ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF ALLIED HEALTH SCIENCE

DEPARTEMET OF NURSNG AND MIDWIFERY

CERVICAL CANCER SCREENING SERVICE UTILIZATION AND ASSOCIATED FACTORS AMONG HIV POSITIVE AND WOMEN WITH UNKNOWN STATUS IN ALAMATA GENERALIZED HOSPITAL, TIGRAY, ETHIOPIA 2018: COMPARATIVE CROSS SECTIONAL STUDY

BY: Lielt G/Selassie

A research thesis submitted to school of graduate studies, Addis Ababa University College of health science, school of allied health sciences, department of nursing and midwifery in partial fulfilment for the requirements for degree of master science in maternity and reproductive health.

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APPROVAL SHEET
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I hereby, certify that I have read and evaluated this topic entitled cervical cancer screening service utilization among HIV positive and women with unknown status in Alamata generalized hospital, Tigray, Ethiopia 2017 which was prepared under my guidance. I recommend it to be submitted as fulfilling the thesis requirement.

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Abstract

Introduction: Cervical cancer is a cancer develops at the neck of the womb which is due to the abnormal growth of cells that have the ability to invade other parts of the body. With approximately 528,000 new cases occurring each year worldwide. It is the second leading cause of cancer related death and one of the top 20 causes of death in Ethiopia. The disease is about 7.9 times more common in HIV infected women than none infected ones. Cervical cancer screening reduces morbidity and mortality by more than 80%.Cervical cancer screening coverage in Ethiopia is very low which is 1.6% for all women with unknown status and <1% for HIV positive women.

Objective: The objective of this study was to assess and compare cervical cancer screening service utilization and associated factors among HIV positive women and unknown HIV status women at Alamata generalized hospital, Tigray Ethiopia 2018.

Method: facility based cross sectional study design was conducted from March1 –May15, 2018. A total of 714 women, 357 from HIV positive and 357 from unknown HIV status women come to the hospital was selected by systematic random sampling method. Data was collected by interviewer administered, entered to Epi data version 3.1 and exported to SPSS version 23 for analysis. Bivariate and multivariate logistic regressions were used to identify factors associated with outcome variable.

Result: The magnitude of cervical cancer screening service utilization among both groups was very low which was 7.8% for HIV positive and 11.4 % for unknown HIV status women ones and the difference was statistically significant. Factors associated with utilization of cervical CA screening service among HIV positive women groups was parity{AOR=3.87795% CI=(1.264-11.891)}, knowledge AOR=4.754 95%CI =(1.534-14.738) and perceived susceptibility {AOR=3.898 95% CI=(1.255-12.103)} and among unknown HIV status women groups having multiple sexual partner {AOR=5.058 95%CI=(1.83-13.978)}, knowledge {AOR=4.822 95% CI=(1.172-19.832)}and perceived susceptibility {AOR=3.212 95% CI=(1.129-9.137)} have significant association.

Conclusion and recommendation: The prevalence of cervical cancer screening among both groups was very low. Determinant factors among two groups were the same with exception of parity and having history of multiple sexual partners. Responsible bodies should give better attention in awareness creation and knowledge improvement among women.

Key word=cervical cancer, cervical cancer screening, utilization

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List of Acronyms and Abbreviations

ACA: American Cancer Association

AIDS: Acquired Immune Deficiency Syndrome

ART: Anti-Retroviral Therapy

CA: Cancer

EDHS: Ethiopian Demographic Health Survey

HIV: Human Immunodeficiency Virus

HBM: Health Belief Model

HPV: Human papilloma Virus

LBC: Liquid Based Cytology

OPD: Out Patient Disease

SPSS: Statistical Package for Social Science

SSA: Sub Saharan Africa

STI: Sexually Transmitted Infection

VIA: Visual Inspection with Acetic acid

VILI: Visual Inspection with Lugol's Iodine

WHO: World Health Organization

CHAPTER 1: Introduction

1.1 Background

Cervical cancer is a cancer develops at the neck of the womb which is due to the abnormal growth ofcells that have the ability to invade other part of the body (1).It is almost always caused by human papilloma virus (HPV), specifically strains HPV 16 and HPV 18(2-4).Persistent infection with specific types of HPV may lead to precancerous lesions. If untreated, these lesions may progress to cervical cancer, but this progression usually takes many years (15 to 20 years to develop in women with normal immune systems (5).

The progression to precancerous lesion can take only 5 to 10 years in women with weakened immune systems, such as those with untreated HIV infection (5).These is due to HIV infected women are immunosuppressed with possible co infection with different strains of HPV. This group of people is also more likely to have risky sexual practices, unprotected sex beginning at a young age involving multiple partners, tobacco use, which has been identified as a risk factor for acquiring HPV in HIV infected women (5).Another risk factors for acquiring CC are multiple pregnancies and long term use of oral contraceptives (6).The disease is about 7.9 times more common in HIV infected women than none infected ones (3-8).

With approximately 528,000 new cases occurring each year worldwide,each year an estimated 275,000 women die from the disease with around 86% of the cases occurring in developing countries, and it represents 13% of all female cancers. SSA is the countries with the highest incidence of cervical cancer in the world (1-2). This entirely preventable disease is the second largest cancer killer of women in low and middle-income countries including Ethiopia with most women dying in the prime of life (9).

To tackle cervical cancer effectively, screening programs have a vital role in cervical cancer prevention allowing for early detection and treatment(10).Cervical cancer screening is the systematic application of a test to identify cervical abnormalities in an asymptomatic women population (10).The screening and diagnosis is using detecting service technologies such as, Pap smear test, VIA, VILI, HPV DNA and liquid based cytology LBC (5).Cervical cancer screening coverage in developing country is very low. As evidences show that socio-demographic factors, reproductive history of women, knowledge and perception about the disease were associatedwith utilization of cervical cancer screening service (9).

1.2Statement of the problem

Cervical cancer prevention is a public health priority in Ethiopia especially among HIV-infected women. In Ethiopia 27 million women aged 15 and above are at risk of developing cervical cancer. After breast cancer, cervical cancer is most frequently found in Ethiopian women, and has the highest mortality rate compared to other cancers. In this country current estimates indicate that every year 7095 women are diagnosed with cervical cancer and 4732 die from the disease. According to WHO data 2014 cervical CA is from the top 20 causes of death in Ethiopia, and ranks Ethiopia 34th in the world (11).

Ethiopia is a country with high prevalence of HIV/ AIDS and early initiation of sexual intercourse (according WHO 2014 data adult prevalence of HIV/AIDS in Ethiopia is 1.15% Increment of those high risk factors for cervical cancer together with lower socioeconomic status increases prevalence of cervical cancer in this country.

Cervical cancer screening reduces morbidity and mortality by more than 80%(12, 13).Evidence shows that early detection through cervical Pap smears has had a significant impact on the incidence and mortality associated with cervical cancer in many developed nations.This success has been attributed to greater access to healthcare, increased uptake of cervical cancer screening, and increased awareness of screening practices among women in these developed nations (14, 15).

On the other hand, screening activities in many developing areas including Ethiopia have failed to decrease cervical cancer incidence and mortality due to low utilization and follow-up of screening (16).Lack of awareness and deep-seated stigma associated with the disease also pose significant barriers to access help (9)

Ethiopia adopted WHO recommendation and recommended women to begin cervical cancer screening three years after initiation of sexual intercourse according to the guideline.And FMOH of Ethiopia supported the integration of cervical cancer prevention services within selected HIV/AIDS centers

Despite this cervical cancer screening coverage in Ethiopia is very low among general women which 1.6% for urban and 0.4% for rural (14, 15).Its screening coverage as part of HIV was also very low, only covers less than 1 % even though those groups are at higher risk (17, 18, 19).

The project “pink ribbon red ribbon(worldwide “sea and treat” approach to fight against cancer”) also engaged Ethiopia as a fourth country of focus in 2015 together with FMOH it scaled up the service to 19 sites which currently offer the screening and treatment service, trained 52 health staff with sea and treat approach, educate women about cervical cancer screening. Even though different interventions are administered screening service utilization among HIV positive and HIV negative women was reach at the minimum level of planed achievement(14).

As previous studies conducted in Ethiopia the major factors associated with low prevalence of screening are socio-demographic factors like (age, level of education, income, marital status, place of residence etc.), reproductive history of women like age at first sexual intercourse, parity, family history of CC, knowledge about cervical cancer and cervical cancer screening, perceived susceptibility to cervical cancer, perceived benefits and barriers to screening (32, 38, 47, 49).

Extremely few studies are conducted in HIV positive women. And all the available studies are failed to study the association between partner support and CC screening utilization. As there was no previous studies was conducted in the study area so, the aim of this study is to asses and compare cervical cancer screening service utilization and its determinant factors among HIV positive and women with in known HIV status .

1.3 Significance of the study

Cervical cancer is public health priority in Ethiopia as there is high prevalence of cervical cancer and related mortality and morbidity. Emerging research suggests that gynecologic health care including cervical cancer screening is underutilized by HIV-positive women and women in general in Ethiopia. Despite low coverage of screening and high prevalence of the disease there are only limited bodies of researches that elucidate why women population in general was not utilize the service. It is also extremely hard to find studies which depict the factors that influence HIV infected women not to utilize the screening service, even though those groups are at higher risk. So, this study is aimed to assess and compares the prevalence and factors which influence cervical cancer screening service utilization among HIV positive and women with unknown HIV status. comparison of the two groups are very crucial for better understanding of the factors that affect women's cervical cancer screening practice as it provide ample information regarding both groups.

This study will include the variable which was neglected in the previous study which is partner support and its relationship with cervical cancer screening service utilization

The finding of this study is believed to provide useful information to policy makers,so that they can set programs which are important to increase utilization of the CC screening service by all womenand ministry of health will re-engineer programs to increase uptake of screening. Health providers are also in need of information regarding factorsrelated with underutilization CC screening service so; they will use this finding for appropriate intervention in the hospitals and health centers by understanding the gap.It is also believed that the finding of this study will provide baseline information for future researchers.

CHAPTER 2:-Literature review

2.1. Introduction

In contrast to some other types of cancer cervical cancer can normally be effectively treated if it is detected at an early stage and for women with a diagnosis of cervical cancer curative treatment exist with anexcellent survival prognosis (24).Pap smear screening every 3–5 years with appropriate follow-up can reduce cervical cancer incidence up to 80%(17, 21).But screening rates remain low in much of the world especially in developing countries like Ethiopia.

