Since HIV/AIDS was acknowledged as human being problem, the health researchers have been conducting different research in order to control the epidemic by developing medicine 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 medicines which are available, currently only can reduce the infection rate, i.e. they are not able to cure people who are infected by this epidemic. In addition to this, the price of such medicines has been a major problem especially for developing countries (UNIDS, 2004: Sileshi Haile, 2013).

Various ways have been pointed out regarding how the epidemic has transmitted from one to another person. However, there are common modes of transmission of HIV; the main mode of transmission is also different in different regions of the globe. For example in developed

countries homosexual and intravenous drug injection are usually considered to be the way of transmission of HIV, on the other hand, in developing countries heterosexual contact is the main mode of transmission.

Almost all countries globally are influenced by the HIV epidemic. There is no region of the globe has been spared. Even if the epidemic is worldwide there is a remarkable 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 is widely spread and hardly affected by the consequences of epidemic than other regions of the globe. It is the region where the highest number of HIV is found. Among all the people who are infected by HIV all over the world, 70% (25.7 million) are living in this region, (WHO, 2018). According to the United Nation classification of 'generalized epidemic' about 90% of the countries in this region are severely affected by the epidemic. Although the region accounts only for 10% of the world population, it comprises almost 25.7 million of the victims of HIV in the world. In 2017 an estimated 1.8 million people worldwide become newly infected, while 940,000 died of AIDS.

According to the EDHS (2011), a trend analysis carried out from 1982-2011 shows a continuous gradual rise of HIV/AIDS prevalence until the late 1990s and then a steady decline in the years after 2000 in Ethiopia and fast decline after it as reported in EDHS2016. The national adult HIV prevalence rate was estimated at 0.2% in 1985 increasing to 3.2% in 1995 and reduced to 1.4% in 2005. In the year 2011 the prevalence rate of women and men individuals in the age group 15-49 was also 1.5%. Avery recent reports revealed that the current prevalence rate was reduced to 1.2%, 0.6% and 0.9% for women, men and the whole country (EDHS, 2016).

Because of the present socio-cultural variety of our country, the outline prevalence of HIV varies widely. Some regions are extremely affected than others. Recent reports indicate that there is a large difference in HIV prevalence across regions and place of residence of the country. According to 2016 Ethiopia Demographic and Health Survey, the prevalence rate of HIV/AIDS ranges from the highest prevalence rate 4.8% (Gambella region) to the lowest level of < 0.1% in Somali region. The prevalence rate of HIV in Tigray regional state for the same year is 1.2%. There is also significant difference among place of residence. For example the prevalence rates of women live in urban areas are seven times higher than women living in rural areas (2.9 percent versus 0.4 percent), (Central Statistical Agency 2018).

2.2Trends and Patterns of Prevalence of HIV in Ethiopia

According to Hladik (2005), the first HIV case was identified in 1984 in Ethiopia, and reported in 1986. Due to this reason governmental organizations have been established in the aim of fighting the epidemic of HIV. A National HIV team was the first organization which was reorganized in1985, and, in year 1987 in to the National AIDS Control Program Office, which was well organised at a department level in the Ministry of Health (EDHS, 2011). 'The first HIV supervision activities began in1989 and were focused on surveying the fuelling factors that increase the prevalence of HIV at a country level', (Sileshi Haile, 2013).

This council has developed a five years strategic plan in prevention and control of the epidemic in some chosen parts of the country and resulted in a significant change in fighting the epidemic at a national level. However, the trend of the epidemic has inconsistent patterns in various periods and place of residence. As a result a very recent reports discovered that the current prevalence rate was reduced to 1.2 percent, 0.6 percent and 0.9 percent for women men and the whole country respectively, (EDHS, 2016). Even though the existing HIV assessment in general indicates that the prevalence rate is stable, even though the progresses that have been resulted so far were not enough to maintain the required objective.

The HIV prevalence trend in Ethiopia indicates that, in year 1982 – 1995, there was a fast growth, but a steady decline after the year 2000. Based on this the prevalence rate of adults (age 15 – 49) in the year 1985, 1995, 2005, 2011 and 2016 was 0.2%, 3.2%, 1.4%, 1.5% and 0.9% respectively, (EDHS, 2016). In general according to the Ethiopian Demographic Health Survey (2016), the HIV prevalence in all region of the country varies due to demographic, socio-economic and cultural factors mainly sex, age, marital status and place of residence, early marriage respectively and others.

Table 0.1HIV Prevalence rate, by marital status, for the three cross section years, in 2005-2016, EDHS report.

Marital status	2005		2011		2016		Total		
	Women	Men	Women	Men	Women	Men	2005	2011	2016
Never married	0.7	0.3	0.5	0.2	0.3	0.3	0.5	0.3	0.3
Married	1.6	1.3	1.5	1.3	0.8	0.8	1.5	1.5	0.8
Divorced	8.1	8.7	5	5.9	2.9	2.9	8.4	5.2	2.9
Widowed	5.6	1.9	12	12	11.5	11.5	3.7	12.2	11.5

According to the EDHS 2005-2016 reports the prevalence of HIV also varies among individual who have different educational status. Education may influence the prevalence of the epidemic through building of awareness and easier and more rapid access to information,

on the other hand, changing of jobs especially to urban regions. This increases the chance of individuals, staying out of family for several times, and these lead them to new sexual partners and increase their exposure to infect with HIV. Therefore, various patterns have been reported on the prevalence of the epidemic and level of education depending of the place where individuals lived and the stage of the epidemic.

In general, the prevalence rate of HIV in Ethiopia increases with increasing educational attainment. The rate of infectivity is markedly higher among individuals who enrolled in higher educational institution and secondary schools as compared to those who have low educational attainment. (See the table below).

Table 0.2 The HIV prevalence rate, by educational status, for the three cross sectional years

Education	2005		2011		2016		Total		
	Women	Men	Women	Men	Women	Men	2005	2011	2016
Illiterate	1.0	0.8	1.3	0.8	0.8	0.1	0.9	1.1	0.6
Primary	2.5	0.5	2.2	0.9	1.7	0.5	1.3	1.5	1.1
Secondary & above	5.5	2	4.3	2.1	1.7	1.3	3.4	3.1	1.5

2.3HIV Prevalence in Ethiopia

2.3.1HIV Prevalence by Age, Sex and Region

According to the Ethiopian Demographic Health Survey (EDHS , 2016) , the prevalence of HIV among women generally increases with age, affecting 0.4 percent of women age 15-19 and 3.0 percent of age 40-44, before declining to 1.9 percent among those age 45-49. Among men, HIV prevalence increases from less than 0.1 percent, age 15-19 to 1.6 percent among men age 40-49, and then decreases to 0.6 percent among men age 55-59.

The HIV prevalence among women and men age 15-49 has decreased between 2011 and 2016 from 1.5 percent to 0.9 percent. The prevalence in 2005 was 1.4 percent. The HIV prevalence estimated for all the three EDHS surveys shows that HIV prevalence among women and men age 15-49 is slightly to have reduced between 2005 and 2016. The decline in HIV prevalence among men age 15-49 between 2005 and 2016 was not statistically significant; whereas, the decrease between 2011 and 2016 is statistically significant.

2.3.2Trends in HIV Prevalence by Age

Table 0.3Percentage of women, and men age, 15-49 who are, HIV positive in 2005, 2011 and 2016, (Source: EDHS,2005, 2011 and 2016).

Year	2005		2011		2016		Total		
	Women	Men	Women	Men	Women	Men	2005	2011	2016
% of HIV positive	1.9	0.9	1.9	1.0	1.2	0.6	1.4	1.5	0.9

Among women and men collectively, the prevalence of HIV is seven times higher in urban areas than in rural areas (2.9 % versus 0.4). HIV prevalence is 3.6% among women in urban areas compared with 0.6% among women in rural areas. The equivalent percentage for men is 2.0 % and 0.2% respectively. By region, among women and men collectively, HIV prevalence is higher in Gambella (4.8%), Addis Ababa (3.4%), Dire Dawa (2.5%), and Harare (2.4%), than other regions.

2.2.3Trends in HIV Prevalence by Regional states

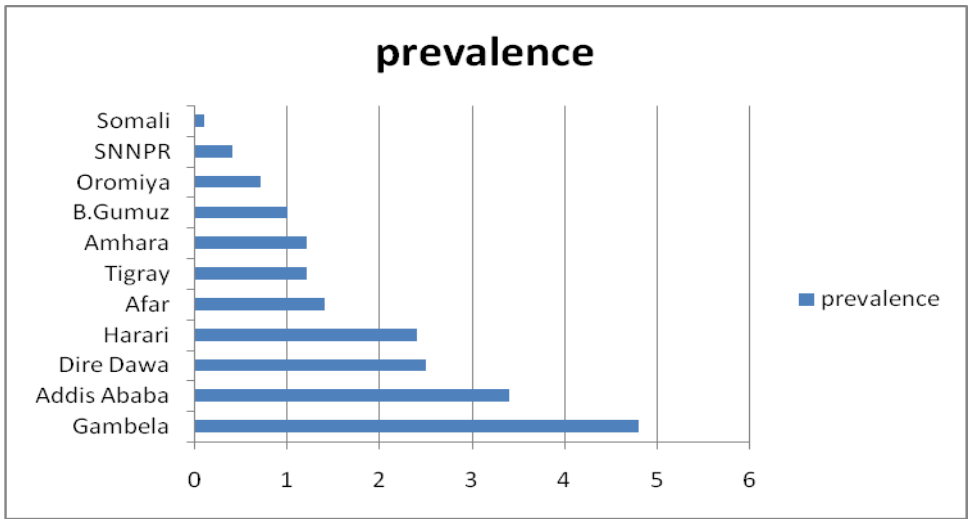

Figure 0.1 The prevalence of HIV by regional states, (Source: EDHS, 2016).

