WOLKITE UNIVERSTY

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Trend of HIV/AIDS prevalence at Wolkite health center,Garage zone, Southern Central Ethiopia: A Retrospective Study

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BY

1, Tadele Birhanu

2,Kidist Kassahun

3, MohammedNuru Ibrahim

4, Gemechu Hussen

Advisors

1. MiheretAlemayehu (BSC, MSC)

2. Absra Solomon (Ass. Prof

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ABBREVIATIONS

AIDS-Acquired Immunodeficiency Virus

EDHS- Ethiopian Demographic and Health Survey

HIV-Human Immunodeficiency Virus

NAT-nucleic acid test

P-prevalence

SPSS- Statistical Package for Social Sciences

TB -tuberculosis

WHO- World Health Organization

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ABSTRACT

BACKGROUND–Human immunodeficiency virus (HIV) is a viral infection that can be transmitted through exchange of body fluids from infected people, such as blood, breast milk, semen and vaginal secretions and mother to child during pregnancy and delivery. Global trend in HIV infection show an overall increase in HIV prevalence and substantial declines in AIDS related deaths.

OBJECTIVE – to assess the trend analysis of HIV/AIDS at Wolkite health center from October to December 2011-2012E.C.

METHOD - A retrospective study was carried out to assess the trend of HIV/AIDS prevalence for the last 2 year on patients attended at Wolkite town health center. Socio-demographic characteristics and laboratory results were extracted from the ART department logbook .Data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version 23 software. Table and figure was used to present the data.

RESULT-During the last two years, 2266 individuals was screened for the HIV status. From the total HIV screened individuals, 879 (38.8%) were male and 1387 (61.2%) were female. with a female-to-male gender ratio of 1.58. the overall prevalence of HIV infection was found to be 1.06% (24/2266) in the last two consecutive years. In 2011 the prevalence of HIV was 0.58% (8/1363) and 1.77% (16/903) in 2012.Age group 25-49 was highly proportional HIV infection this age group were what we call fire age group,youth they are exposed to various form of prompt. and among the residence other(edigetber, selamber ,menharia…) was highest prevalence followed by abseqa and kebena. General population was the most affected taregate population category followed by partner live with HIV, female had highest prevalence than male. Female are more exposed to sexual.

CONCLUSION-The prevalence of HIV infections among HIV screened individuals showed increased trend in the study setting, which needs constant monitoring to evaluate prevention and control strategies. The trend of HIV prevalence was found to be increased from 2011 to 2012 so that to reduce the possible risk of infections, provision of strict criterion in dissemination of

information about the HIV through the use both formal and informal learning to community is the chosen to create awareness.

1. INTRODUCTION

1.1 BACKGROUND

Human immunodeficiency virus(HIV) is an infection that attacks the body's immune system, specifically the white blood cells called Cluster of Differentiation (CD4) cells. HIV destroys these CD4 cells, weakening a person's immunity [1].The most advanced stage of HIV infection is acquired immunodeficiency syndrome (AIDS).A healthy immune system normally has a CD4 count ranging from 500 to 1,600 cells per cubic millimeter of blood. When the number of their CD4 cells falls below 200 cells per cubic millimeter of blood and they develop one or more opportunistic infection regardless of their CD4count, a person will receive a diagnosis of AIDS [2].

The symptoms of HIV infection vary depending on the stage of infection. Initially people may experience no symptoms or an influenza-like illness including fever, headache, rash or sore throat. As the infection progressively weakens the immune system, they can develop other signs and symptoms, such as swollen lymph nodes, weight loss, fever, diarrhea and cough. Without treatment, they could also develop severe illnesses such as tuberculosis (TB), Cryptococci meningitis, severe bacterial infections, and cancers such as lymphomas and Kaposi's sarcoma[3].

HIV infection can be diagnosed through different methods including nucleic acid tests (NAT), antigen and antibody tests. NAT detects the actual virus in the blood known as viral load. The current HIV /AIDS algorithm is Stat pack-Abbon-SD bioline.

1.2 STATEMENT OF THEPROBLEM

HIV continues to be a major public health issue. According to the global HIV/AIDS statics approximately 38 million people lives with HIV in 2019. Of these 36.2 million were adults and 1.8 million were children (0-14 years). In the same year, 690 000 people died from AIDS-related illnesses [4].