The American Cancer Association (2012) recommended that cervical cancer screening should begin at age 21 and women between the ages of 21 and 29 should have a Pap test every 3 years .For women ages 30 to 65 years, the preferred approach is co testing every 5 years with cytology and HPV testing. It is also possible for women to continue to be screened every 3 years with cytology alone (11).

ACA (2016) approved that the above recommendation is only for average risk women not for HIV infected.This group should have a follow up more frequently. Current HIV treatment guidelines recommend biannual cervical cytology screening following women's initial HIV diagnosis. If both tests are normal, screening can be reduced to an annual schedule (11)

2.2. Prevalence of cervical cancer screening service utilization

The large declines in cervical cancer mortality in developed countries have been attributed to widespread screening, but Cervical cancer in developing countries is continues to be the leading female malignancy because cervical screening is rare (22). There is striking difference of cervical cancer screening service uptake among developed and developing countries, A 2015 analysis of population-based World Health Surveys measured coverage of cervical cancer screening as the proportion of women aged 25-64 who report having had a pelvic exam and Pap smear in the past three years. The analysis indicates that coverage in developing countries is on average 19%, compared to 63% in developed countries, and ranges from 1% in Bangladesh to 73% in Brazil (26).

As a cross sectional study conducted in Portland Jamaica, of 403 women participated approximately 66% (265 out of 403) had screening for Pap smear (28). In contrast to this a cross sectional study conducted in Nepal, Asia revealed that, the coverage rates for cervical

cancer screening services is very low (2.4%) (28).It is common to find low utilization of cervical cancer screening in SSA. As a cross sectional study conducted in Congo among 524 women revealed that only 8.6% women was participate in cervical cancer screening(30).

Other similar study conducted in rural Tanzania among 354 age eligible women revealed that only 22.6 women are participated in screening (21). Another facility based cross sectional study conducted in Kenya among 424 women participants only 17.5% of women ever had screening (25). It is not surprising to find low coverage of screening in Ethiopian, astudy conducted in Ethiopia Mekelle zone in 2015, among 1186 age eligible women which was only 235(19.8%) have been screened for cervical cancer (32). This indicates low coverage of screening in Ethiopia among women with unknown HIV status. This low prevalence of cervical cancer screening service utilization in SSA especially in Ethiopia is worrisome as these countries have high cervical cancer prevalence rates.

Cervical cancer screening is also underutilized by HIV positive women especially in developing countries, despite the risk of acquiring the disease is high. There is also striking difference in CC screening service utilization in developed and developing countries. As cross sectional study conducted in England among 209 women who self-identified as HIV positive, 85.7% reported having had a Pap test in the last three years (33). In contrast with this a study conducted in Texas America revealed 46% of HIV infected women undergo screening in the last three years(34). In regard to developing countries, a cross sectional mixed study conducted in Nairobi Kenya among 387 HIV infected women revealed that 46% of them had screening (35).Coverage of cervical cancer screening in Ethiopia with regard to this group is worrisome. A sectional study conducted in Addis Ababa Ethiopia reports among 335 HIV infected women only 11.5% women undergo screening (36). This implies cervical cancer screening is underutilized by HIV positive women and women in general in Ethiopia because of different factors that disable them not to utilize the service.

2.3. Factors influencing cervical cancer screening service utilization

Cervical cancer prevention program in developing countries have failed to meet their objectives due to logistical, financial and social problems. Furthermore, barriers to screening uptake include a lack of knowledge about the disease, a lack of familiarity with the concept of prevention, the geographical and economic inaccessibility of care, the poor quality of

services and a lack of support from husbands and families (25).other different factors also influence women not to experience cervical cancer screening service utilization.

2.3.1 Associations of women's socio-demographic characteristics and cervical cancer screening service utilization

Extensive body of evidences elucidates Women with different socio-demographic and sexual history have involved in cervical cancer screening very differently. Because this factors enables or discourages women to participate in screening.

Age:-different bodies of studies suggest that age is the main predictor for cervical cancer screening service utilization. as a cross sectional study conducted among 572 African migrants living in United States key findings indicate that age was significantly associated with cervical cancer screening as this study revealed from participants who had involved in Pap smear test 62.3% were those women with age 31-50, this age group were three times more likely to undergo screening than other group (37).Other similar study conducted in Jamaica also reports women in between the age of30-39 years group were almost three times more likely to have ever had a Pap smear compared to women in the youngest age group. This study also revealed that women who were 40-49 years of age were 6.2 times more likely to have ever had a Pap smear compared to women in the 19-29 years age group (28).

The other cross sectional mixed study carried out in Nairobi, Kenya among HIV infected women revealed that Women aged 45 years and above was 2 times more likely to have been screened (35). another cross sectional study conducted in southern Ethiopia arbaminch also reports The odds of ever screening were 8 times higher for those Whose age is ≥30 years than those whose age is <30 years (38).In contrast to this study a cross sectional study conducted in Ghana among 395 women majority of respondents who had ever had screened was younger women.

Education:-As the cross sectional study conducted in rural Tanzania among 354 women, depicts that fewer participants with secondary education or less had screened for cervical cancer compared to those with college education (21).Another similar study conducted in United States revealed 68.2% of screened participants were those attain above high school education (37).

In regard with studies carried out among HIV infected women, asCross sectional study conducted Alabama US, among 145 HIV infected African American women depicts that those women who attain lower education was 3.33 times more likely to have >2 pap smear tests (33).In contrast to this The other similar study conducted in Addis Ababa, Ethiopia among 322 HIV infected women depicts participants having education have 1.2 times more likely to undergo screening level compared to non-educated (36). In contrast study conducted in Nairobi, Kenya among HIV infected women revealed that HIV infected women who have higher level of education was more likely to have screening (35).

Marital status: -A cross sectional study conducted in Portland, Jamaica with sample size of 403 revealed that marital status is significantly associated with cervical cancer screening utilization (28). It reports; of 138 not undergo screening that 78% was single, and married women were two times more likely to be screened than single. Similarly the study conducted in Myanmar, Thailand showed that married women had four times higher than single to uptake the screening service (40).

Similar result with those studies were conducted in Malawi among 381 study participants, married women are more likely to be screened than single, widowed and divorced (41).In contrast to this studies a pilot study conducted in India reports as women become married their participation in screening was decreased (43).indifferent, a study conducted in illa municipality, Tanzania reports marital status was not associated with utilization of cervical cancer screening Services (42).

Income: -a study conducted in Portland, Jamaica revealed that of the women who had never had a Pap smear more than half (56%) of them were women with low socioeconomic status (28). In contrast with those studies a study conducted in Alabama, US among HIV infected women reports women with lower socioeconomic status was 2.47 times more likely to undergo screening and study conducted in illa municipality Tanzania also revealed that women with lower socioeconomic status are more likely to be screened(34,42).

But, another study conducted in Myanmar, Thailand revealed that there is no significant association between income and cervical cancer screening service utilization (40).

As across sectional study conducted in southern Ethiopia arbaminch among 660 currently married women income is significantly associated with cervical cancer screening service utilization. This study depicts the odds of ever screening was 4 times higher for those with

average monthly income ≥1170ETB than those who with average monthly income <1170ETB (38).

Place of residence:-place of residence also affects the participation in cervical cancer screening. It is established that women in the rural areas pointed to the difficulty of accessing clinics due to lack and cost of transportation compared to those living in urban areas (16). Women in rural areas are less likely to participate in cervical cancer screening. The studies conducted in Malawi and Mekelle also depicts this association (41, 32). Unlikely a study conducted in austral among 265 urban,238 rural and 230 remote households revealed that There was no statistically significant difference in the proportions of women from urban (74%), rural (76%), and remote (71%) regions who reported having a Pap smear (43).

Husband support:-as many evidences suggest that partner support is key significant barrier and facilitator for women to undergo cervical cancer screening. The study in England among HIV infected women reports women who gain support from their partners are 4.64 times more likely to undergo screening than their counterparts (33).

Another cross sectional study conducted in Kenya among 290 female participants' reports that higher proportion of women is more likely to be screened for cervical Cancer is where there is male involvement in decision making. The highest proportion of Women who had previously been screened was recorded amongst the group of respondent's where the male partner made decision support (31). Similar with this study a study conducted in rural Tanzania revealed that 77.8 % of the participants involved their spouse in making decision to utilize cervical cancer screening and this was also found to be strongly and positive associated with utilization of the service ($p < 0.001$) (21).

In contrast with this study a pilot study conducted in India among 812 women, revealed that in this country husband is sole decision maker and most married women are less likely to participate in cervical cancer screening as their husband did not allow them to utilize the service (48).similarly a study conducted in Nairobi, Kenya among HIV infected women revealed that Majority 52.1% (49/94) of those who had been screened reported to have not received any support from their partners (43).

2.3.2 Associations of women's reproductive history and cervical cancer screening service utilization

Early initiation of sexual intercourse: - As study conducted in Portland, Jamaica revealed that women who have history of sex before age 16 were 2.4 times more likely to have ever

had a Pap smear compared to women who had sex after age 16 (28).Similarly a pilot study conducted in India depicts women who have history of early initiation of sexual intercourse are more likely to undergo screening (43).

Parity:-Across sectional study conducted in illa municipality Tanzania among 152 participants showed that multiparouswomen were three times more likely to participate in screening than others (42). The other similar study in Portland, Jamaica alsorevealed significantly greater proportion of women who had ever had a Pap (63%) responded that they had multiple lifetime sex partners compared to one-half (50%) of women who had never had a Pap ($P < 0.05$) (28).similarly another study conducted in southern Ethiopia showed that those women who have <5 children were 79% less likely to be screened than those women than those who had ≥ 5 children (38).

Sexually transmitted disease: -A pilot study conducted in India demonstrates women with history of STDs are more likely to undergo screening. This study highlights that as they require a gynecological examination so a smear may have been taken as part of the consultation (43). Similarly the study conducted in northern Ethiopia Mekelle, among 1186 age eligible women depicts that women who have diagnosed with sexually transmitted disease were four times more likely to undergo screening when compared to their counterparts (32)

multiple sexual partner :-As a cross sectional study carried out in illa municipality Tanzania revealed that women with history of multiple sexual partners was two times more likely utilize the screening service than their counterparts(42**).**Similarly a study conducted in northern Ethiopia Mekelle zone revealed that women who have history of multiple sexual partners were 1.635 times more likely to undergo screening when compared to those who have no history of multiple sexual partners(32).

In contrast, the study in England among HIV infected women demonstrated the service is more likely to be underutilized by women having multiple sexual partners (33).similar with this result a study conducted in El Salvador demonstrates that non adherence is more likely related with higher number of lifetime sexual partner (55).A study conducted in Tanzania also approves this association (48).