2.3.4HIV Prevalence by Sexual Risk Behaviour

According to the Ethiopia Demography and Health Survey the prevalence of HIV is lowest for those who had first sex after the age of 20, among women and men. Among women, the highest prevalence is for those who reported first sexual intercourse at age 18-19, (1.9%) of women, and for men age, 16-17(1.4 %).

2.4Trends and Patterns of Prevalence of HIV in Tigray

Since the 2001 the regional states of Tigray has been committed in the fight against HIV and has confirmed HIV as a healthy disaster and a priority programmed for the poverty reduction plan with the collaborative of the Federal Ministry of Health. A regional AIDS Control Committee was established in 2002 and finally became a well organized in 2005 as the Tigray Health Bureau of HIV Prevention and Control Office, (HAPCO) to coordinate all activities geared towards prevention by creating awareness, treatment and care of People Living with HIV.

This committee also monitors the spread of the pandemic, controls the finances that are allocated to all stakeholders in the fight against HIV and distribution of ARV drugs that are found from FMOH and other NGOs. The regional strategic AIDS plan addresses the full range of HIV strategies including care, prevention, support and treatment. The regional government is committed to promoting universal access to treatment, prevention and voluntary testing and counselling (VTC), centers have been integrated in to all woredas of the regional states and district hospitals in the region (Ataklti Abrha, *et al*., 2018).

Despite all these interventions, it has been observed that prevalence among the age 15-24 is staggering and they still remain the highest risk group in Tigray. HIV prevalence in Tigray was 1.8% in 2011. ANC data shows that there has been continuous decline in the prevalence of HIV in both urban and rural areas (urban; 14.0% in 2001to 5.0% in 2009; rural; 5.2% in 2001 to 1.3% in 2000. (Gebreab Barnabas, *et al*., 2014). Beside to this a survey taken by BMC Public Health (2014), shows that there was a variability in prevalence by zone and by woredas. Prevention and coping strategies can only be ensured through awareness for it is true that with the current state of scientific knowledge, i.e. the only protection available to society is education.

2.4.1HIV Prevalence by age, sex and residence in Tigray

There are about 64,746 People living with HIV in Tigray, of which 14,800 are children (0-14 age), (THB, 2019). Adult HIV prevalence in Tigray was 1.2%, (EDHS, 2016). This indicated that there is a slight reduction in HIV prevalence in Tigray over the past 12 years, but this was not significant, and in both male and female, (females; 1.5% in 2016 and 2.2% in 2011 and males; 0.7 in 2016 and 1.3% in2011). The HIV prevalence among women and men age 15-49 has decreased between 2011 and 2016 from 1.8% to1.2% .The prevalence in 2005 was 2.1%. HIV prevalence in young girls is twice that of young boys, because girls start sex at early age than boys, (1.0% versus 0.4% respectively).The 2011 and2016 EDHS estimated the prevalence of HIV among women and men age 15-24 in Tigray is 0.6% and 0.3% respectively.

2.4.2Trends in HIV prevalence in Tigray

Table 0.4Percentage of women and men age 15- 49 who are HIV positive in Tigray

(Source; EDHS 2005, 2011 and 2016)

Sex	2005	2011	2016
Women	2.6	2.2	1.5
Men	1.6	1.3	0.7
Total	2.1	1.8	1.2

2.4.3Rural-Urban Variability in HIV Prevalence

According to Antenatal care surveillance data there has been a continuous turn down in the prevalence of HIV in both rural and urban areas in Tigray,(urban;14.9% in2001 to 5.0% in 2009; rural; 5.2% in 2001 to1.3% in 2009). Based on this HIV prevalence in Tigray was 5.0% in urban and 1.3% in rural areas and total 2.2%, while according to Gebreab Barnabas *et al.*, 2014, it was (4.2% versus 1.5%), among urban and rural females respectively and (1.5% Versus 1.2%), among urban and rural males respectively. Rural HIV prevalence is consistently low. However, potential epidemic woredas were seen in rapidly urbanizing economic zones and commercial farms, (Alamata town; 3.5% -7.3%, Raya Azebo rural; 5.1% in 2010, (Gebreab Barnabas *et al.*, 2014). According to the Prevention of Mother to Child Transmission routine testing data for 2010/2011 the prevalence of HIV in Tigray was found to be higher in Western zone (2.2%), due to the presence of commercial farming with high number of risk behaviours. Following these, the prevalence of HIV is high in Southern and South Eastern Zones of Tigray, (1.6% and 1.5% respectively). Here there are towns with growing economic sites that host a major transport road to the capital Mekelle, that are conducive to risk sexual behaviours such as commercial sex and multiple partnerships. In contrast, lower prevalence of HIV was found in central zone (0.4%), (Gebreab Barnabas *et al*., 2014).

The HIV Epidemic in Tigray by Administrative Zone

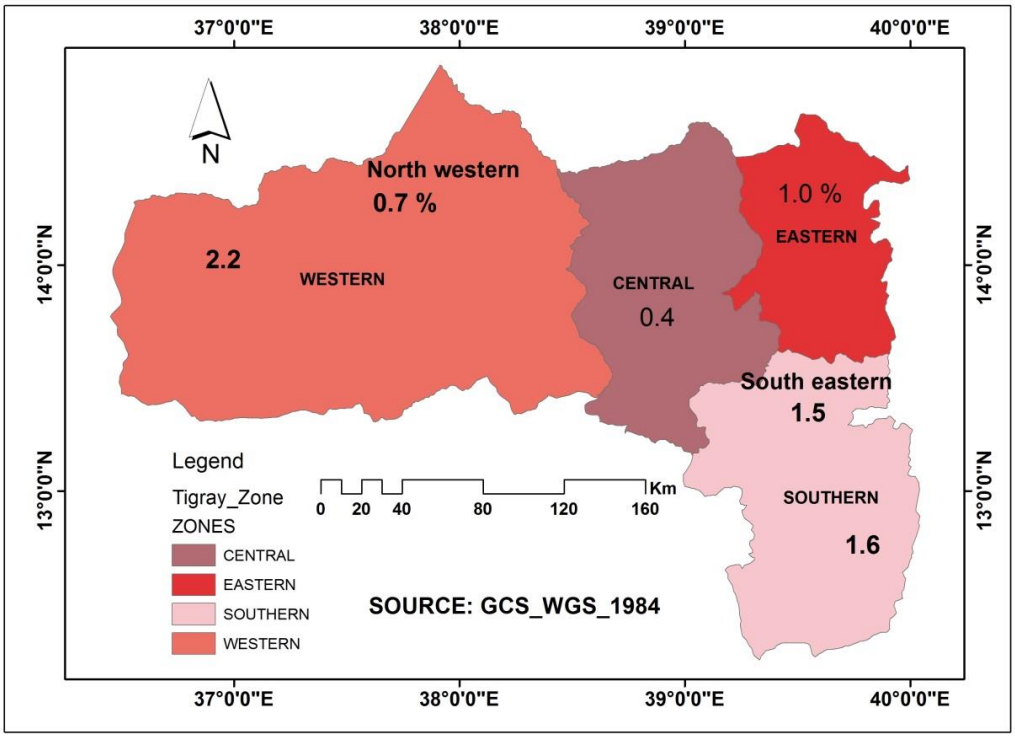

Figure 0.2 The HIV epidemic in Tigray by administrative zone, (Source: Tigray Health Bureau).

2.5.4HIV Variability by Administrative Woredas

A higher prevalence can be seen in urban woredas particularly in the regional capital Mekelle (4.2%), Alamata town (7.3%), Korem (4.6%), and Setit Humera town (3.7%) in 2010/11. Higher prevalence is also found in that year along the main road. Kafta Humera, with a large population number of seasonal workers, and Raya Azebo, an economic centres of large scale commercial farms are with higher prevalence of HIV at the same year (4.3% and 5.1%) respectively Degua Temben have also 3.8% HIV prevalence rate, Gebreab Barnabas *et al.* , 2014).