Infections of HIV/AIDS lead to numerous mental and social issues that affect the individual and impacts on their families and communities at large. Many patients suffer anxiety, frustration, depression, hopelessness, stigma and discrimination against person living with HIV/AIDS .this

fear of discrimination frequently averts individuals from seeking treatment and management of AIDS.HIV/AIDS had the greatest negative effect on the economics of many countries all over the world. It has caused deep poverty both to the individual, families and community. It affect person in the most economically able and productive age [5].

HIVAIDS is a major public health concern and cause of death in many African. In 2017both the rate of new HIV infection and the burden of HIV remain high in western and central Africa. An estimated percentage 5 million people live with HIV in western and central Africa in 2018,while Eastern and southern Africa remains the region most affected by the HIV epidemic, that account 45% of the world's HIV infections and 53% of people living with HIV. Globally, 800 000 people acquired HIV and 310 000 AIDS related death in 2018[6]

HIV/AIDS is one of the key challenges for the overall development of Ethiopia. In Ethiopia 690 000 people were living with HIV in 2018.Of these, 23000 people were newly infected with HIV and 11 000 people died from an AIDS related illness. Women are disproportionally affected by HIV in Ethiopia of the 650 000 adults living with HIV, 410 000(63.08%)were women. New HIV infections among young women aged 15-24 years were more than double those among young men [8]. The trend of HIV prevalence in Ethiopian was estimated 1.3% in2010, 1.1% in2015 and1% in 2018 [9].

A cluster analysis of HIV prevalence in 2019, Ethiopian Demographic and Health Survey (EDHS)showed the prevalence of HIV was in the ranges of 10–21% in certain geographic clusters, particularly in the central, eastern and western parts of the country. It also revealed that the prevalence of HIV was neither randomly nor uniformly distributed in the country, with the epidemic having concentrated in geographic areas of 25 administrative zones in Oromia, Amhara, Tigray, Afar, and Somali regions (10).

1.3 SIGNIFICANCE OF THE STUDY

Two years retrospective study was analyzed on the trend analysis of HIV infection at Wolkite health center. HIV infection was increased in the last consecutive twoyears (2011-2012) among adults. Knowing the trend will help to monitor the progress of prevention and control efforts in country.

The study will provide significant information about the magnitude of HIV patients and the severity of HIV based on age-sex distribution as well as other demographic factors. The study will be used to increase the awareness of the community about the prevalence, transmission and associated factor of the HIV infection in order to protect them from the infection. In addition to that, the result of this research is used as baseline to provide information for policy makers and health care providers by indicating its prevalence and trends for good management health.

2. LITRATURE REVIEW

Global trends in HIV infection showed an overall increase in HIV prevalence and substantial declines in AIDS related death. There were almost 90,000 more new HIV infections among men than women in 2017 (11).In Canada, a prospective cohort study conducted to determine high prevalence of HIV infection among homeless and street-involved aboriginal youth. They found 15 (2.8%) were HIV positive, of whom 7 (46.7%) were Aboriginal. Aboriginal ethnicity was a significantly correlated with HIV infection (odds ratio = 2.87, 95%CI: 1.02 – 8.09). Of the HIV positive participants, 2 (28.6%)Aboriginals and 6 (75.0%) non-Aboriginals were reported. hepatitis C co-infection with that of HIV was significantly less common among Aboriginal Participants (p = 0.041). They conclude that factors other than injection drug use may Promote HIV transmission among street-involved Aboriginal youth. (11).

In South Africa, a cross sectional biomarker survey conducted to determine the prevalence of HIV among the age of 15 and older in rural area. HIV prevalence was high (19.4%) and characterized by a large gender gap (10.6% for men and 23.9% for women). Similar study in the rural KwaZulu-Natal Province, South Africa, peak prevalence occurred at later ages, and HIV prevalence was higher among older adults with rates above 15% for men and 10% for women through to age 70[12].