2.3.3 Association of knowledge with cervical cancer screening service utilization

Different studies were conducted to elaborate the association between women's knowledge and their cervical cancer screening service utilization practice. Almost all except little literatures suggest that there is the need for widespread dissemination of information about Pap smear screening and cervical cancer detection as there is strong association among them. A statistically-significant association existed between women's intentions to be screened for cervical cancer and their knowledge about cervical cancer (14).

As a cross sectional study conducted in Thailand among 666 female migrants showed Migrants with good knowledge about cervical cancer screening were 2.21 times more likely to have cervical cancer screening than those with poor knowledge (40). Similar with this astudyconducted in England among HIV infected women reports those who knowledgeable are 6.52 times more likely to be screened than their counterparts (33).

The study conducted among 354 participants in rural Tanzania revealed that a significant proportion of respondents (75%) with very high level of awareness had been screened for cervical cancer (21). In contrast to this study conducted in Nigeria showed that and the 'aware' group for screening services, only 13.6% had utilized the services (22).

Different studies in Ethiopia also demonstrate that there is significant association between knowledge about cervical cancer and the screening service and screening utilization. As study conducted in northeast Ethiopia Dessie among 620 women revealed that those who are knowledgeable are 11.1 times more likely to be screened than their counterparts (47). at the same time study conducted in northern Ethiopia Mekelle zone reports Women who were generally knowledgeable on cervical cancer screening were 2.355 times more likely to undergo screening when compared to those who were not knowledgeable(32).Similarly a study conducted in Addis Ababa Ethiopia among HIV infected women demonstrates those who are knowledgeable HIV infected women are 3.6 times more likely to be screened(36).

2.3.4 Health belief model

Perceivedsusceptibility: - Is the belief of a person about his/her chances of getting a condition or disease. While in developed countries, people who perceive susceptibility to an illness take preventive actions early, the case is entirely different in most developing countries where preventive actions are usually viewed as an unnecessary practice.

As a cross sectional study conducted in Botswana among 267 participants reports the main reason for not screening is being healthy 72.68 % of women who feel healthy are not screened for cervical cancer. Women who have perceived susceptibility to cervical cancer were 3.2 times more likely to screen for cervical cancer among those with low perceived susceptibility to cervical cancer (45).Similar with this as study conducted in Malawi revealed that the screening service is free of charge nevertheless low perceived susceptibility to cervical cancer amongst women, aged 42 and older, might contribute to limited utilization of cervical screening services. For those who had not been screened, the most frequently-cited reasons from 73.5% respondents included not being sick and having no pain 64%(41).similarly the study conducted in Florida among HIV infected women revealed that low perception of susceptibility is related to underutilization of the screening service(44).Another study conducted in northern Ethiopia Mekellealso reports that women with high perceived susceptibility are 2.225 times more likely to be screened (32).

Perceived benefit: -A person's belief that the new behavior will reduce his/her risk of a disease. The study conducted in Kenya among HIVinfected women revealed that from those who have been screened 94.7% reported that cervical cancer screening was very useful in the prevention of cervical cancer (35). In this study those who perceive more benefits are more likely to undergo screening.

Perceived barriers: - The belief of a person about obstacles that may prevent them from a specific actions study conducted. Evidences suggest that, this factor is associated withutilization of cervical cancer screening service utilization. A study conducted in Myanmar, Thailand revealed that Migrants who had positive perceptions toward perceived threats were 1.57 times more likely to have screening than those who had negative perceptions (40). Similarly two studies in southern and northern Ethiopia revealed that women with positive perception of barriers about the screening are the 6 and 2.256 times more likely to be screened than their counterparts (38, 32).The theory-based study done among university students inSouth Africa showed that students who had a Papanicolaus test showed a significantly lower score in barriers to being screened compared to students who did not have the test (46).

2.4 Conceptual framework

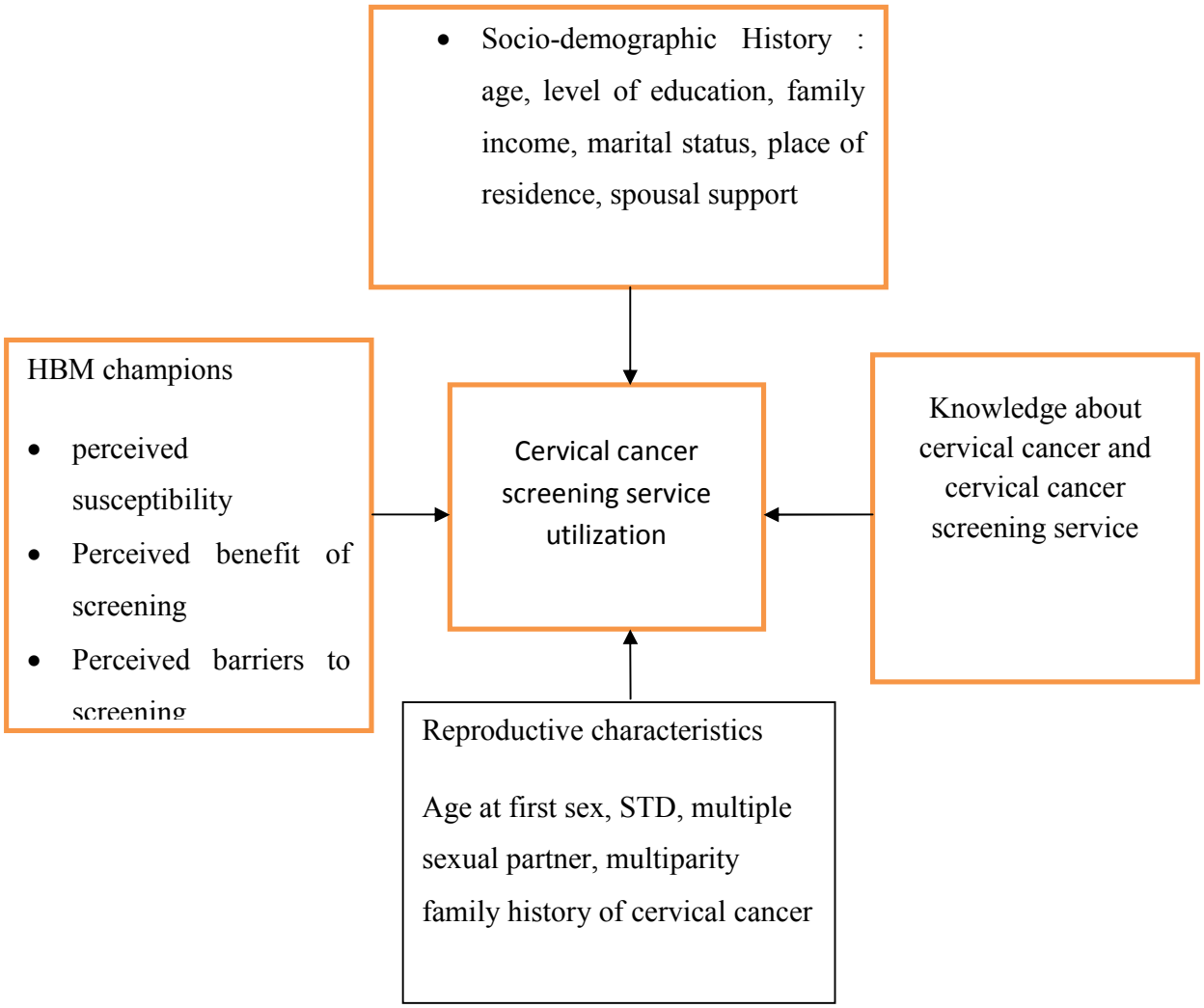

Figure 1: conceptual frame work adopted from HBM about factors associated with CC screening utilization and modified by reviewing previous literatures carried out in Ethiopia (32, 38)

CHAPTER 3:- OBJECTIVES

3.1 General Objective

To assess and compare cervical cancer screening service utilization and associated factors among HIV positive and women with unknown HIV status at Alamata generalized hospital,Tigray Ethiopia ,2018.

3.2 Specific objective

-To assess the prevalence of cervical cancer screening service utilization among HIV positive and women with unknown HIV status atAlamata generalized hospital, Tigray Ethiopia 2018.

-To identify factors associated with cervical cancer screening service utilization among positive and women with unknown HIV status inAlamata generalized hospital,Tigray,Ethiopia 2018

-To compare prevalence of cervical cancer screening service utilization and determinant factors among all eligible HIV positive and womenwith unknown HIV status at Alamata generalized hospital, Tigray Ethiopia 2018.

Chapter 4: Methodology

4.1 Study area

The study was conducted in AlamataWoreda.Which is located in southern zone of tigray bordered by Raya Azebo in the north,ofla in the west and Amahararegional state in the south and Afar regional state in the east at 12°15'N latitude and 39°35'E longitude. It is situated 600 KM north of Addis Ababa and 180 KM south of Tigray Regional capital city,Mekelle.It has 10 tabias namely Selemwuha,Limaat,SelamBkalsi,KuluGizeLemelem,Garjale,Ta'o,La'elayDayu,Tsetsera and Merewa and has a total population of 33, 214, of whom16,140 are men and 17,074 are female.This woreda has 1 hospital 6 health centers and 15 health posts.From a total of 4890 HIV positive people in this woreda, 3000 of them are women and 1500 of the women gain ART service in Alamata general hospital. Alamata Health Bureau was responsible for overall health activity in the Town.Only Alamata general hospital which is found in the center of the woreda provides cervical CA screening service.

4.2 Study design and period

Comparative facility based cross sectional study was used from March1 to May 15, 2018.

4.3populations

4.3.1 Source population

All women with unknown HIV status coming to Alamatageneralized hospital for other services

All HIV positive women coming to Alamata generalized hospital for ART service

4.3.2 Study population

All age eligible women with unknown HIV status for cervical cancer who are available in Alamatageneralized hospital to gain other services at the time of the study.

All age eligible HIV positive women for cervical cancer who are available in Alamata generalized hospital to gain ART services at the time of the study.