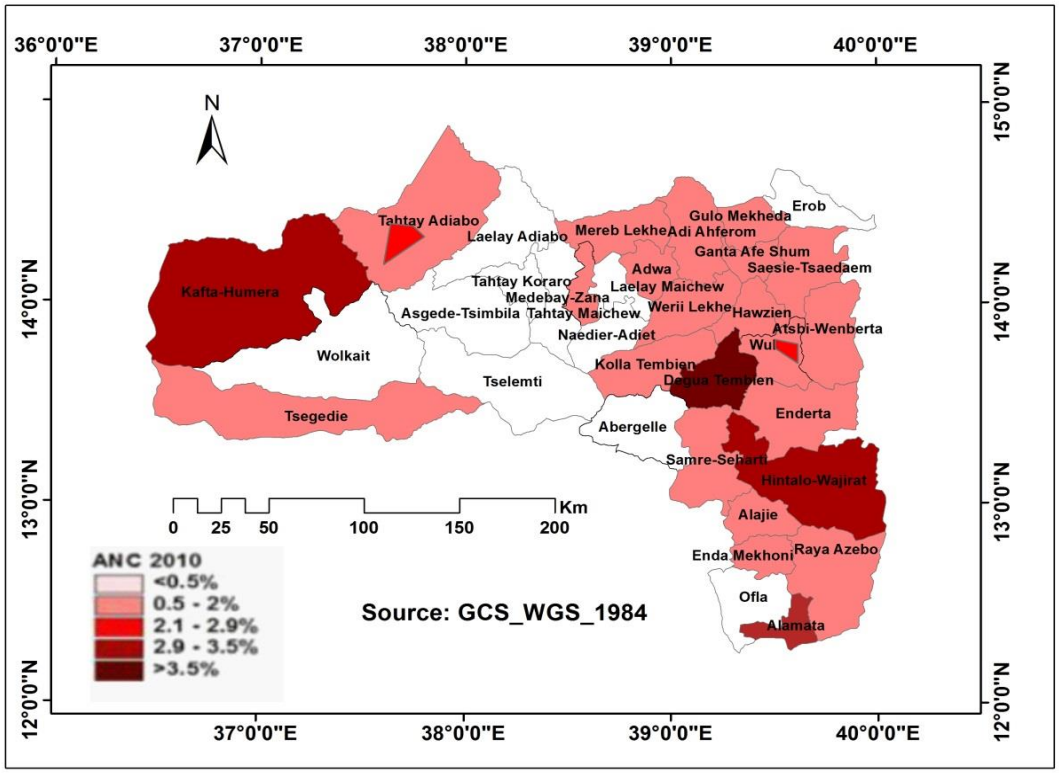

Figure 0.3 The HIV epidemic by administrative woredas in Tigray,

Source: PMTCT HIV testing data, (2010/2011)

2.5 HIV Risk Factors

Some of the risk factors that cause variation in HIV prevalence in the regional state are the presence of mobile seasonal workers, highly urbanized centres, a high concentration of economic activity and connecting roads from the capital and large commercial farmers, sex workers, seasonal farm workers and HIV free partners in discordant couples were identified as being at higher risk factors.

2.6 The HIV Response in Tigray

Tigray HIV prevention and control office developed strategic plan that covers basic HIV services in prevention, treatment, care and support in line with the national strategic plan for the multispectral HIV response. In Ethiopia, the prevention of mother-to childe transmission (PMTCT) programme was initiated in 2001. Since an HIV diagnosis during pregnancy should lead to a woman being put on treatment , PMTCT programmes improve child health both biologically-through reducing mother-to- child transmission of HIV to below 5% - and socially though improving maternal health. All pregnant and breast feeding women get antiretroviral therapy (ART), as soon as their diagnosis, in order to reduce HIV-related for the women herself, and also a reduction in the risk of passing HIV to her baby. There were

142 PMTCT and 77 ART services providing health facilities by 2016, (Atakelti Abrha *et al*., 2019).

3. MATERIALS AND METHODS

3.1Description of the Study Area

Adwa is a historical place which is found in the Central Zone of Tigray, the Northern part of Ethiopia, with the altitude of 1800 -1900 meters above sea level, and 1006km far from Addis-Ababa and 203km far from Mekelle, with the annual rainfall of less than 750mm

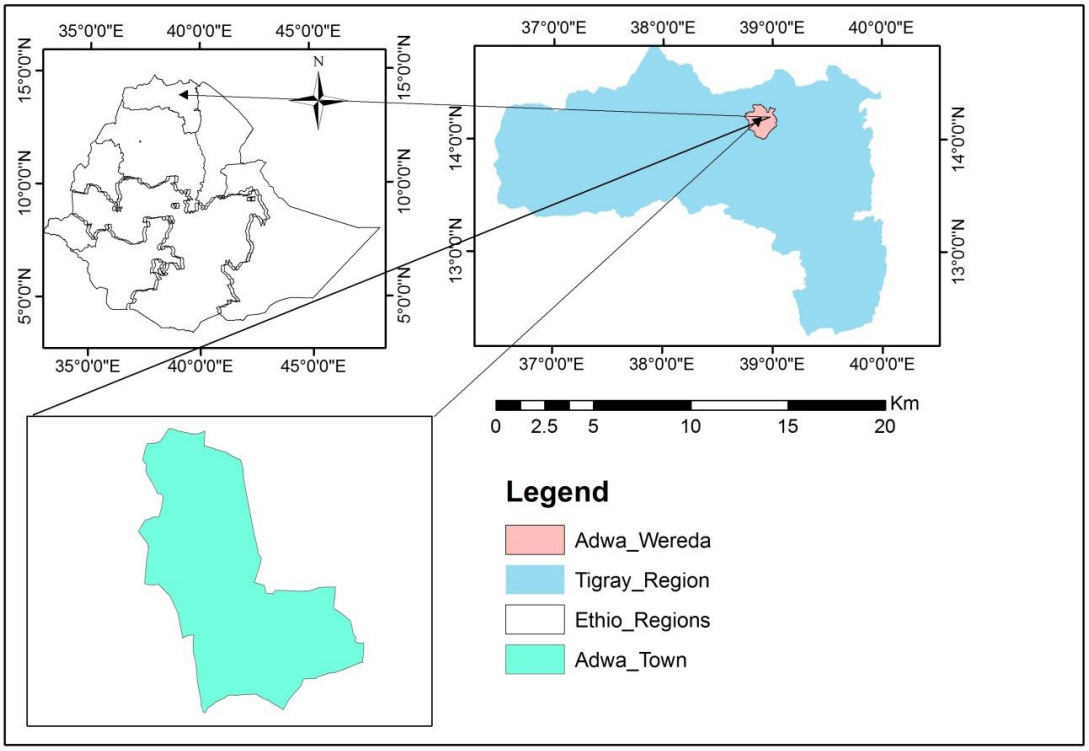

Figure0.1 Topographic map of the study area (Adwa Town)

The data was collected in May- July 2019 at Adwa town. The study was carried out at Adwa town. The town comprises nine administrative Kebelles, where an estimated of 46,645 people live (2007 national census). The people of the town live under broadly similar socio-economic and cultural conditions. The town also comprises three health centers and one general hospital. The hospital serves as a referral hospital to the nearby woredas.

3.2Study Design

A cross-sectional study design was adopted to determine peoples KAP towards HIV using well structured questionnaire that included five sections. Section one comprised of five socio-demographic issues where respondents were asked to report, section two comprised of statements of sources of knowledge about HIV, Section three consisted of sixteen questions, twelve of them were on mode of transmission of HIV, and four of them were on the actual knowledge of HIV facts. Section four was also aspects of prevention methods of HIV. The

last section also consisted of fourteen statements, seven of them were on HIV prevention and seven of them were on the issues related to stigma and discrimination. The questionnaires were prepared in English and translated in to Tigrinya.

The retrospective data was collected from Adwa town in Tigray regional state. Letters of application for authorization and copies of the research plan were sent to principals of Adwa hospital from health office of the town, seeking their participation and explaining the aim of the research. This was necessary to address and permission ensures that the participants co-operate in the study and provided data to the researcher. It also acknowledges that they understand the aim of the study.

3.3Study population, Sample size and Data collection

The nine administrative units (kebelles) of Adwa town were taken as a source of population for this study. According to the 2007 national census, Adwa had a total population of 46,645 people which is **(48.7%) of males** and **(51.3 %) females**. The sample size for this population was taken by random sampling method using the Daniel, (1999) formula.

$$\mathbf{n= Z^2 (P) (1- p)/d^2 +10\%}$$ (known as the contingency).

Where n is the sample size, z is the significance level at confidence interval of 95% is 1.96, p is proportion 50% = 0.5, d is confidence limit of frequencies which is 0.05. Therefore the size of the population was; $n= (1.96)^2(0.5)\ (1- 0.5)/(0.05)^2 + 10\% = 384.16 +384(10\%) =423$. Therefore the total sample size of the study was 423. The sample also consisted of age group 15-49 years. Of the 423 respondents 15 were disqualified since they were not completed their questionnaire properly and 408 participants in which **260 (63.7%) of males** and **148 (36.36%) females** were properly completed their questionnaire. To achieve the objective of the study, the researcher was collected from the questionnaire which was reported by the respondents. This study was utilized a random sampling technique for the questionnaire by **giving the same quota (47 samples) for each the nine administrative** Kebelles. And the **proportional samples were also taken assuming the prevalence is 50% or 0.5** since there was no research done before about the study area. The sampling process ensured representatives, which refers to the selection of individuals from a sample of a population such that the individuals selected are typically of the population under study enabling us to draw conclusion from the sample about the population as a whole. The researcher attempted to select a manageable sample, one that is representative of the population.

3.4 Data Analysis

The collected data obtained had been analysed by descriptive statistics such as mean, frequency, percentage, graphs, tables, p-values, and chi-square using SPSS 24 software. In the analysis 1.96 had been the confidence interval and finally the research hypothesis had

been compared with the significant level of the analysis. The research hypothesis is significant only at $p \leq 0.05$.

3.5 Ethical Consideration

This was necessary to address ethical concerns and permission ensures that the participants co-operate in the study and provided data. It also acknowledges that they understand the aim of the study and the researcher would treat the participants ethically. Ethical approval for the study was granted by Addis Ababa University Collage of Natural and Computational Sciences Institutional review Board.

4. RESULTS AND DISCUSSION

4.1RESULTS

4.1.1 Socio-demographics

From 408 respondents 64.0% of males and 36.0% of females were participated in the study. All of them were administered to the structured questionnaire which focused on the knowledge, attitude and behaviour related variables to the source of knowledge about HIV facts, modes of prevention, modes of transmission and stigma and discrimination of the HIV patients.