In Ethiopia, 2016, the trend and spatial distributions of HIV prevalence was estimated as 6%, 4.7% and 3.5% in Gambella, Addis Ababa and Harari respectively. High clusters of HIV cases were consistently observed in Addis Ababa and neighboring areas of the Afar, Tigray, Amhara regional states and central Oromia. This analysis revealed that there was area which needs to be studied with respect to the epidemic of HIV (13).In 2014, the study was conducted in Hawassa University referral and Yirgalem general Hospital in 457 participants,. Cumulative and overall incidence rate of HIV positivity among infants were 19/457(4.16%) (14).

3. OBJECTIVE

3.1 GENERAL OBJECTIVE

- To determine the trend of HIV/AIDS prevalence in Wolkite health center, Gurage zone, southern Central Ethiopia from 2011-2012E.C.

3.2 SPECIFIC OBJECTIVES

- To determine the prevalence of positively screened patients in the last two consecutive years (2011 and 2012).
- To determine the distribution of HIV prevalence by sex and age.
- To identify the magnitude of HIV patients based on their residence (Menharia, edeget ber, selam ber…)

4. METHOD AND MATERIALS

4.1 STUDYAREA

The study was conducted in Wolkite health center, in the Western Gurage Zone. It is locatedat 175 km south west of Addis Ababa, Southern Region of Ethiopia.Gurage zone is geographically located in the rift valley region at a latitude and longitude of 8°17'N37°47'E and an elevation between 1910 and 1935 m above sea level. The climatic condition of the town is Weyna Dega.

4.2 STUDY PERIOD

The study was conducted from October to December, 2013 E.C.

4.3 STUDY DESIGN

A retrospective study was conducted to determine the trend of HIV prevalence at Wolkite health center, Gurage zone, southern central Ethiopia from 2011-2012. The data will be collected from ART logbook by using a data extraction sheet

4.4 POPULATION

4.4.1SOURCE POPULATION

All screened patients result registered on the logbook at Wolkite health center, Gurage zone, Southern Central Ethiopia from 2011-2012E.C.

4.4.2 STUDY POPULATION

All HIV screened patients result registered on the ART department log book at Wolkite health center, Gurage zone, Southern Central Ethiopia from 2011-2012E.C.

4.5 STUDY VARIABLE

4.5.1 DEPENDENT VARIABLE

- HIV/AIDS infection.

4.5.2 INDEPENDENT VARIABLE

- Sex
- Age
- Residence
- Year and month

4.6 INCLUSION AND EXCLUSIONCRITERIA

4.6.1 INCLUSION CRITERIA

- All HIV screened patients result with complete data registered in the ART department logbook from 2011-2012E.C was included.