4.4 Eligibility

4.4.1 Inclusion criteria

Women above the age of 21

4.4.2 Exclusion criteria

1. Women who are critically ill and unconscious at the time of the study

2. Women who have had their cervix removed

4.5 Sample size determination and sampling technique

4.5.1 Sample size determination

The sample size was calculated with two population proportion formula considering the prevalence in both outcome variable and determinant factors by Epi Info version 7.2.0.1 Fleiss W/CC method using the following assumptions.

r=n1/n2=1:1

$Z_{\alpha/2=}$1.96(value of standard normal distribution curve corresponding to confidence interval 95%)

Zβ=0.84(value of standard normal distribution curve corresponding to 80% power

p1=percent outcome 1

p2=percent outcome 2

Precision 5% at 95% confidence level

Since the sample size calculated for specific objective one prevalence of cervical CA screening service utilization) accommodates the largest sample size by using the following value

p1= 11.5 % prevalence of cervical CA screening service utilization among HIV positive women in Addis Ababa (36).

p2= 19.8 % prevalence of cervical CA screening service utilization among women with unknown HIV status in Mekelle(32) then the calculated sample size was 648.After adding non response rate of 10% the minimum total sample size considered to undertake this study was 714(357 for HIV positive women and 357for HIV negative women).

4.5.1 Sampling procedure: -samples wereselected by using systematic random sampling method until the required sample size was fulfilled.K is calculated by dividing total women available at the required outpatient clinics in the hospital per month to the required sample size. In part of

women with unknown HIV status : total number of women coming to medical OPD,surgical OPD, gynecology and obstetrics OPD and ANC was considered which was 1200:medical OPD(250), surgical OPD (150),gynecology and obstetrics OPD(350) and ANC (450))k for this group is 1200/357which was 3. Regarding with HIV positive women total women who use ART available per month was 1500 so K for this group is 1500/357 which was 4.So samples were selected every 3 interval for women with unknown HIV status and every 4 interval for HIV positive women.Samplesfrom unknown status was also proportionately allocated after information about client flow in medical OPD,surgical OPD,gynecology and obstetrics OPD and ANC per month was gained.Therequired sample in each four OPD is medical (74), surgical (45), obstetrics and gynecology (104) and ANC 134.

Schematic representation of sampling technique

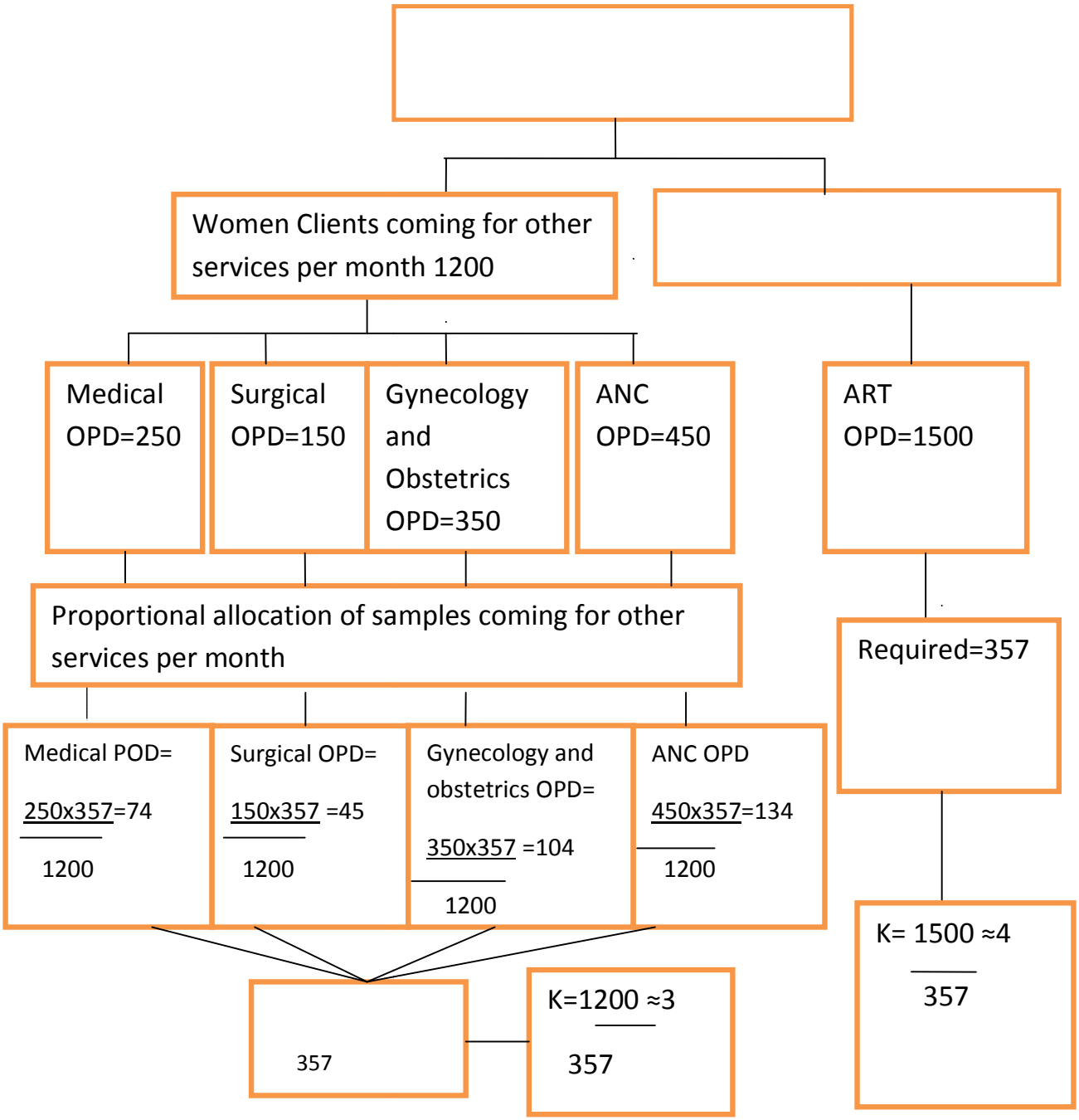

Figure 2: schematic representation of sampling technique among HIV positive and women with unknown HIV status inAlamata generalized hospital, Tigray, Ethiopia

4.6 variables of the study

4.6.1 Dependent variable

Cervical cancer screening service utilization

4.6.2 Independent variables

- Socio-demographicfactors: -Age

Level of Education

Marital status

Family income

Place of residence,

Partner support

- Reproductive history of women:Age at first sexual intercourse

Parity

Family history of cervical cancer

History of STDs. history of multiple sexual partners

- Knowledge about cervical cancer and screening service
- Champions of health belief model

Perceived susceptibility of cervical cancer

Perceived barriers and Perceived benefits of CC screening

4.7 Operational definitions

Good knowledgeable of cervical cancer: Those respondents who score equal to and above the mean score for the cervical cancer knowledge assessing questions (38, 44).

Poor knowledgeable of cervical cancer: Those respondents who score below mean score for the cervical cancer knowledge assessing questions (32, 38).

High perceived susceptibility: If respondents received two and more of the mentioned susceptibility questions (32, 38)

Low perceived susceptibility: If respondents received one and less of the mentioned susceptibility questions (32).

High perceived benefit: If the respondents received equal to and more than the median score of perceivedbenefit questions (32, 38)

Low perceived benefit: If the respondents received less than the median score of perceivedbenefit questions (32, 38).

High Perceivedbarriers: If respondents received equal to and more than the median score of the mentioned barrier positively (32, 38)

Low perceived barriers: If respondents received more than the median score of the mentioned barrier negatively (32, 38).

Utilized: If respondents have ever had screened with in the last three years (38).

4.8 Data collection tool

Data was collected by structured interviewer administered questioner. Thequestionnaire has five sub parts namely socio-demographic characteristics, reproductive history, knowledge related, health belief model questions and screening practice questions. The questioner was adopted from health belief model questions for cervical cancer screening and modified from previous study questions in Ethiopia(32, 38). The questioner initially developed in English and later translated into local language by legal personnel who is an expert in English and local languageTigrigna

then retranslated back to English version by another person for appropriateness of tools, language clarity and accuracy.

4.9 Data collection procedure

Data was collected by 3 BSc nurses, 3 midwives and two supervisors (BSc nurse or BSc midwife) after training was given before the actual data collection for three days. In addition to that there was continuous follow up and supervision by principal investigator throughout the data collection period.

4.10Data quality management

To ensure quality of data,training was given for data collectors and supervisor for three days prior to study period on objectives of the study, how to collect data, regarding ethical issues, and on data quality.The questionnaire was also pretested in 5% of sample size in Alamatahealth center one weak prior to the actual data collection to determine its appropriateness on the local context.The finding of the pretest was incorporated to modify and clarify the collection tool before actual data collection.During data collection; Supervisorshad routine checkups for its completeness and scientific soundness. Additionally, the principal investigator checked the filled questionnaire and gave feedback for supervisorsdaily.

4.11Data analysis

The data was first checked for completeness and entered to Epi-data version3.1.1 to be cleared then transported to SPSS version 23 for analysis. Descriptive statistics like Frequency distribution, ratio, means, percentages and standard deviation was calculated.In order to investigate relative importance of the variables in relation to the dependent variable bivariate analysis was used. Those become significant was fitted together to multivariate logistic regression to explore association between dependent and independent variables and to control confounding.Statistical significance was interpreted using Odds ratio with 95% confidence interval and P value <0.05.The result was presented using texts, tables, figures and diagrams.

4.12Ethical clearance

Ethical clearance was obtained from AAU-college of health science department of nursing and midwifery IRB (institutional review board) of research committee and official letter was written to AlamataWoreda health bureau. Permission letter was written from Alamataworeda health bureau to the Alamata generalizedhospital for their cooperation and participation. Moreover, a

written consent was obtained from the study subjects before interviewing. All respondents have the right to withdraw from the study at any time without any consequences. Confidentiality was assured and no personal details was recorded or produced on any documentation related to the study. No one was obliged to participate unless otherwise agreed to take part.

4.13 Dissemination of the finding findings

The final report of this study was written scientifically and submitted to Addis Ababa University, college of health science, department of nursing and midwifery. The copy of report of the analysis result will be disseminated to all relevant bodies like FMOH, Alamatahospital and Alamatahealth bureau after the thesis is approved by examiners. As per the laws and regulation of the country, the study result will be presented and effort will be made to disseminate through publication.

CHAPTER 5:- Result

5.1 Socio-demographic characteristics of participants

A total of 714eligible participants, (357women from HIV positive individuals and 357 from women with unknown HIV status) were recruited in this study. Making an overall response rate of 98.5%(98.6% from women with unknown status and 98.3% from HIV positive).From the overall participants 7of them were refused to participate in this study while four of the study units were failed to complete the questioner. Table 1 describes the proportion of socio-demographic characteristics of the study population. Age was distributed in normal pattern with the mean age ±SDof HIV positive was 33.61±8.810 and 31.51±8.966 for women with unknown HIV status individuals respectively. Majority of women with unknown HIV status were found in the age group of 21-30 and HIV positive women were found in the age group of 31-40.Concerning marital status more than half of both groups were married with 181 (50.6%) and 195(54.5%) HIV positive and women with unknown HIV status respectively.