The result shown in Table 4.1 below was the socio-demographic characteristics of the respondents. Among 408 respondents 64.0% were males and the remaining 36.0% were females. Similarly age of respondents is also mostly between 18 and 49. This comprises 84% of the respondents. The remaining respondents were 9% with the age range of 15 to 17 and 7% between 50 and 60. Majority (51.0%) of the respondents, were married and about 39% of them had educational status college and above. About 48.0% and 38.0% of the respondents were private and government employed respectively**.**

Table 4.1Socio demographic characteristics of the respondents (n=408)

variable	category	Frequency	percent
Sex	Male	260.00	64.0%
	Female	148.00	36.0%
	Total	408.00	100.0%
Age	15- 24	95.00	23.3%
	25- 34	183.00	44.9%
	35- 44	117.00	28.7%
	≥ 45	13.00	3.2%
	Total	408.00	100.0%
Marital status	Single	108.00	26.0%
	Married	201.00	51.0%
	Other	99.00	22.8%
	Total	408.00	100.0%
Educational status	Literacy	102.00	25.0%
	5- 8	63.00	15.0%
	9- 12	83.00	20.0%
	College & above	160.00	39.0%
	Total	408.00	100.0%
Occupation Status	Employed	157.00	38.0%
	Unemployed	55.00	13.0%
	Private	196.00	48.0%
	Total	408.00	100.0%

Other = widow or divorced, someone who died his/ her wife / husband

4.1.2Knowledge on mode of transmission, prevention and control of HIV/AIDS

4.1.2.1Sources of information about HIV

Table 4.2a showed the results of the respondents' perception on different sources of information to HIV. As can be seen from the table in the first question, the respondents were asked if television is important and, most of the respondents (89.7%) said that it is important since important and very important are positive response except they differ in degree.

In the second question, the respondents are asked about importance of parents as source of information about HIV facts and most of the respondents (85.9%) agreed with the idea. Similarly, 85.8% of the participants responded that magazines are important in sources of factual information about HIV. In addition the respondents were asked if 'Friends and Relatives' are important source of information about HIV and majority (more than 90%) of the respondents confirmed this idea. Teachers (schools) are also important source of information about HIV/AIDS facts and knowledge and 94.7% of the respondents agreed with this idea. Social- media are also good source of HIV facts depending on the participant responses, 93.1% of the respondents agreed with this idea. On the other way majority (93.3%, 91.4% and 92.8%) of the participants were responded that health clubs, doctors/nurses and churches respectively were good sources of knowledge about HIV facts.

Table 4.2aSource of information about HIV facts (n=408)

	How important as a source of knowledge?	Not at all	A little	Important	V. important
1	Television	12(2.9%)	15(3.7%)	227(55.6%)	154(37.7%)
2	Parents	13(3.2%)	20(4.9%)	236(58.8%)	139(34%)
3	Magazines	28(6.7%)	31(7.4%)	246(60.3%)	103(25.2%)
4	Friends	18(4.3%)	23(5.5%)	252(61.7%)	115(28.2%)
5	Relatives	12(2.9%)	22(5.3%)	248(60.78%)	126(30.9%)
6	Teachers	12(2.9%)	10(2.4%)	223(54.7%)	163(39.9%)
7	Internet /social media	18(4.3%)	11(2.6%)	226(55.4%)	153(37.5%)
8	Health Clubs	17(4.1%)	11(2.6%)	188(46.1%)	192(47.1%)
9	Doctors/Nurses	15(3.6%)	14(3.4%)	264(64.7%)	115(28.2%)
10	Church	16(3.8%)	14(3.3%)	195(47.8%)	183(44.8%)

4.1.2.2Knowledge on mode of transmission of HIV/AIDS

In the first case of Table 4.2b respondents were asked if they agreed that, AIDS is caused by HIV-The Human Immunodeficiency Virus and 96.6% of the respondents agreed about the facts that AIDS is caused by HIV virus. In the second question the respondents were asked if, hugging an infected person transmits HIV virus and 95.2% of the respondents disagreed that hugging an infected person cannot transmits HIV virus. In the third question 79.2% of respondents were responded 'disagree' that means HIV didn't spread through coughing and sneezing.

Respondents were also asked if HIV can be spread by sharing needles, or syringes and 95.5% of the respondents agreed with this idea. In the next three variables, in which 'HIV is spread; by getting infected blood, through unprotected sex and from pregnant woman to unborn baby during pregnancy, birth and breast milk the respondents were replied agree and strongly agree total 93.6%, 90.5% and 99.0% respectively. About 79% of the respondents also responded use of condom decreases the risk of HIV transmission. At the same time 96.7% of the respondents responded that simple casual contact such as kissing cannot spread HIV/AIDS (agree). In addition to this 95.7% of the respondents were agreed for the question 'Is someone can have HIV in his blood without symptom.

Similarly, the respondents were asked if HIV is transmitted by; sharing water glasses (51.7% of the respondent disagreed while 46.2% agreed with this idea), contracted toilet seats 89% of the respondents disagree that toilet seats cannot transmit HIV and 58.5% respondents disagree that mosquito bites cannot transmits HIV while 40.9% of respondents agreed that mosquito bites can transmit HIV/AIDS. More than 95.5% of the respondents agreed that AIDS is the most advanced stage of HIV infection. In other way more than 78.2% of the respondents responded disagree that AIDS is not curable disease. Finally 86.1% of the respondents responded agreed that 'there is no cured for HIV AIDS while 12.3% of the respondents disagree this idea.

Table 4.2b Respondents' knowledge on mode of transmission and practice of HIV/AIDS (n=408)

No	Items	Disagree	Agree	Strongly Agree	Don't Know
1	AIDS is caused by HIV (Human Immunodeficiency Virus)	12(2.9%)	217(53%)	177(43.4%)	2(0.5)
2	HIV is transmitted through hugging an infected person.	388(95%)	16(3.8%)	2(0.5%)	2(0.5%)
3	HIV can be spread through coughing and Sneezing	323(79%)	50(12.3%)	32(7.8%)	3(0.7%)
4	HIV can be spread by sharing needles & syringes with someone who has the virus	16(3.8%)	204(50%)	185(45.3)	3(0.7%)
5	HIV is commonly spread by getting HIV-infected blood	12(2.9%)	198(48%)	183(44.8%)	15(3.6%)
6	HIV is spread through sex	38(9.1%)	366(89%)	2(0.5)	2(0.5%)
7	HIV can also be passed from infected pregnant woman to her unborn baby during pregnancy birth and breast milk	2(0.5%)	19(4.5%)	385(94.4%)	2(0.5%)
8	Condom will decrease the risk of HIV transmission	65(15.9%)	214(52%)	102(25%)	27(6.6%)
9	Someone can have HIV Without Symptom	16(3.8%)	236(57%)	154(37.7%)	2(0.5%)
10	HIV is transmitted by simple casual contact such as kissing	12(2.9%)	186(45%)	208(51%)	2(0.5%)
11	HIV is transmitted by sharing water glass	211(51%)	107(26%)	82(20%)	8(1.9%)
12	HIV can be contracted on toilet seats	362(91%)	42(10%)	2(0.5%)	2(0.5%)
13	Mosquitoes can transmit HIV	239(58%)	160(39%)	7(1.7%)	2(0.5%)
14	AIDS is the most advanced stage of HIV infection	17(4.1%)	208(49%)	181(44.4%)	2(0.5%)
15	AIDS can be cured if treated Early	319(78%)	67(16.4%)	12(2.7%)	10(2.4%)
16	There is no cure for HIV/AIDS	50(12.3%	303(74.3%	48(11.8%)	7(1.7%)

4.1.2.3Knowledge on mode prevention and control of HIV/AIDS

The respondents were asked if abstaining from sex is the best way to prevent from HIV and majority (73.0%) of the respondents agreed with the idea (Table 4.2c). In the second question the respondents were asked if using condoms can avoid HIV and most of the respondents (96.1%) agree with the idea since both agree and strongly agree are the same except they differ in degree. The respondents also asked if limiting sex to one partner can reduce HIV and 96.2% of the respondents were agreed with this idea. Majority of the respondents (93.5%) agreed that avoiding sex with prostitutes (Commercial sex workers) and avoiding sex with person with many partners reduce HIV transmission. Based on respondents responses avoiding sex with persons of same sex can also reduce HIV transmission. Specifically 37.8% of the respondents and 55.5% of the respondents (total 93.3%) agreed with the idea that avoiding sex with persons of same sex can reduce transmission of HIV.

The respondents were asked if avoiding blood transfusions everywhere and avoiding injection can avoid aids transmission and majority of the respondents (95.7% and 95.0%) respectively replied agreed with the idea. Similarly, the respondents were asked if avoiding kissing can reduce HIV/AIDS transmission, and 66.5% of the respondents disagree with the idea, while 33% of respondents' agreed with the idea that 'Avoiding kissing avoids AIDS'.

Respondents were also asked if avoiding mosquito bites can avoid HIV, and 71.1% of the respondents disagreed that avoiding mosquito bites can avoid HIV. Finally the respondents were asked if seeking protection from traditional healers can avoid HIV/ AIDS and most of the respondents (80.3%) agreed with this idea.