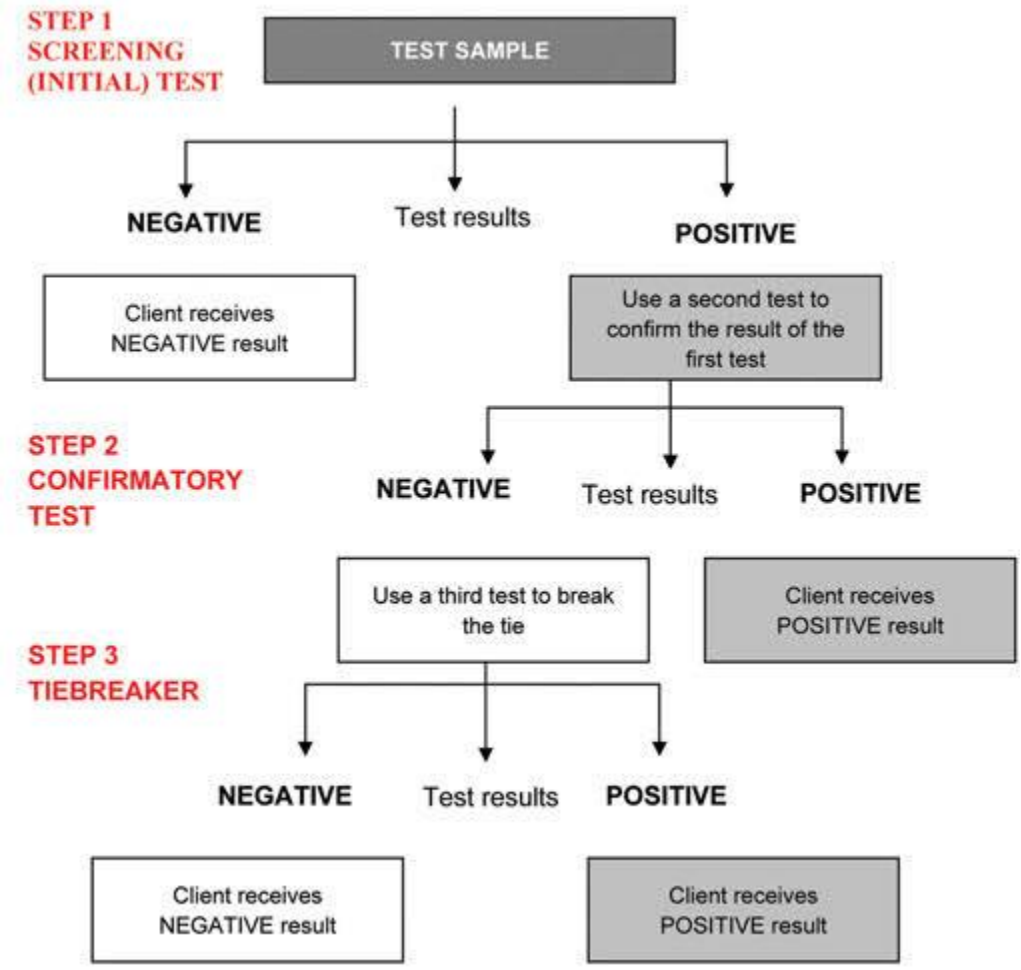
4.6.2 EXCLUSION CRITERIA

- All HIV screened Patients with incomplete demographic, clinical, and laboratory data was excluded from the study.

4.7 DATA COLLECTION METHOD

Socio-demographic, clinical and laboratory data was collected from patient‘s ART logbook from wolkite health center by using data extraction sheet. The tests were done by laboratory technologists according to

standard HIV testing guideline.



4.8 DATA ANALYSIS

The data was coded manually and collected then checked for its completeness &consistency. It was checked manually before entry to software. Data was entered and analyzed using Statistical Package for Social Sciences (SPSS) version23 software. Table and figure were used to present data.

4.9 DATA MANAGEMENT AND QUALITY CONTROL

In order to maintain the quality of data, BSc in MLS who are trained on laboratory ART logbook and four medical laboratory students were selected for data collection. Training was given before data collection period for one day about objective of the study, variables on the questionnaire,

medical record and follow-up form and how to abstract data for this study purpose. During data abstraction, there was close supervision by principal investigators. Completed questionnaire was checked for completeness of information and any gap identified was immediately communicated between data collectors then Data quality was ensured through the use of standardized data collection checklist.

4.10 ETHICAL CONSIDERATION

Ethical clearance was obtained from the Research and Ethical Review Committee of Wolkite University, College of Medicine and Health sciences, Department of Medical Laboratory Science to perform this research. Permission was submitted to Wolkite health center in order to collect data. Then the head of the health center lead us to ART data management class. As it was a retrospective study, secondary data was found to be essential; Confidentiality of the information extracted was maintained by not recording their names from ART department logbook but keeping the extracted data from logbook by giving unique code was assured confidentiality of the patients.

4.11 DISSEMINATION AND UTILIZATION OF RESULT

The result of the study will be disseminated to Wolkite University, College of Medicine and Health Sciences, department of Medical laboratory science through presentation in seminars. Finally, the result of study should be attempted to be published to community in order to make them to be aware about the trends and prevalence of the HIV/AIDS. Finding should be applicable to all of community to solve health problem and it would be released on the reputable journal to the community.

Result

During the last two year, 2266 individuals were screened for the HIV status. From the total HIV screened individuals, 879 (38.8%) and 1387 (61.2%) were male and female with a female-to-male gender ratio of 1.58. The finding of this study showed that there were 24 HIV positive patients. Therefore, the overall prevalence of HIV infection among HIV suspected patients was found to be 1.06% in the two consecutive years.

Trend of HIV infection has increased from 2011 to 2012; this was assured when the prevalence of HIV was found to be 0.58 and 1.77 in these two consecutive years. Considering age, the age groups 25-49 and 20-24 had the highest contribution and the age group <1, 1-4,5-9 and 10-14 had the lowest contribution and the age group(25 – 49) highly associated with HIV, female had highest prevalence than male. Female are more exposed to various form sexual abuse. Considering the residence, kebena had the lowest contribution and abesqa had the medium contribution while others had the highest contribution to the positivity of HIV infection.