Table 1:-Socio-demographic characteristics of all eligible HIV positive and womenwith unknown HIV status for cervical CA screening at Alamata generalized hospital,Tigray Ethiopia 2018

Variable		HIV positive n=357(50%)	Unknown status women N=357(50%)
Age	21-30	140(39.1%)	208 (58.3%)
	31-40	145(40.6%)	94(26.4%)
	41-50	55(15.7%)	44(12.3%)
	51-65	17(4.6%)	11(3%)
	Mean ± SD	33.61±8.810	31.51±8.966
Marital status	married	181 (50.6%)	195(54.5%)
	single	176(49.4%)	162(45.5%)
Educational status	No formal education	143(40%)	108(30.2%)
	Primary education	90(25.3%)	93(26.0%)
	Secondary education	74(20.7)	81(22.8%)
	College and above	50(14%)	75(21.0%)
Occupational status	House-wife	135(37.7%)	164(45.9%)
	Self-employed	155(43.4%)	133(37.4%)
	Government-employed	67(18.9%)	60(16.7%)
Family'smonthly income	<1000	100(28.1%)	79(22%)
	1000-2000	114(32%)	133(37.4%)
	>2000	143(39.9%)	145(40.6%)
Place of residence	urban	231(64.8%)	221(61.9%)
	rural	126 (35.2%)	136(38.1%)

.

In both of the groups, high numbers of women with the proportion of 40% HIV positive and 30.2% from unknown HIV status were illiterate preceded byacquired primary education which accounted 25.3% and 26% respectively.

Regarding occupational status of participants, majority of women in HIV positive and negative status group were house-wife with proportion of 135(37.7%) HIV positive and 164(45.9%) unknown status and majority of participants were in higher economic status in both HIV positive and unknown HIV status women with the proportion of 39.9% and 40.6% respectively .While considering place of residence of participants number of women in both group lives in urban area accounted 64.8% and 61.9 % of HIV positive and negative respectively..

5.2 Reproductive history of participants

The Mean age at first sexual intercoursewas 17.70 for HIV positive women and 18.08 for unknown HIV status women and more than half of women in both group started sexual intercourse since they were <18 which accounted 59.1 and 50.1 for HIV positive and unknown status women respectively.Majority of the women in both groups claimed that they had no history of multiple sexual partners with the proportion of 65.1% and 79.7% in women of HIV positive and unknown HIV status women.

Regarding gaining support from partner or husband, majority of the women had not gain partner or husband support to check their gynecological health both in HIV positive and unknown HIV status women groups which accounted 68.7% and 76.5% respectively. History of having STI is also rare in both groups with the proportion of 38.4% and 15.7 % in HIV positive and unknown HIV status women respectively. Only 28.8% and 21.4% had ever use condom during sexual intercourse both in HIV positive and unknown HIV status women groups.

Information related to given birth, majority of women both HIV positive and unknown HIV status women groups had given birth at least once with the proportion of 64.8% and 52% respectively. From those ever given birth majority of them with proportion of 72.2% and 93.8% both in HIV positive and unknown HIV status women had <5 children or they are not multipara.

Table 2:-Reproductive history of all eligible HIV positive and unknown HIV status women of alalmata generalized hospital, Tigray Ethiopia 2018

Variable		HIV positive	Unknown HIV status
Age at first sex	<18	211(59.1%)	179(50.1%)
	>=18	146(40.9%)	178(49.9%)
	Mean ± SD	17.70± 2.979	18.08± 3.638
having multiple sexual partner	Yes	125(34.9%)	72(20.3%)
	No	232(65.1%)	285(79.7%)
Partner support	yes	112(31.3%)	84(23.5%)
	No	245(68.7%)	273(76.5%)
History of STI	yes	137(38.4%)	56(15.7%)
	No	220(61.6%)	301(84.3%)
Condom use	yes	103(28.8%)	76(21.4%)
	No	254(71.2%)	281(79.6%)
Given birth	yes	245(68.7%)	186(52%)
	No	112(31.3%)	171(48%)
Parity	<5 children	258(72.2%)	335(93.8%)
	>=5 children	99(27.8%)	22(6.2%)

5.3 Information about cervical cancer and cervical cancer screening and the source of information

Majority of women with positive HIV status were aware about cervical cancer and cervical cancer with proportion of 73% and 72.2% respectively. More than half of women with unknown HIV status have no information about cervical CA and its screening with proportion of 50.5% and 50.2% respectively.

The major source of information about cervical cancer and cervical cancer screeningin HIV positive women groups were health professionals which accounted 58% and 61.6%., consideringunknown HIV status women TV accounted the large number with 56% and 60% respectively.

Table 3:- Information about cervical cancer and cervical cancer screening among age eligible HIV positive and unknown HIV status women in Alamatageneralized hospital, Tigray,Ethiopia 2018.

Variables		HIV positive	Unknown HIV status
Heard about cervical CA	Yes	261(73%)	177(49.5%)
	no	96(27%)	180 (50.5%)
Source of information	radio	32(12.2%)	25(14.3%)
	TV	78(29.8%)	99(56%)
	health professionals	151(58%)	53(29.7%)
Heard about cervical CA screening	yes	203(72.2%)	141(50.2%)
	no	78(27.8%)	140(49.8%)
Source of information	radio	19(9.4%)	21(14.6%)
	TV	59(29%)	85(60%)
	Health professionals	125(61.6%)	36(25.4%)

5.4 Knowledge about cervical cancer and its screening among HIV positive and unknown HIV status women

Regarding total knowledge status of participants,only 99(27.8%) HIV positive women and 84(23.5%) unknown HIV status women have good knowledge. With concern of knowledge related to symptom of cervical CA only 71(19.9%) HIV positive women and 41(11.4%) unknown HIV status women have good knowledge,and majority of them which means 183(51.2%) and 252(70.5%) HIV positive and women with unknown status did not know any one of the symptoms respectively.

Known risk factors that predispose for cervical cancer were also asked to both group of the respondents, majority of them 216(60.5%) HIV positive women and 255(71.5%) unknown HIV status women did not know any risk factor.

Table 4:-knowledge about cervical CA and cervical CA screening service utilization among HIV positive and unknown HIV status women in Alamata generalized hospital, Tigray Ethiopia 2018.

Variables		HIV positive	UnknownHIV status
Total knowledge about cervical CA and its screening	Good knowledge	99(27.8%)	84(23.5%)
	Poor knowledge	258(72.2%)	273(72.5%)
Knowledge related to symptom of cervical cancer	Good knowledge	71(19.9%)	41(11.4%)
	Poor knowledge	103(28.8%)	64(18.1%)
	Do not know	183(51.3%)	252(70.5%)
Knowledge about risk factor of cervical CA	Good knowledge	109(30.6%)	74(20.7%)
	Poor knowledge	32(8.9%)	28(7.8%)
	Do not know	216(60.5%)	255(71.5%)
Knowledge about cervical cancer prevention methods	Good knowledge	100(28.1%)	73(20.3%)
	Poor knowledge	39(11%)	15(4.3%)
	Do not know	218(60.9%)	269(75.4%)
Knowledge about interval of screening	Good knowledge	28(7.8%)	14(3.9%)
	Poor knowledge	24(6.8%)	50(13.9%)
	Do not know	305(85.4%)	293(82.2%)
Who should be screening	All women of 21years and above	90(25.3%)	84(23.5%)
	Others (do not know)	267(74.7%)	273(76.5%)
Fatality of cervical CA if not screened and treated early	Yes	192(53.7%)	80(22.4%)
	No(do not know)	165(46.3%)	277(77.6%)
Availability of institution in Alamata(is it avail?)	Yes	114(32%)	64(17.8%)
	No(do not know)	243(68%)	293(82.2%)
Curability of cervical CA in its earlier stage	Yes	149(41.6%)	90(25.3%)
	No(do not know)	208(58.4%)	267(74.7%)
Asymptomatic behaviour of cervical CA	Yes	109(30.6%)	76(21.4%)
	No(do not know)	248(69.4%)	281(78.6%)
Is CCA screening prevent development of advanced CCA	Yes	161(45.1%)	99(27.8%)
	No (do not know)	196(54.9%)	258(72.2%)

The other knowledge part which was assessed for both groups of respondents were knowledge about prevention methods of cervical cancer, and majority of HIV positive and unknown HIV status women did not know any of the prevention methods with proportion of 217(60.9%) and 269(75.4%) respectively. With regard to knowledge about interval of screening,most of respondents from both groups were not knowledgeable about it with the proportion of 309(86.5%)HIV positive and 297(83.3%) unknown HIV status women.

Majority of respondents from HIV positive and unknown HIV status women groups with proportion of 267(74.7%) and 273(76.5%) did not know about who are illegible for cervical CA screening. Regarding fatality of cervical CA, more than half of HIV positive women 192(53.7%) were know about the fatality of cervical CA if not screened early but majority of women with unknown HIV status with proportion of 277(77.6%) did not know about this.

Knowledge about curability of CA in its earliest stage was also part of knowledge assessment question; only small numbers of HIV positive and unknown status womenwere knowledgeable about its curability with proportion of 149(41.6%) and 90(25.3%) respectively. Majority of participants 248(69.4%) and 281 (78.6%) from HIV positive and unknown status did not know about the asymptomatic character of cervical CA and also did not know about the role of early cervical CA screening in prevention from development of advanced stage with proportion of 195(54.9%) and 258(72.2%) respectively.

Concerning with availability of service in the study area, only 114(32%) and 64(17.8%) of HIV positive and unknown HIV status women were knowledgeable about this.

5.5 Health belief model

Very small amount of women in both groups with proportion of 96(27.8%) from HIV positive and 53(14.9%) from unknown HIV status women have highly perceivedthat they are vulnerable for cervical CA. Regarding perceived benefit of CCA screening high proportion of women in both HIV positive and unknown HIV status groups have low perceived benefit of screening for cervical CA with the proportion of 202(56.6%) and 240(67.2%) respectively. In concern with perceived barrier of screening more than half of women in both groups have low perceived barrier for cervical cancer screening with proportion of 189(53%) from HIV positive and 216(60.5%) from unknown HIV status women. majority of participants in both groups agreed that being healthy was the barrier for not utilize the service than other barriers which accounted 170(47.7%) and 11(31.0%) from HIV positive and negative women respectively.