Table 4.2c Respondents' knowledge, on prevention and control of HIV (n=408)

No2	Items HIV could be avoided by.....	Disagree	Agree	Strongly agree	Don't know
1	Abstaining from sex	108(26.5%)	104(25.5%)	194(47.5%)	2(.5%)
2	Using condoms	12(2.9%)	228(55.9%)	165(40.4%)	3(0.98%)
3	Limiting sex to one partner	12(2.9%)	190(46.6%)	202(49.5%)	4(1%)
4	Avoiding sex with Prostitutes (Commercial sex workers)	25(6%)	156(38.2%)	225(55%)	2(0.5%)
5	Avoiding sex with person with many partners	16(3.9%)	200(49%)	190(46.6%)	2(0.5%)
6	Avoiding sex with persons of same sex	12(2.9%)	158(37.8%)	222(54.4%)	16(3.8%)
7	Avoiding blood transfusions (everywhere)	12(2.9%)	179(43.9%)	211(50.5%)	6(1.4%)
8	Avoiding injections	12(2.9%)	212(51.9%)	175(42.9%)	9(2.2%)
9	Avoiding kissing	268(65.7%)	132(32.3%)	7(1.7%)	1(0.24%)
10	Avoiding mosquito bites	297(72.8%)	98(24%)	2(0.5%)	11(2.6%)
11	Seeking protection from traditional healers	70(17.2%)	233(57.1%)	103(24.6%)	2(0.5%)

4.1.3Respondents' attitude and practice towards HIV

Table 4.3 showed that, 74.6% of the respondents ever had sexual intercourse. In the second question, the respondents asked if they did use condom the very first time they had sexual intercourse, 22% of the respondents yes and 78% of the respondents said no, while 87.6% of the respondents don't perform sexual intercourse without condom. And 90.9% of the respondents don't advise People with HIV should stay indoors or in a Hospital. Similarly, if a family member is HIV positive it should be kept a secret and most (91.6%) of the respondents responded no with the idea.

In addition, people with HIV should be kept out of school and most (89.2%) of the respondents no with the idea. Moreover the respondents were asked if they would end their friendship if my friend had AIDS and most (95.2%) of the respondents no with the idea. At the same time respondents indicated (90.0%) of them were willing to do volunteer work with AIDS patients. The respondents also indicated they would buy vegetable from an HIV positive Shop keeper and most (95.0%) of the respondents responded yes with the idea. In the question, if a family member contracts HIV they should move out of home and most (92.6%) of the respondents replied no. In the concept, the HIV is a curse from God and most (85.6%) of the respondents replied no. Slightly more than 54.5% of respondents have been tested for HIV. On the other hand 78% of the respondents think that they are at risk of HIV. Finally, respondents were asked if they ever heard mother to child HIV transmission can be prevented, and most (87.3%) of the respondents agreed with it.

Table 4.3 Respondents attitude and practice towards HIV patients (n=408).

NO	ITEMS	YES	NO
1	Have you ever had sexual intercourse? (practice)	312(74.6%)	96(23.5)
2	Did you use condom during the first sexual intercourse? (practice) (n =312)	92(28.8%)	220(70.5%)
3	Do you ever say NO to sex without condom? (practice)	366(89.7%)	42(10.3%)
4	People with HIV should stay indoors or in a hospital.	28(6.8%)	380(90.9%)
5	If a family member is HIV positive it should be kept secret.	25(6.12%)	383(91.6%)
6	People with HIV should be kept out of school.	35(8.6%)	373(89.2%)
7	I would end my friendship if my friend had AIDS.	10(2.5%)	398(97.5%)
8	I am willing to do volunteer work with AIDS patients.	366(89.7%)	42(10%)
9	I would buy vegetable from an HIV positive shop Keeper.	387(94.8%)	21(5%)
10	If a family member contracts HIV they should move out of home.	31(7.4%)	377(92.4%)
11	HIV is a curse from God.	50(14.4%)	358(85.6%)
12	Have you been tested for HIV? (practice)	228(54.5%)	180(44.1%)
13	Would you think you have risk of acquiring HIV?	316(77.5%)	92(22.5%)
14	Do you ever heard mother to child transmission can be prevented? (practice)	355(87%)	53(12.7%)

4.1.4 Chi-square associations, of socio-demographic characteristics, with sources of information, mode of transmission, prevention, control, attitude and practices of HIV.

The out puts of association between the socio demographic characteristics and sources of knowledge of HIV facts are presented below, (Table4.4).

The study participant occupation group, age group, marital status group and educational status group had statistically significant association with the sources of knowledge of HIV facts, but the sex groups had insignificant association with the sources of knowledge of HIV facts, as shown in Table4.4.This also indicated the employed group (95.0%) and unemployed group (94.6%), 'sex groups' male (95.4%) and female (94.6%), age groups 15- 24 (63.2%) and ≥ 45 (61.5) had scored higher knowledge about the sources of knowledge of HIV facts because of their access to different mass media. Age groups 25 -34 (93.98%), 35 - 44 (93.9) and from the marital status groups single (100%), married (94.7%), others (92.2%), had good knowledge about the sources of knowledge of HIV facts. Educational group participants had also literacy (100%), 5 - 8 (100%), 9 -12 (100%), and collage and above (89.4%), had scored good knowledge about the sources of knowledge of HIV facts.

Table 4.4 Chi-square association with the socio demographic characteristics, on sources of knowledge of HIV at Adwa town in July 2019, (n=408).

Socio-demographic characteristics			Poor	Good	High	Total	x^2	p-value
Occupation	Employed	Count	2	16	335	353	11.429[a]	.003
		%within Occupation	0.6%	4.5%	95.0%	100.0%		
	Un-employed	Count	2	0	53	55		
		%within Occupation	3.7%	0.0%	94.6%	100.0%		
Gender	Male	Count	2	10	248	260	1.273[a]	.529
		% within Gender	0.8%	3.9%	95.4%	100.0%		
	Female	Count	3	5	140	148		
		% within Gender	2.0%	3.4%	94.6%	100.0%		
Age	15-24	Count	0	35	60	95	32.013[a]	.001
		% within age	0.0%	36.8%	63.2%	100.0%		
	25- 34	Count	1	172	10	183		
		% within age	0.55%	93.98%	5.5%	100.0%		
	35- 44	Count	3	107	3	117		
		% within age	2.6%	93.9%	2.6%	100.0%		
	≥ 45	Count	0	5	8	13		
		% within age	0.0%	38.5%	61.5%	100%		
Marital Status	Single	Count	0	108	0	108	11.696[a]	.020
		% within Marital	0.0%	100.0%	0.0%	100.0%		
	Married	Count	1	190	10	201		
		% within Marital	0.5%	94.7%	4.8%	100.0%		
	Others	Count	4	91	4	99		
		% within Marital	4.0%	92.2%	4.0%	100.0%		
Education Status	Literacy	Count	0	102	0	102	27.215[a]	.001
		% within Education	0.0%	100.0%	0.0%	100.0%		
	5-8	Count	0	63	0	63		
		% within Education	0.0%	100.0%	0.0%	100.0%		
	9-12	Count	0	83	0	83		
		% within Education	0.0%	100.0%	0.0%	100.0%		
	collage & above	Count	4	143	13	160		
		% within Education	2.5%	89.4%	8.1%	100.0%		

Out puts of association between the socio demographic characteristics and knowledge on modes of transmission of HIV/AIDS was presented below, (Table 4.5).

The age groups of the participants had statistically significant association with the knowledge of HIV modes of transmission, ($x^2 = 29.092^a$, $p = 0.000$), while the other four socio demographic characteristics (occupation, educational status, gender and marital status) had insignificant association with the knowledge of HIV modes of transmission.

Participants occupation groups employed (97.2%), unemployed (96.4%) and from gender groups male (97.7%), female (95.9%), from marital status groups single (95.3), married (97.1%), others (93.5%), from educational status literacy (95.0%), 5 - 8 (100%), 9 - 12 (100%), and collage and above (95.0%) had good knowledge about HIV modes of transmission. Based on age groups 15 - 24 (50.5%), 25 - 34 (50.3%), 35 - 44 (61.5%), and ≥ 45 (53.8%) had scored higher knowledge about HIV modes of transmission.

Table 4.5 Chi-square association, with the socio demographic characteristics, and modes of transmission, of HIV/AIDS at Adwa town in July 2019, (n=408).

Socio-demographic characteristics			Poor	Good	High	Total	x^2	P-value
Occup-ation	Emp-loyed	Count	8	343	2	353	5.720a	.057
		% within Occupation	2.3%	97.2%	0.6%	100.0%		
	Unem-ployed	Count	0	53	2	55		
		% within Occupation	0.0%	96.4%	3.6%	100.0%		
Gender	Male	Count	4	254	2	259	.994[a]	.608
		% within Gender	1.5%	97.7%	0.8%	100.0%		
	Female	Count	4	142	2	148		
		% within Gender	2.7%	95.9%	1.4%	100.0%		
Age	15-24	Count	8	39	48	95	29.092[a]	.000
		% within age	8.4%	41.1%	50.5%	100.0%		
	25- 34	Count	13	78	92	183		
		% within age	3.8%	42.6%	50.3%	100.0%		
	35-44	Count	0	45	72	117		
		% within age	00.0%	38.5%	61.5 %	100.0%		
	≥45	Count	4	2	7	13		
		% within age	30.8%	15.4%	53.8	100.0%		
Marital Status	Single	Count	4	103	1	107	5.893[a]	.207
		% within Marital	3.7%	95.3%	0.9%	100.0%		
	Marrie d	Count	0	201	0	201		
		% within Marital	0.0%	97.1%	0.0%	100.0%		
	Others	Count	0	92	7	99		
		% within Marital	0.0%	93.0%	7.0%	100.0%		
Educatio n Status	Literac y	Count	5	97	0	102	11.493[a]	.074
		% within Education	4.9%	95.01%	0.0%	100.0%		
	5-8	Count	0	63	0	63		
		% within Education	0.0%	100.0%	0.0%	100.0%		
	9-12	Count	0	83	0	83		
		% within Education	0.0%	100.0%	0.0%	100.0%		
	collage & above	Count	4	152	4	160		
		% within Education	2.5%	95.0%	2.5%	100.0%		

Out puts of association between the socio demographic characteristics and knowledge on modes of prevention and control of HIV/AIDS are presented below, (Table 4.6).