The result of this research is shown as follows in tables.

Table 1:-socio demographic characteristics of patients who have been screened for HIV from 2011-2012

Characteristics		Frequency	Percent (%)
Sex	Male	879	38.8
	Female	1387	61.2
	Total	2266	100%
Age	<1	7	0.3
	1-4	37	0.6
	5-9	107	4.7
	10-14	161	7.1
	15-19	583	25.7
	20-24	611	27.0
	25-49	631	27.8
	>50	129	5.7

	Total	2266	100%
Residence	Abeshge	266	11.7
	Kebena	112	4.9
	Others	1888	83.3
	Total	2266	100%

Table 2:-The trend of HIV prevalence among HIV positively tested individuals from 2011- 2012

Year	Patients of tested	HIV+	HIV NEGATIVE	TOTAL
2011	1363	8	1355	1363
2012	903	16	887	903
Total	2226	24	2242	2266

DISCUSSION

Human immunodeficiency virus (HIV) is a viral infection that can be transmitted through exchange of body fluids from infected people, such as blood, breast milk, semen and vaginal secretions and mother to child during pregnancy and delivery. Global trend in HIV infection showed an overall increase in HIV prevalence and substantial declines in AIDS related deaths but in this study, the overall prevalence of HIV infection was 24 (1.06%) It showed an increased trend from 2011 to 2012.it is also lower when compared with the 2.8% reported in Canadian (11) and 19.4% in South Africa (12).

The prevalence of HIV is lower when compared with previous studies done in Ethiopia gambella (6%) ,Addis Ababa (4.7%) and harari(3.5) (13). it is also lower when compared with five years studies done in Hawassa, Ethiopia (1.6%) (14). In South Africa, a cross sectional biomarker survey conducted to determine the prevalence of HIV among the age of 15 and older in rural area was 19.4% but the overall prevalence of HIV in our two years study in Wolkite health center was 1.06.This showed us that the prevalence of HIV in our study area was lower than that of south Africa .In South Africa prevalence in sex distribution was found to be 10.6% for men and

23.9% for women [12] but according sex distribution of our result the prevalence of HIV in last two years(2011&2012) was 0.91% in male and 1.15 in female, so the sex based prevalence of HIV in our study area was lower than that of south Africa.

In Canada, prevalence of HIV was 2.8. Hepatitis C co-infection with that of HIV was significantly less common among Aboriginal Participants (**p = 0.041**) (11). As compared to our result the prevalence of HIV of Canada was higher but p value of our result is higher (**0.581**) than Canada.

Sex specific prevalence of HIV infection was 0.91 %(8/879) for males and 1.15 %(16/1387) for females. The difference between the two sexes was not consistent with other studies that showed a higher prevalence among females, yet the age specific prevalence was highest among the age group 25-49 years followed by those who were 20-24 years. Our research showed that prevalence of positivity of HIV was highest in others(ediget ber, selam ber, menharia…..) than abesqa and kebena.

CONCLUSION

The prevalence of HIV infections among HIV screened patients is still high in this study setting, and needs constant monitoring to evaluate prevention and control strategies. The trend of HIV prevalence was found to be increased from 2011 to 2012 so that to reduce the possible risk of infections, provision of strict criterion in dissemination of information about the HIV through the use both formal and informal learning to community is the chosen to create awareness.

Screening of blood and blood products for HIV pathogens using sensitive laboratory test kits, serological and molecular tests are effective methods to test. Creating community awareness about the mode of transmission and prevention of HIV infection should be strengthened by giving health education. Moreover, conducting further community based studies to identify societal risk factors exposing communities for blood-borne infections and developing population specific interventions to interrupt transmission are valuable.

RECOMMENDATION

As we know the trend of HIV is increasing from 2011-2012 E.C. we recommend to Wolkite health office to be more concern about this issue (HIV) give health education about the cause,

transmission and prevention of HIV in order to address the impact of infection associated to HIV.

LIMITATION OF THE STUDY

- There were missing data(name, address, age)
- Shortage of time

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