Table 5: perception about CCA and CCA screening among HIV positive and unknown HIV status women in Alamata generalized hospital, Tigray Ethiopia 2018

Variable		**HIV positive women**	**Unknown HIV status women**
Perceived susceptibility of CCA	High perceived susceptibility	96(27.8%)	53(14.9%)
	Low perceived susceptibility	261(72.2%)	304(85.1%)
Perceived benefit of CCA screening	High perceived benefit	139(38.8%)	100(28.1 %)
	Low perceived benefit	218(61.2.6%)	257(71.9%)
Perceived barrier of CCA screening	High perceived barrier	125(34.9%)	141(39.5%)
	Low perceived barrier	232(65.1%)	216(60.5%)

5.6 utilization of cervical CA screening service

The overall prevalence of cervical cancer utilization in this study was very low which accounted 19.2 with proportion of 7.8% from HIV positive and 11.4 % from women with unknown HIV status.

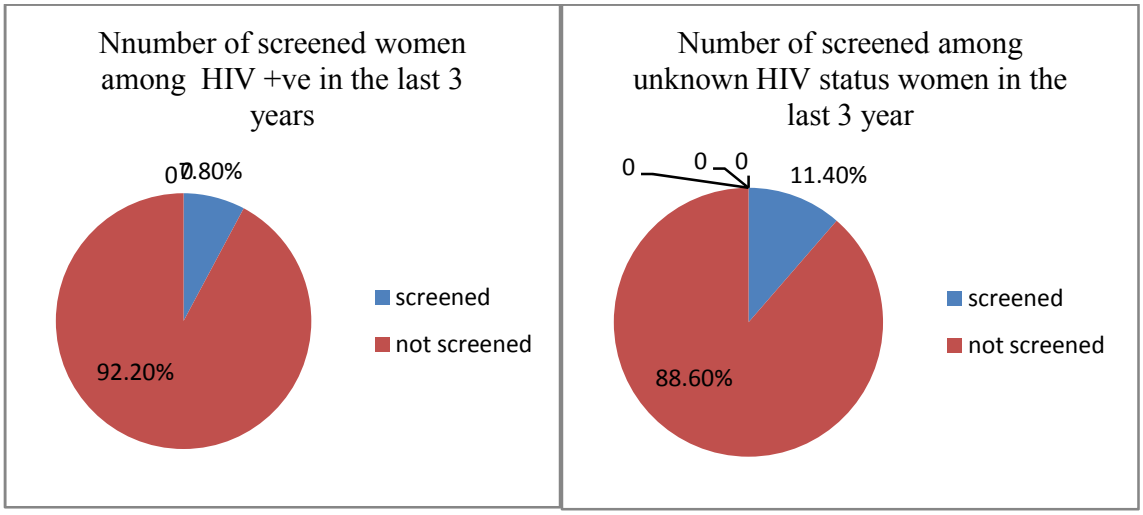

Fig 6:-prevalence of cervical CA screening utilization among HIV positive and unknown HIV status women in Alamata generalized hospital, Tigray, Ethiopia2018

5.7Factors associated with cervical cancer screening service utilization among HIV positivewomen

During bivariate logistic regression family's monthly income, having history of STI, parity, knowledge about cervical CA and screening and perceived susceptibility was significantly associated with p value of less than 0.05.Those variables show significant association became candidate for multivariate logistic regression out of total forty seven independent variables.

After multivariate logistic regression analysis was conducted,two variables (family's monthly income and having history of STI) was excluded as they were insignificant but parity{3.87(1.264, 11.891)},knowledge {4.75(1.534, 14.738)} and perceived susceptibility {3.9(1.255, 12.103)} remained significant or show strong association with cervical cancer screening service utilization with p value of less than 0.05.

Table6: factors associated with cervical CA screening service utilization among HIV positive women in Alamata generalized hospital, Tigray Ethiopia 2018

Variables		%of screened	% of not screened	COR	AOR
Families monthly income	<1000	11(11.4%	87(88.6%)	1	
	1000-2000	3(2.2%)	111(97.8%)	0.85(0.333-2.152)	1.07(.322,3.582)
	>=2000	14(9.8%)	128(90.2%)	4.79(1.034,22.208)*	4.06(.732,22.512)
Having history of STI	yes	20(15.5%)	111(84.5%)	4.9(1.992,13.950)**	3.14(0.965,10.23)
	no	8(3.4%)	218(96.6%)	1	
Parity	>=5	18(26.2%)	46(73.8%)	5.5(1.953,12.815)**	3.88(1.264,11.891)**
	1-4	12(6.6%)	169(93.4%)	1	
Knowledge about cervical CA and careening	Good knowledge	20(20.5%)	79(79.5%)	7.9(3.178,22.592)**	4.75(1.534,14.738)**
	Poor knowledge	8(3.0%)	250(97.0%)	1	
Perceived susceptibility	High perceived	18(17.5%)	84(82.5%)	5.24(2.055,12.745)**	3.9(1.255,12.103)**
	Low perceived	10(4.0%)	245(96.0%)	1	

*=p-value 0.05 and **=p-value <0.01

5.7 Factors associated with cervical cancer screening service utilization among women with unknown HIV status

The procedure like we did for HIV positive groups was conducted to elucidate the association among dependent and independent variables. During bivariate logistic regression from the total independent variables eight of them; family's monthly income, place of residence, history of having STI, history having multiple sexual partners, partner support, knowledge, perceived susceptibility and perceived benefit show significant association with cervical CA screening service utilization.

Those considered significantly associated in binary logistic regression again fitted together to multiple logistic regression but only having history of multiple sexual partner {AOR =5.06 95% CI = (1.83-13.978)}, knowledge {AOR=4.8 95% CI = (1.172-19.832)} and perceived susceptibility {AOR=3.2 95% CI= (1.129-9.137)} remained significant.

Table7: Factors association with cervical CA screening utilization of cervical CA in women with unknown HIV status in Alamata generalized hospital, Tigray Ethiopia2018

Variables		%of screened	% of not screened	COR{95%CI}	AOR{95% CI}
Families monthly income	<1000	13(16.1%)	66(83.9%)	1	
	1000-2000	5(4.6%)	127(95.2%)	0.91(0.389,2.134)	1.02(0.342,3.058)
	>=2000	22(14.9%)	123(85.1%)	3.505(1.244,9.872)*	2.08(0.631,6.831)
PLACE OF RESIDENCE	urban	30(15.4%)	168(84.6%)	2.66(1.150,6.147)*	0.42(0.105,1.680)
	rural	10(6.4%)	149(93.6%)	1	
Having history of STI	yes	18(31.8%)	38(68.2%)	5.725(2.562,12.584)**	2.34(0.863,6.330)
	no	23(7.6%)	278(92.4%)	1	
Having history of multiple sexual partner	yes	25(36.4%)	45(63.6%)	10.07(4.549,22.678)**	5.06(1.83,13.978)**
	no	15(5.3%)	272(94.7%)	1	
Partner support	yes	24(28.8%)	60(71.2%)	6.425(2.898,13.615)*	2.7(0.918,7.997)
	no	16(6.0%)	257(94.0%)		
Knowledge about cervical CA and screening	Good knowledge	27(29.6%)	63(70.4%)	7.744(3.439,16.786)**	4.8(1.172,19.832)*
	Poor knowledge	14(5.2%)	253(94.8%)	1	
Perceived susceptibility	High perceived	19(35.7%)	34(64.3%)	7.163(3.256,16.163)**	3.2(1.129,9.137)*
	Low perceived	22(7.1%)	282(92.9%)	1	
Perceived benefit	High perceived	20(20.3%)	80(79.7%)	2.962(1.395,6.247)**	0.407(0.13,1.271)
	Low perceived	20(7.9%)	237(92.1%)	1	

*=p-value 0.05 and **=p-value <0.01

CHAPTER 6:-Discussion

This study provides ample information regarding prevalence of cervical CA screening service utilization and associated factors among HIV positive and unknown HIV status women in Alamata generalized hospital Tigray Ethiopia.

The overall prevalence of cervical CA screening service utilization in this study was very low. While we compare the prevalence in HIV positive and unknown HIV status women groups in this study, out of 357 HIV positive and 357 unknown HIV status women participants only 28 (7.8) and 41 (11.4%) was screened respectively, this means the prevalence of screening among unknown HIV status women groups was higher than that of HIV positive women groups.This is supported by the result in analysis of population-based World Health Surveys which depicts that the prevalence of screening in part of HIV positive women is lower than those unknown HIV status women groups (26).

The prevalence of cervical CA screening among unknown HIV status women in this study was lower than the studies conducted in Rural Tanzania, Kenya, Northern Ethiopia, Mekelle which reported that the prevalence of cervical CA screening utilization was 22.6%, 17.5% and 19.8% respectively(21,35,32).This might be due to socio-economical and geographical differences among the study areas and limited services providing health facility in the study area and lack of awareness of women about the availability functional service which provide cervical CA screening in this area.

And it was much lower than the findings elucidated from the studies carried out in Brazil (73%) and Portland Jamaica which was 66% (33, 34). This might be due lack of familiarity with the concept of prevention, the geographical and economic inaccessibility of care and the poor quality of services in the current study as compared to the developed countries.

In contrast to the above reports the prevalence of screening among unknown HIV status women in this study was higher than the studies conducted in Congo, and Nepal; Asia, which revealed that the prevalence in part of HIV negative women, was 8.6 and 2.4 respectively(30,29). This might be due to study year difference as advancement of sea and treat approach aimed at sustainable programs that allow women and girls to access the care and the need to thrive by

educating women and scaled up the service in Ethiopia in general and in the study area in particular after 2015.

While we have seen the prevalence of screening among HIV positive women in this study it is much lower than the studies among HIV positive women done in England, Texas America, Nairobi Kenya and Addis Ababa Ethiopia which reportedthat 85.7%, 46%, 46% and 11.5% respectively (33, 34, 45, 36).This might be due to low level of awareness of HIV positive women about HIV is one of the risk factor for acquiring cervical CA related to low induction of health education regarding cervical CA by health professionals and lack of formal policies and programs which makes the screening mandatory for HIV positive women in the study area..

The key factors associatedwith utilization of cervical cancer screening service among HIV positive women in this study was parity, knowledge about cervical CA and its screening and perceived susceptibility for cervical CA.In this study HIV positive women who have >= 5 children have nearly 4 times more likely to utilize cervical CA screening service than their counter parts. this result was slightly higher than the same study carried out in Illa municipality Tanzania which revealed that multiparous women was 3 times more likely to utilize the service than their counter parts(42).this might be due to difference in the knowledge of women related to the possibility of multiparty in increasing the chance of acquiring cervical CA.