From the socio demographic characteristics (in Table 4.6) only educational status groups of the participants had statistically significant association with the knowledge of modes of HIV prevention and control, ($x^2 = 21.933^a$, $p = 0.001$).But the other four socio demographics (age, gender, marital status and occupation), had statistically insignificant association with the knowledge of modes of HIV prevention and control.

From participant occupation groups employed (96.6%), unemployed (94.6%) and from gender groups male (95.4%), female (97.3%), from marital status groups single (99.1), married (94.5%), others (91.9%), and age group ≥ 45 had scored good, while age groups 15 - 24 (42.1%), 25 - 34 (55.2%), (35 - 44) scored higher knowledge of modes of HIV prevention and control. Educational status group of the participants also scored literacy (99.0%), 5 - 8 (100.0%), 9 - 12 (100.0%), and collage & above (91.3%) good knowledge on modes of HIV prevention and control.

Table 4.6 Chi-square association with the socio demographic characteristics, mode of prevention and control of HIV/AIDS at Adwa town in July 2019, (n=408).

Socio-demographic characteristics			Poor	Good	High	Total	x^2	p-value
Occupation	Employed	Count	2	341	10	353	1.297 [a]	.523
		% within Occupation	0.6%	96.6%	2.8%	100.0%		
	Unemployed	Count	0	52	3	55		
		% within Occupation	0.0%	94.6%	5.4%	100.0%		
Gender	Male	Count	1	248	11	260	1.176[a]	.555
		% within Gender	0.4%	95.4%	4.2%	100.0%		
	Female	Count	1	144	3	148		
		% within Gender	0.7%	97.3%	2.0%	100.0%		
Age	15 – 24	Count	21	34	40	95	9.982[a]	.041
		% within age	22.1%	35.8%	42.1%	100.0%		
	25 – 34	Count	1	82	101	183		
		% within age	0.55%	44.8%	55.2%	100.0%		
	35 – 44	Count	6	40	71`	117		
		% within age	5.1%	34.2%	60.7%	100.0%		
	≥ 45	Count	0	8	5	13		
		% within age	0.0%	61.5%	38.5%	100.0%		
Marital status	Single	Count	1	107	0	108	6.202[a]	.185
		% within Marital	0.9%	99.1%	0.0%	100.0%		
	Married	Count	1	190	10	201		
		% within Marital	0.5%	94.5%	4.8%	100.0%		
	Others	Count	5	91	3	99		
		% within Marital	5.0%	91.9%	3.0%	100.0%		
Educational **Status**	Literacy	Count	1	100	1	102	21.933[a]	.001
		% within Education	0.9%	99.0%	0.9%	100.0%		
	5- 8	Count	0	63	0	63		
		% within Education	0.0%	100.0%	0.0%	100.0%		
	9 – 12	Count	0	83	0	83		
		% within Education	0.0%	100.0%	0.0%	100.0%		
	Collage & above	Count	1	146	13	160		
		% within Education	0.6%	91.3%	8.1%	100.0%		

Out puts of association between the socio demographic characteristics based on stigma and discrimination (attitudes and practices) towards HIV/AIDS patients are presented below, (Table 4.7).

The participants' socio demographic characters in Table 4.7 (occupation, gender, age, marital status, and educational status) had statistically significant association at p-value less than 0.05, with their attitudes and practices towards HIV/AIDS patients.

From the participants occupation group employed (96.3%), unemployed (100.0%), from gender groups male (94.6%), female (100.0%) had good attitudes practices towards HIV/AIDS patients. Four age category of age 15 - 24 (62.9%), 25 - 34 (100.0%), 35-44(100.0%) and ≥ 45 (100.0%) had also good attitudes and practices towards HIV/AIDS patients. Three groups the marital status, single (87.9%), married (100.0%), others (95%), and four groups of the educational status literacy (87.1%), 5 - 8 (100.0%), 9 - 12 (100.0%) and collage & above (100.0%) had good attitudes and practices towards HIV/AIDS patients.

Table 4.7 Chi-square association, with the socio demographic characteristics based on attitudes and practices towards HIV/ AIDS patients at Adwa town in July 2019, (n=408)

Socio-demographic characteristics			Bad	Good	Total	X^2	**p-value**
Occupation	Employed	Count	13	340	353	8.136[a]	**0.00**
		% within occupation	3.7%	96.3%	100.0%		
	Unemployed	Count	0	55	55		
		%within occupation	0.0%	100.0%	100.0%		
Gender	Male	Count	14	246	260	7.674[a]	.006
		% within Gender	5.4%	94.6%	100.0%		
	Female	Count	0	148	148		
		% within Gender	0.0%	100.0%	100.0%		
Age	15 – 24	Count	37	58	95	147.706[a]	.000
		% within age	37.1%	62.9%	100.0%		
	25 – 34	Count	0	183	183		
		% within age	0.0%	100.0%	100.0%		
	35 – 44	Count	0	117	117		
		% within age	0.0%	100.0%	100.0%		
	≥ 45	Count	0	13	13		
		% within age	0.0%	13	100.0%		
Marital Status	Single	Count	13	95	108	37.774[a]	.000
		% within Marital	12.1%	87.9%	100.0%		
	Married	Count	0	201	201		
		% within Marital	0.0%	100.0%	100.0%		
	Others	Count	5	94	99		
		% within Marital	5.0%	95.0%	100.0%		
Educational Status	Literacy	Count	13	89	102	40.815[a]	.000
		%within education	12.9%	87.1%	100.0%		
	5-8	Count	0	63	63		
		%within education	0.0%	100.0%	100.0%		
	9-12	Count	0	83	83		
		%within education	0.0%	100.0%	100.0%		
	Collage& above	Count	0	160	160		
		%within education	0.0%	100.0%	100.0%		

4.2Discussion

Source of knowledge on HIV facts

Results from the above analysis revealed that knowledge on modes of transmission and prevention of HIV among respondents is quite high. More than an average of 90%, of the respondents demonstrated correct knowledge of HIV facts from the listed variables in Table 4.2a which are teachers(schools),health clubs, social media, churches, relatives, doctors/nurses, friends, television, parents and magazines respectively. This study finding was in a line with that of Yaoundé, (2009), more than half of the students in Yaoundé city had good knowledge on the mode of transmission and prevention of HIV. This indicated that there was hot discussion among families and relatives or friends about HIV freely and it also showed that there was attentive follow up of media like television, radio, social-media and magazines about the issue of HIV. But there were still people who were not aware of this epidemic due to lack of sources of information. As indicated in Table 4.2a the response of respondents, there were an average of 10% of the sample size that did not get a little information from the listed sources of information. This is almost similar to the study in Yaoundé (2009), 'students trusted sources of HIV knowledge in Yaoundé' were teachers/schools, television, health clubs, doctors (nurses), churches, magazines, relatives, social media and friends. Fekadu Alemu (2014), also reported similar findings in Dilla university students that majority of them were discussed with their friends, parents, teachers, ant-HIV/AIDS clubs in schools and health professionals about HIV. This indicated that there was open discussion about HIV in the family and among relatives because it was very important in reduction of HIV distribution. Table 4.2a also showed socio demo-graphic characteristics such as occupation, age, marital status and educational status had statistically significant association with their sources of knowledge on HIV facts at p-value of less than 0.05, while sex had insignificant association, ($x^2 = 1.273^a$, p = .529).

Modes of transmission of HIV/AIDS

Epidemiologic studies have been demonstrated that HIV/AIDS is transmitted by three primary routes; sexual, parental (blood-borne), and prenatal (Nancy *et al*., 2005). Factors that increase the risk of exposure to blood, such as genital ulcer diseases (Cameron *et al.*, 1989), trauma during sexual contact and menstruation of an HIV-infected woman during sexual contact are possible risk factors for transmission of HIV. Sexual transmission of HIV from an infected partner to a non-infected partner can occur through sexual contact. Globally, sexual transmission of HIV is the leading mode of transmission (Quinn, 1996 and 2005).

Twelve statements of the modes of HIV/AIDS transmission mechanisms were listed in Table 4.2b, as a result an average of 77.1% of the respondents had a good knowledge on the modes

transmission of HIV/AIDS facts and practices. Majority (96.6% and 95.5%) respectively of the respondents had goo awareness about the cause of AIDS was HIV virus and it is the most advanced stage of HIV infections. About 86.1% of the study participants believed that, there is no cure for HIV/AIDS while 12.3% of the participants believed that HIV/AIDS is curable disease. This finding is the same to that of Fekadu Alemu's (2013) finding. About 95.2% of the participants also gave their response 'hugging an HIV virus infected person could spread HIV/AIDS. On the other way 79.2% of the study participants gave their responses coughing and sneezing couldn't spread HIV/AIDS, but still there were about 20.1% of the respondents agreed that coughing and sneezing could spread HIV/AIDS. In this Table, 95.3% and 93.6% of the study participants agreed that, sharing sharp materials such as needles and syringes with infected person and infected blood could spread HIV/AIDS respectively. In addition to this (90% and 99%) of the participants responded HIV/AIDS could spread through sex and from infected pregnant mother to unborn baby during pregnancy, birth and breast milk. Other important practice indicated that 95.7% of the participants gave response, someone can have HIV in his blood without any symptom. At last (96.7%, 46.2% and about 10.5%) of the respondents responded simple causal contacts such as kissing, sharing water glasses and toilet seats respectively could spread HIV/AIDS, while (3.3%,51.7% and 89% respectively of the participants opposed this idea. Similar findings or results were done by Fekadu Alemu in Dill University and Bekeny in Yaoundé high school students (2014, 2009) respectively indicated, tow-third of the cases had very good knowledge on the modes of HIV/AIDS transmission which is similar to this work. The test analysed in Table 4.2b, showed also participants' age' group had statistically significant association with their knowledge of mode HIV virus transmission from the socio demographic characteristics at p-value less than 0.05 or at (X^2 =29.092[a] , p =000), but the other socio demographic characteristics (occupation, sex, marital status and educational status) had statistically insignificant association.