The second key determinant factor for utilizing cervical CA screening service among HIV positive women was knowledge about cervical cancer and its screening. In this study HIV positive women who have good knowledge were 4.75 times more likely to utilize the service than those who have poor knowledge.This is supported by the study conducted in England among HIV infected women in which those who knowledgeable are 6.52 times more likely to be screened than their counterparts (33).Thedifference might be due to the women in this study areas were not engaged in giving priority for prevention approaches.

The result of association between knowledge and cervical CA screening utilization in this study was higher than the result from the same study conducted in Dangoretti, Nairobi city county, Kenya and Addis Ababa among HIV infected women individuals which revealed that women with good knowledge was 2 and 3.6 times more likely to utilize the service than their

counterparts respectively (35, 36).This may be due to continuous education by health professionals was being advocated.

The third key factor associated with cervical CA screening utilization among HIV positive women was perceived susceptibility. This study revealed that HIV positive women with high perceived susceptibility were nearly 4 times more likely to utilize the service than those who perceived low.This is supported by the study conducted in Florida among HIV infected women reported that low perception of susceptibility is related to underutilization of the screening service (33).

The report from the current study about the association of perceived susceptibility and cervical CA screening service utilization was higher than the study conducted in Northwest Ethiopia, Gondar which reports they were 2.85 times more likely to utilize the service than their counterparts. This may be due to the difference in the time of study(49).

While we did analysis for unknown HIVstatus women there werethree determinant factors which have significant association with cervical cancer screening service utilization, these are having history of multiple sexual partners,and knowledgerelated to CCA and CCA screening and perceived susceptibility for cervical CA.

Among unknown HIV status women participants, those women who have history of multiple sexual partners were5.058 times more likely to utilize the service than their counterparts.This result was higher than the same study conducted in illa municipality Tanzania and northern Ethiopia, Mekelle which revealed that women with history of multiple sexual partners was two times and 1.635 more likely utilize the screening service than their counterparts respectively(42,32).This may be due to the time difference as continuous health education by health professionals and other medias about the association of multiple sexual partner and acquiring cervical CA became being advocated.

The second key factor which was determined as significant amongunknown HIVstatus negative women in this study was knowledge about cervical cancer and its screening, which reported that those who have good knowledge were nearly 5 times more likely to engage in cervical cancer screening service utilization than those who have poor knowledge. This study is supported by the same study conducted in rural Tanzania which revealed that a significant proportion of

respondents (75%) with very high level of awareness had been screened for cervical cancer (21). The result of the current study is higher than the result reported from studies conducted in Myanmar Thailand and Mekelle which reported those women with good knowledge are 2.21 and 2.355 times more likely to utilize the service than women with poor knowledge (40, 32).This might be the result of better and continuous induction of knowledge by health professionals.

But it is lower than the results reported from study conducted in north east Ethiopia, Dessie which reported that women who are knowledgeable are 11.1 times more likely to utilize the service than their counterparts (47).This might be as a result of women in the current study area had no knowhow about the availability of the service in the area and how they gain accessibility for screening as the service is begin sooner in the current study.

The third key factor which has significant association with cervical CA screening service utilization among unknown HIV status women was perceived susceptibility.In these study those women with unknown HIV status whohad high perceived susceptibility for cervical cancer was 3.2 times more likely to utilize cervical CA screening service than their opposite groups. This is consistent with the report from Botswana which showed that those who have high perceived susceptibility were 3.2 times more likely to utilize the service than their opposite groups (45). It was also supported by study conducted in Malawi which revealed low perceived susceptibility to cervical cancer amongst women might contribute to limited utilization of cervical cancer screening services (41).

The result from this study was higher than the result reported from northern Ethiopia Mekelle which depicts women who have high perceived susceptibility to cervical cancer were 2.225 times more likely to screen for cervical cancer than their counterparts (32). This might be due to continuous induction of participants about the risk of developing the disease if not screened early while they are already susceptible.

CHAPTER 7: STRENGTH AND LIMITATION OF THE STUDY

7.1: Strength of the study

- ✓ Being comparative study
- ✓ It includes high number of participants from rural area which had not been assessed in other studies.
- ✓ It targets on risky populations: HIV positive women.

7.2: Limitation of the study

- ✓ Health belief model questions should be supported with qualitative approach.
- ✓ As the study is cross sectional it makes difficult to explore cause and effect relationship among variables among independent and dependent variables.

CHAPTER 8: Conclusion and recommendation

8.1: Conclusions

The first aim of this comparative study was to compare theprevalence of cervical CA screening service utilization among HIV positive and unknown HIV status women. The finding of this study concluded that cervical CA screening service utilization among both groups was very low.

Even though theprevalence of utilizing CCA screening service was very low among both groups, the prevalence among unknown HIV status women was higher than that of positive ones and the difference was significant.

As exploring the main factors significantly associated with cervical CA screening service utilization was the other aim of this study, the results revealed that there are three factors for each group which was significantly associated with utilizing cervical CA screening service. Parity, knowledge about cervical CA and its screening and perceived susceptibility was the main factors which determine utilization of the service among HIV positive women groups.In women with unknown HIV status having history of multiple sexual partners, knowledge and perceived susceptibility for cervical CA was the significantly associated with cervical CA screening service utilization.

While have seen the similarity of the factors among both groups,knowledge and perceive susceptibility were the factors that determine utilization of cervical CA screening service among both groups.

But there was the difference in the other predictors for cervical cancer screening utilization,parity was the key factor among HIV positive women but not for those unknown HIV status groups and having history of multiple sexual partner was the main predictor for not utilizing the service among unknown HIV status women but not for positive ones.

8.2:Recommendations

Based on the findings, cervical cancer screening rates have remained low and needs to be improved through creating awareness. So the study has specific implications for responsible bodies at different positions

A. First for policy makers

The study suggested that there is a need for design policies and programs aimed at awareness creation and improving knowledge about cervical cancer and its prevention methods which can be applied at primary health centers at the rural area of the country. They should acknowledge and recognize that cervical cancer is a major public health concern and accord its prevention and treatment priority in education.

B. For Health professionals and health facilities

Health providers have to inform women about cervical cancer and how to prevent it by intensifying health education during every clinical contact in the form of regular cervical cancer checks. Health facilities must establish awareness campaigns that provide accurate information so that women can make informed choices.

C. For researchers

There is a need for doing more and more researches at the national level aimed at cervical cancer screening service utilization and its contributing factors as there is inconsistency among the factors.

Since there is wide information gap about acquiring cervical cancer and HIV positive women,it is very helpful to study this important target population with better study design that can dig out determinant factors.

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References

1. National cancer institute."Definingcancer:Retrieved on 2014

2.Abudukadeer A, Azam S, Mutailipu AZ, Qun L, Guilin G, Mijiti S. Knowledge and attitude of Uyghur women in Xinjiang province of China related to the prevention and early detection of cervical cancer. World journal of surgical oncology. 2015;13(1):1.

3.Cancer IAfRo, Organization WH. GLOBOCAN 2012: estimated cancer incidence, mortality, and prevalence worldwide in 2012. h ttp. globocan iarc fr/Pages/fact_sheets_cancer aspx# Accessed on. 2015;25.

4.Desille-Gbaguidi H, Hebert T, Paternotte-Villemagne J, Gaborit C, Rush E, Body G. Overall care cost comparison between robotic and laparoscopic surgery for endometrial and cervical cancer. European Journal of Obstetrics & Gynecology and Reproductive Biology. 2013 Dec 31;171(2):348-52.

5.Todd J, Cremin I, McGrath N, Bwanika JB, Wringe A, Marston M, Kasamba I, Mushati P, Lutalo T, Hosegood V, Żaba B. Reported number of sexual partners: comparison of data from four African longitudinal studies. Sexually Transmitted Infections. 2009 Apr 1;85(Suppl 1):i72-80.

6.Firnhaber C, Van Le H, Pettifor A, Schulze D, Michelow P, Sanne IM, Lewis DA, Williamson AL, Allan B, Williams S, Rinas A. Association between cervical dysplasia and human papillomavirus in HIV seropositive women from Johannesburg South Africa. Cancer Causes & Control. 2010 Mar 1;21(3):433-43.

7.world health organization.women cancer control.guide to essential practice.World Health Organization :2016

8.Tanon A, Jaquet A, Ekouevi DK, Akakpo J, Adoubi I, Diomande I, Houngbe F, Zannou MD, Sasco AJ, Eholie SP, Dabis F. The spectrum of cancers in West Africa: associations with human immunodeficiency virus. PLoS One. 2012 Oct 29;7(10):e48108

9. WHO/ICO, (2013). *Information Centre on HPV and Cervical Cancer (HPV Information*

10. World Health Organization.Women cancer control.retrieved on June 2016

11.Ethiopian Federal Ministry of Health. Guideline for Cervical Cancer Prevention and Control in Ethiopia. February 2015. Available http://www.moh.gov.et/resources//asset_publisher/R1dUfCspGqqN/document/id/5467019

12.Human papillomavirus and related diseases report March 20,2015

13. UNFPA, Comprehensive Cervical Cancer Prevention and Control Program Guidance for

Countries February 2011

14.Gedefaw A, Astatkie A, Tessema GA. The Prevalence of PrecancerousCervical Cancer Lesion among HIV-Infected Women in SouthernEthiopia: A Cross-Sectional Study. PLoS One. 2013;8(12), e84519.doi:10.1371/journal.pone.0084519.

15. Moscicki AB, Ellenberg JH, Vermund SH, Holland CA, Darragh T, Crowley-Nowick PA, Levin L, Wilson CM. Prevalence of and risks for cervical human papillomavirus infection and squamous intraepithelial lesions in adolescent girls: impact of infection with human immunodeficiency virus. Archives of pediatrics & adolescent medicine. 2000 Feb 1;154(2):127-34.

16. What are the risk factors for cervical cancer? American Cancer Society, 2014.(Accessed June 15, 2014,athttp://www.cancer.org/cancer/cervicalcancer/moreinformation/cervicalcancerpreventionandearlydetection/cervical-cancerprevention-and-early-detection-cervical-cancer-risk-factors).

17.Meijer CJ, Rozendaal L, Voorhorst FJ, Verheijen R, Helmerhorst TJ, Walboomers JM. Human papillomavirus and screening for cervical cancer:state of art and prospects. Ned Tijdschr Geneeskd. 2000; 144(35):1675–9.

18.Scarinci IC, Garcia FA, Kobetz E, Partridge EE, Brandt HM, Bell MC, et al. Cervical cancer prevention. Cancer 2010;116:2531-42.