Modes of prevention of HIV

Table 4.2c showed that an average of more than 82.58% of the participants in my study had a good knowledge on the HIV/AIDS modes of prevention mechanisms. This figure indicated that, they had enough knowledge to prevent from HIV infection. In addition this result showed that, know days people aware of HIV and its consequence. This result was more comparable with that of Fekadu Alemu (2014), and the same is true in the findings of Yaoundé (2009). About 64% of the students in Yaoundé Cameroon had a very good knowledge on the modes of prevention of HIV. There is no shame to buy condom from the shopkeeper. This showed awareness on the modes of prevention on HIV had been a very progressive change and this helps for the reduction of HIV distribution. In general an average

of 15.9% of the respondents had no knowledge about the mechanism or modes of HIV prevention. In addition to this there was a dilemma that kissing was transmitted HIV, that 66.5% of the respondents responded disagree and 33.5% agreed in this idea. There was also a wrong concept that 26.3% of the respondents believed, mosquito bites could transmit HIV. About 2% of the respondents also responded 'don't know the answer, this means either they didn't understand the concept of the statements or they didn't have knowledge of the modes of prevention of HIV/AIDS mechanisms. Finally the test analysed in this table also indicated that, educational status of the study participants had significant association with their knowledge of mode of prevention & control of HIV only at p-value less than 0.05, ($x^2 = 21.933^a$, $p = 0.001$). But the socio demographic characteristics such as sex, age, occupation and marital status had insignificant association.

Attitudes and practices of HIV towards AIDS patients

Attitudes and practices of people towards HIV were studied through the relationship of community or individuals with the HIV patients. As shown in Table 4.3, the main focus of the questionnaires was on the idea of stigma and discrimination of the HIV patients. Generally the result of this Table sounds to stop stigma and discrimination. Questions which indicated sexual practices of the participants were responded by the participants as below; ''Have you ever had sexual intercourse?'' (74.6% yes, 25.4% no), ''Did you use a condom the very first time you had sexual Intercourse?'', (22% yes, 78% no), ''Do you ever say NO to sex without condom?'', (87.6% yes, 12.4% no), and ''Have you been tested for HIV?'', (54.5% said yes, 45.5%). These responses were indicated the participants sexual practice had with a good transparency that means participants express their feeling without fear and shame, this led to the reduction of transmission of HIV virus.

The other statements in this Table were referred attitudes or opinions of the study participants towards AIDS patients. People with HIV virus in their body hide themselves due to fear of stigma and discrimination at the beginning of expansion of the diseases. But now it is changed because people in the world are aware that AIDS is the same with the other diseases. The study participant in this research were reflected this idea.

An average of 92.1% participants rejected stigma and discrimination must be stopped forever, but only about 6.9% of the participant supported this idea. The same result was also done by Fekadu Alemu (2014), his result revealed that majority of respondents did not believe in isolating HIV positive individuals, while a small minority (6.4%), believed in isolating those HIV positive individuals. On the contrary, studies in Cameroon (Yaoundé, 2009) revealed that stigma is a major problem especially for the youth population who do not collect their HIV test results because of fear of stigmatization if they would happen to be HIV

positive. This was so different from the two studies may be due to the increment of awareness through time. Other important points were shown in this table, if they would happen to be HIV positive. This was so different from the two studies may be due to the increment of awareness through time. Other important points were shown in this table, 53.43% respondents had been tested for HIV, while 46.56% did not attempt the test on HIV this result was similar to that of Fekadu Alemu (2014). Finally the test analysed results indicated that the study participants had significantly associated with their attitudes and practices towards HIV patients at p-value less than 0.005.

5. CONCLUSION AND RECOMMENDTION

5.1 Conclusion

AIDS is one of the greatest public health and social problems that challenging the human race in the globe. Among which sub-Saharan Africa region, where the highest number with an estimated 70% of the global victims of HIV is found. Ethiopia is hardly affected by the HIV pandemic. Findings showed that, majority of the people that lived with HIV virus were belonged to the productive age (15-49) years in both females and males. Among those the number of females living with HIV virus had been greater than the males living with HIV virus in all age groups. Findings from cross sectional survey also showed majority of the respondents had a good knowledge on HIV facts, modes of transmission, and prevention of HIV. The attitudes and peoples' practice of HIV was greatly changed from the beginning that sounds stigma and discrimination had been changed. As the respondents explained 'the most significant and trusted source of information' on HIV facts, prevention and transmission mechanisms were teachers (schools), television, health clubs doctors, parents and churches. Majority of the respondents (96.6%) knew that AIDS is caused by HIV virus and over 95% of them also know the mode of transmission. The majority (86.1%) agreed that HIV is not a curable disease and only few (13.9%) had misconception towards the curability of the disease. With regard to the mode of prevention and control of HIV, 73.0, 96.1, 96.2 and 93.5% of the study participants agreed that abstained, condom use, limited sex, and no sex with prostitutes were the ways of protection against HIV respectively.

5.2 Recommendation

Even though considerable efforts have been invested in the fight against HIV/AIDS prevention and response in national as well as regional level, efforts do not fully respond to meet the actual needs. Still HIV is epidemic in the whole country as well as in regional states including Tigray. Because the effort and investment to fought against this epidemic had no continuity and was not at the ground level. In addition to this it was not supported by local financial resources and was not inclusively all governmental organizations. Stake holders, financial supporters, educational institutions, all governmental organizations and NGOs should have committed to fight the epidemic collaboratively with each other. Leadership commitment to aware the society and fight against HIV should be also necessary.

According to the findings the following should be the focus areas to fight against HIV, and governments, NGOs and other organizations who concerned about HIV/AIDS should work on :

- Health clubs at schools and Kebelles level
- Health packages at family level
- Mass media should play great role in the fight of HIV.
- Religious centres (churches and mosques)
- Rural areas
- Higher institutions (colleges and universities)
- HIV positive individuals should motivate to involve on the fight against HIV
- Research works carried out by government as well as by private coverage should be fairly distributed throughout urban and rural residences.

At the end the fight against HIV should be supported by local finances (national as well as regional states).

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Appendix A questionnaire

Addis Ababa University

Collage of Natural and Computational Sciences

Department of Zoological Sciences

Graduate Programs

Research questionnaires

Personal information

Sex____ age _____

Educational status _____

Marital status: single ( ), married ( ), other ( )

Occupation_____

Part I. Mark (√) under the column

№	How important as a source of knowledge about HIV/AIDS are the following to you	Not at all	A littl	Importan t	Very important
1.1	Television				
1.2	Parents				
1.3	Magazines				
1.4	Friends				
1.5	Relatives				
1.6	Teachers				
1.7	Internet (social media, face book)				
1.8	Health Clubs				
1.9	Doctors/Nurses				
1.10	Church				

PART II mark /√/ according to your personal opinion

№	Items **HIV could be avoided by.....**	**Disagree**	**Agree**	**Strongly agree**	**Don't know**
2.1	Abstaining from sex				
2.2	Using condoms				
2.3	Limiting sex to one partner				
2.4	voiding sex with prostitute (Commercial sex workers)				
2.5	Avoiding sex with person with many Partners				
2.6	Avoiding sex with persons of same sex				
2.7	Avoiding blood transfusions (everywhere)				
2.8	Avoiding injections				
2.9	Avoiding kissing				
2.10	Avoiding mosquito bites				
2.11	Seeking protection from traditional healers				

PART III Mark /√/ about the following statements

№	Items	Disagree	Agree	Strongly agree	Don't know
1	AIDS is caused by HIV- The Human Immune Deficiency Virus				
2	HIV is transmitted through hugging an Infected Person				
3	HIV can be spread through coughing and Sneezing				
4	HIV is can be spread by sharing needles or syringes with someone who has the virus				
5	HIV is commonly spread by getting HIV -infected Blood				
6	HIV is spread through sex				
7	HIV can also be passed from infected Pregnant woman to her unborn baby during pregnancy birth and breast milk.				
8	HIV is transmitted by simple casual contact such as kissing				
9	HIV is transmitted by sharing water Glasses				
10	HIV can be contracted on toilet seats				
11	Mosquitoes can transmit HIV				
12	Condoms will decrease the risk of HIV Transmission				
13	AIDS is the most advanced stage of HIV Infection				
14	Someone can have HIV without symptoms				
15	AIDS can be cured if treated early				
16	There is no cure for HIV/AIDS				

ART IV Mark /√/ under yes or no for the following statements?

№	ITEMS	YES	NO
1	Have you ever had sexual intercourse?		
2	Did you use a condom the very first time you had sexual intercourse?		
3	Do you ever say NO to sex without condom?		
4	People with HIV should stay indoors or in a Hospital.		
5	If a family member is HIV positive it should be kept a secret .		
6	People with HIV should be kept out of School.		
7	I would end my friendship if my friend had AIDS.		
8	I am willing to do volunteer work with AIDS Patients.		
9	I would buy vegetable from an HIV positive Shop keeper.		
10	If a family member contracts HIV they Should move out of home.		
11	HIV is a curse from God.		
12	Have you been tested for HIV?		
13	Would you think you have risk of acquiring HIV?		
14	Do you ever heard mother to child transmission can be prevented?		

Appendix B, ቃለ መሕትት

ኣብ ምምሕልላፍን ምክልካልን HIV/AIDS ዝጠመተ ቃለ መሕትት

ሓፈሻዊ ሓበሬታ : እዚ ቃለ መሕትት ዕላምኡ መዕናዕቲ ንምክያድ ስለዝኾነ ትክክለኛ ሓበሬታ ብምሃብ ይተሓባበሩና/ራና። ንዝግበረለይ ምትሕብባር ኣቀዲመ የመስግን።

ዕድመ_____ ፆታ ፡ ተባ( ) ኣነ ( )

ደረጃ ትምህርቲ_____

ኩነታት ሓዳር ዘእተወ ( ) ዘይ ዘእተወ ( ) ካልኢ ( )

ሞያ(ስራሕ) _____

ክፍሊ ሓደ

ሪጋ 1	እዞም ዝስዕቡ ኣብ ኤችኣይቪ ኤድስ ዝህልወካ/ኪ ግንዛብ ንምዕባይ ክንደይ ዝኣክል ጠቀምቲ እዮም?	ጥቅሚ የብሉን	ትሑት	ልኡል	ኣዝዩ ልዑል
1.1	ቴሌቪዥን /ሬድዮ				
1.2	ወለዲ				
1.3	መፅሂት				
1.4	መሓዙት				
1.5	ቤተ ሰብ				
1.6	መምህራን/ቤት				
1,7	ማሕበራዊ ሚድያ				
1.8	ሓካይም				
1..9	ኣብያተ እምነት				
1.10	ጥዕና ክለባት				

<u>ክፍሊ ክልተ</u> - (√) ብምጥቃም ዉልቃዊ ርኢቶካ/ኪ ግለፅ/

ሪጋ	ሜላታት መከላከሊ ኤችአይቪ ኤድስ	አይስማዕማዕን	ይስማዕማዕ	ብጣዕሚ ይስማዕማዕ	አፍልጦ የብለይን
2.1	ምዕቃብ				
2.2	ኮንደም ምጥቃም				
2.3	ምዉሳን				
2.4	ሰብነተን ሸይጠን ምስ ዝሓድራ አንስትዮ ርክብ ዘይ ምፍፃም				
2.5	ምስ ቡዝሓት ዖታዊ ዓሚል ዘለዉኦም/ወን ዖታዊ ርክብ ዘይምፍፃም				
2.6	ምዉጋድ ግብረስዶም				
2.7	ምክልካል ምርመራ ዘይተገበረሉ ህብ ደም				
2.8	ብዘይተቀቀለ መርፍኣ ዘይምውጋእ				
2.9	ዘይምስዕዓም				
2.10	ካብ ንክስት ጣንጡ ምክልካል				
2.11	አብ ናይ ልሚድ ሓካይም ዘይምሕካም				

<u>ክፍሊ ሰለስተ</u>- ንትስማዕመዐለ/ዕለ በዚ ምልክት (√) ሓሳብካ/ኪ ግለፅ/ፂ

ጋ	ቀንድ ፍረ ሓሳባት	አይስማዕ ማዕን	ይስማዕ ማዕ	ብጣዕሚ ይስማዕ ማዕ	አፍልጠ የብለይን
1	ሕማም ኤድስ ኤችአይቪ ብዝባሀል ቫይረስ ዝነቅል ሕማም እዩ				
2	ኤችአይቪ በቲ ቫይረስ ምስ ዝተለከፈ ሰብ ብምንክካእ ክመሓላለፍ ይክእል እዩ				
3	ቫይረስ ኤች ኤቪ ብሰዓልን ብምህንጣስን ክመሓላለፍ ይክእል እዩ				
4	ቫይረስ ኤች ኤቪ ሓበራዊ ብዝኮኑ በላሕቲ ነገራት : መርፍእ/ስርንግ በቲ ቫይረስ ምስ ዝተለከፈ ሰብ ሓብርካ ብምጥቃም ይመሓላለፍ				
5	በኤችአይቪ ዝተበከለ ህያብ ደም ንኤችአይቪ ቫረስ የቃልዕ እዩ				
6	ኤች ኤቪ ቫይረስ ብዖታዊ ርክብ ይመሓላለፍ				
7	ብኤች አይቪ ቫይረስ ዝተበከለት አዶ አብ እዋን ጥንስ/አብ እዋን ወልድን አብ ግዜ ምጥባዊን ነቲ ህፃን ክተመሓላልፈሉ ትክእል እያ				
8	ኤችአይቪ ቫረስ ብምንክካእን ብምስዕዓምን ክመሓላለፍ ይክእል እዩ				
9	ኤች አይቪ ቫይረስ ብሓበራዊ ማይ መስተይን መመገብ ናዊቲን ክመሓላለፍ ይክእል እዩ				
10	ኤች አይቪቫይረስ ናይ ሓባር ሽንቲ				

	ቤት ብምጥቃም ክመሓላለፍ ይክእል				
11	ኤች አይቪ ቫይረስ ብንክስት ጣንጡ የመሓልለፍ				
12	ኮንደም ምጥቃም ኤች ኤይቪ ቫይረስ ናይ ምምሕላላፍ ክእለቱ ይቅንስ እዩ				
13	ኤድስ ማለት እቲ ዝለዓለ ደረጃ ልክፍቲ ኤችአይቪ ቫይረስ እዩ				
14	ሓደ ሉኩፍ ኤችአይቪ ቫይረስ ምልክታት እቲ ሕማም እንተይአርአየ ንነዊሕ እዋን ክፀንሕ ይክእለ እዩ				
15	ሕማም ኤድስ ብእዋኑ ሕክምና እንተተገይርለ ክድሕን ዝክእል ሕማም እዩ				
16	ኤድስ ብሕክምና ክድሕን ዘይክእል ሕማም እዩ				

<u>ክፍሊ ኣርባዕተ-</u> እዚ ምልክት (√) ኣብ ትሕት እወ ወይ ኣይፋል ብምቅማጥ ሪእቶካ/ኪ ግለፅ/ፂ

ሪጋ	ቀንድ ፍረ ሓሳባት	እወ	ኣይፋል
1	ዕታዊ ርክብ ፈፅሚካ/ኪ ዶ ትፈልጥ/ጢ		
2	ዕታዊ ርክብ ንመጀመርያ ግዘ እንትትፍፅም/ሚ ኮንዶም ተጠቅምካ/ኪ ዶ ነይርካ/ኪ		
3	ብዘይ ኮንደም ዕታዊ ርክብ ክትፍፅም/ሚ እንትትሕተት/ቲ ኣይስማዕማዕን ዶ ትብል/ሊ		
4	ብኤችኣይቪ ዝተለከፉ ሰባት ከብ ገዝኦም ወይ ካብ ሆስፕታል ክወፁ የብሎምን		
5	ሓደ ኣባል ስድራ ዝኾነ ሰብ ኤች ኣይቪ ኣብ ደምካ ኣሎ እንትባሃል ብምሸጥር ክሕዞ ይግባእ		
6	ኣብ ደሞም እችኣይቪ ዘለዎም ሰባት ካብ ቤት ት/ቲ ክእገዱ ኣለዎም		
7	ዓርከይ ኣብ ደሙ ኤችኣይቪ ምህላዉ/ዋ ምስ ፈለጥኩ ምሕዝነተይ ክቃርዖ ይግባእ		
8	ምስ ኤድስ ሕሙማት ወለንታዊ ስራሕ ክሰርሕ ይግባኣኒ		
9	ኣብ ደሙ ኤችኣይቪ ካብ ዘለዎ ዉልቀሰብ ኣሕምልቲ ክገዝእ እየ		
10	ካብ ኣባል ስድራና ኣብ ደሙ ኤች ኣይቪ እነትርከቦ ካብ ኣባል ስድራና ክነዉግዶ ኣለና		
11	ኤች ኤቪ ኤድስ ብፈጣር ዝወሀብ ሕማም እዩ		
12	ኤች ኤቪ ኤድስ ምርመራ ጌርካ ገይርኪ/ካ ዶ ትፈሊጢ/ጥ		
13	ብኤች ኣይቪ ቫይረስ ክሊከፍ ይክእል እየ እልካ/ኪ ሓስብካ/ኪ ዶ ትፈልጥ/ጢ		

14	ካብ አዶ ናብ ሕፃን ዝመሓላለፍ አችአይቪ ቫይረስ ምክልካል ከም ዝካአል ትፈልጥ/ጢ ዶ		

Appendix C Ethical clearance

COLLEGE OF NATURAL & COMPUTATIONAL SCIENCES
Addis Ababa University
OFFICE OF THE DEAN
ዲን ጽ/ቤት

የተፈጥሮና ኮምፒቴሽናል ሳይንስ ኮሌጅ
አዲስ አበባ ዩኒቨርሲቲ

Ref. No. ቁጥር CNSDO/185/12/19
Date: ቀን: November 13, 2019

To Whom It may Concern

The College of Natural & Computational Science Institutional Review Board (CNS-IRB) Committee in its meeting held on October 18 /10/2019 Minute No. IRB/40/219 has examined the project proposal entitled **" The Prevalence of HIV /AIDS at Adwa Town" by G/ Yohanes Yibabeh** from the Addis Ababa University.

The proposal is approved for implementation.

With regards,

Dr. Addisalem Abathun

Dean , College of Natural & Computational Science