19.Aminisani N, Armstrong B, Egger S, Canfell K. Impact of organised cervical screening on cervical cancer incidence and mortality in migrant women in Australia. BMC Cancer 2012;12:491.

20. Jeong S, Saroha E, Knight J, Roofe M, Jolly PE. Determinants of adequate follow-up of an abnormal Papanicolaou result among Jamaican women in Portland, Jamaica. Cancer Epidemiol 2011;35:211-6.

21. Lyimo FS, Beran TN. Demographic, knowledge, attitudinal, and accessibility factors associated with uptake of cervical cancer screening among women in a rural district of Tanzania: Three public policy implications. BMC Public Health 2014; 12:22

22. IARC. The GLOBOCAN estimates cancer incidence for 2012-2015.

23.WHO/ICO Information Centre on HPV and Cervical Cancer (HPV InformationCentre). Human Papillomavirus and Related Cancers in World. SummaryReport 2010. [Date accessed]. www.who.int/hpvcentre

24.Meredith SS, Ruth MPH, Irene H, Jianmin L, James JG, et al. Proportions ofKaposi Sarcoma, Selected Non-Hodgkin Lymphomas, and Cervical Cancer inthe United States Occurring in Persons with AIDS, 1980–2007. JAMA.2011;305(14):1450–9. doi:10.1001/jama.2011.396

25. Biewenga, P. et al. Prognostic model for survival in patients with early stage cervical cancer. Cancer 117, 768–776 (2011).

26.Anorlu RI. Cervical cancer: The sub-Saharan African perspective. Report Health Matters; 16:41–49, 2008

27.Wittet, S. cervical cancer screening and treatment in low-resource settings. Seattle, WA: PATH.2013

28.Ncube B, Bey A, Knight J, Bessler P, Jolly PE. Factors associated with the uptake of cervical cancer screening among women in Portland, Jamaica. North American journal of medical sciences. 2015 Mar 1;7(3):104.

29.Gyawali B, Keeling JJ, van Teijlingen E, Dhakal L, Aro AR. cervical cancer screening in Nepal: ethical considerations. Medicolegal and Bioethics. 2015 Jan 16.

30.Ali-Risasi C, Mulumba P, Verdonck K, Broeck DV, Praet M. Knowledge, attitude and practice about cancer of the uterine cervix among women living in Kinshasa, the Democratic Republic of Congo. BMC women's health. 2014 Feb 18;14(1):30.

31.Morema EN, Atieli HE, Onyango RO, Omondi JH, Ouma C. Determinants of cervical screening services uptake among 18–49 year old women seeking services at the Jaramogi Oginga Odinga Teaching and Referral Hospital, Kisumu, Kenya. BMC health services research. 2014 Aug 6;14(1):335.

32.Bayu H, Berhe Y, Mulat A, Alemu A. Cervical cancer screening service uptake and associated factors among age eligible women in Mekelle Zone, Northern Ethiopia, 2015: a community based study using health belief model. PloS one. 2016 Mar 10;11(3):e0149908.

33.Ogunwale AN, Coleman MA, Sangi-Haghpeykar H, Valverde I, Montealegre J, Jibaja-Weiss M, Anderson ML. Assessment of factors impacting cervical cancer screening among low-income women living with HIV-AIDS. AIDS care. 2016 Apr 2;28(4):491-4.

34.Fletcher FE, Buchberg M, Schover LR, Basen-Engquist K, Kempf MC, Arduino RC, Vidrine DJ. Perceptions of barriers and facilitators to cervical cancer screening among low-income, HIV-infected women from an integrated HIV clinic. AIDS care. 2014 Oct 3;26(10):1229-35.

35.Njuguna E, Ilovi S, Muiruri P, Mutai K, Kinuthia J, Njoroge P. Utilization of Cervical Cancer Screening Among HIV Infected Women in Nairobi, Kenya. In5th International Workshop on HIV & Women 2015. Virology Education.

36.Belete N, Tsige Y, Mellie H. Willingness and acceptability of cervical cancer screening among women living with HIV/AIDS in Addis Ababa, Ethiopia: a cross sectional study. Gynecologic oncology research and practice. 2015 Sep 18;2(1):6.

37.Adeyemi M. Factors Affecting Cervical Cancer Screening Among African Women Living in the United States.

38.Gebru Z, Gerbaba M, Dirar A. Utilization of Cervical Carcinoma Screening Service and Associated Factors among Currently Married Women in Arba Minch Town, Southern Ethiopia. J Women's Health Care. 2016;5(297):2167-0420.

39.Williams M, Moneyham L, Kempf MC, Chamot E, Scarinci I. Structural and sociocultural factors associated with cervical cancer screening among HIV-infected African American women in Alabama. AIDS patient care and STDs. 2015 Jan 1;29(1):13-9.

40.Nandar CS, Laosee O. Determinants of cevical cancer screening among migrants in northern district of Yangon, Myanmar. Journal of Public Health and Development 2015 Oct 8;13(2):3-17

41.Hami MY, Ehlers VJ, Van der Wal DM. Women's perceived susceptibility to and utilisation of cervical cancer screening services in Malawi. Health SA Gesondheid (Online). 2014 Jan;19(1):1-8.

42. Neema M, Denna M, Nyasule Majura Nand Candida M.Utilization of cervical cancer screeningservices and its associated factors amongprimary school teachers in Ilala Municipality, Dar es Salaam, Tanzania.BMC Health Services.2013

43.Austria,Self-reported cervical screening practices and beliefs of women from urban, rural and remote regions. Journal of Obstetrics and Gynaecology.2009:19

44.Crystal L. Chapman L.Factors Predicting Pap Smear Adherence in HIVinfected

Women: Using the Health Belief Model.USF,scholar commons. January 2013

45.Hahn, Stephen M.Factors Associated with HPV Screening and Acquisition in Young Women in Botswana. National nstitute of Health.

46.Hoque ME, Ghuman S, Coopoosmay R, Van Hal G. Cervical cancer screening among University students in South Africa: a theory based study. 2014;9.doi: 10.1371/journal.pone.0111557

47.Tefera F, Mitiku I. Uptake of Cervical Cancer Screening and Associated Factors Among 15–49-Year-Old Women in Dessie Town, Northeast Ethiopia. Journal of Cancer Education. 2016 Apr 13:1-7

48.Alfaro KM, Gage JC, Rosenbaum AJ, Ditzian LR, Maza M, Scarinci IC, Miranda E, Villalta S, Felix JC, Castle PE, Cremer ML. Factors affecting attendance to cervical cancer screening

among women in the Paracentral Region of El Salvador: a nested study within the CAPE HPV screening program. BMC public health. 2015 Oct 16;15(1):1058.

49.Daniel Asfaw Erku, etl: comprehensive knowledge and uptake of cervical cancer screening is low among women living with HIV /AIDS in Northwest Ethiopia.2017 Dec 19:20(4).

ANNEXES

Annex I. Personal Information Sheet

Title of Research: cervical cancer screening service utilization and its determinant factors among all eligible HIV positive and negative women at Alamta general hospital,Tigray Ethiopia, 2018: comparative cross sectional study.

Name of sponsor: Addis Ababa University

Principal Investigator: Lielt G/selassie(BSc)

Contact me by E-mail: lieltseni@gmail.com or Mobile: +251914039831

Advisor: Mr.leulderibe(BSc, MPH)

Purpose of research project: The aim of the study is to asses and compares cervical cancer screening service utilization and its determinant factors among HIV positive and negative women.

Benefit of the study: - There is no direct benefit to you like payment. However, the result of the study will be helpful for all women population in the future by identifying factors associated with underutilization cervical cancer screening service which is useful in cervical cancer related mortality and morbidity reduction.

Risk of the study: - by participating in this research project you may feel some discomfort related to wasting time about 20 minutes during interview with data collection, but there is no other risk or harm

Rights of Participants: - You have full right to participate or to refuse and you can ask question if it is not clear for you. You have also a right not to respond some or the entire question if u doesn't want to respond.

Confidentiality: - Issue will be maintained, no identification will be recorded.

Questionnaires ID_____

Annex II: Informed Consent Form

Title of the project: cervical cancer screening service utilization and determinant factors among all eligible HIV positive and negative women at Alamatageneralzedhospital,Tigray Ethiopia 2018

I have been well aware of that this research undertaking is for a partial fulfilment of MSc degree which is fully supported and coordinated by Addis Ababa University College of Health Science Department of Nursing and midwifery, and the designate principal investigator. I have been fully informed in the language I understand about the research project objectives that are to understand the factors of cervical cancer screening service underutilization. I have been informed that all the information I shall provide to the interviewer will be kept confidential. I understood that the research has no any risk and no composition. I also knew that I have the right to withhold information, skip questions to answer or to withdraw from the study any time I have acquainted nobody will impose me to explain the reason of withdrawal. It is also enlighten there would have no effect at all in my health benefit or other administrative effect that I get.

I have assured that the right to ask information that is not clear about the research before and or during the research work and to contact Addis Ababa University, College of Health Science IRB Office

Principal Investigator's Name: Lielt Gebreselassie Tel: +251914039831

Advisor's Name and Address: Mr LeulDeribe (BSc,MPH) Email.leul.deribe@gmail.com

Mrs Nadia Worede(BSc,MSc)Email.Nadia.legesse@gmail.com

I understand this form, or it has been read to me in the language I comprehend and understood the condition stated above, therefore, I am willing and confirm my participation by signing the consent.

Agreed to participate in the study: Yes /No (mark one of them for verbal consent)

Signature _____Name of witness…….

Signature _____ (Data collector, supervisor, any third person)

Annex III: Questionnaire (English version)

SECTION 1:-SOCIODEMOGRAPHIC CHARACTERSTICS

QUESTIONS	RESPONSES
101 .Age	
102.Marital status	1.married 2.single 3.widowed 4.divorced
103.Occupation	1.Housewife 2.Self-employees 3.Government employees 4.Others, specify____
104.Educational status	1.no formal education 2.primary education 3.secondary education 4.college and above
105. Family's monthly income	……..
106.Place of residence	1.urban 2.rural

SECTION 2:-REPRODUCTIVE HISTORY OF WOMEN

QUESTION	RESPONSE
201. What was your age at first sex?	----------
202.Have you ever had multiple sexual partners?	1.YES 2.NO
203. Did your partner support you to check your gynaecological health?	1.YES 2.NO 3.I Don't have partner
204. Have you ever had history of STIs?	1.YES 2.NO
205. If the women had sexual intercourse, have you usually use condoms during sexual intercourse?	1.YES 2.NO
206. Have you ever given birth?	----------
207. If yes for question NO.14, how many times?	-------

SECTION 3: KNOWLEDGE DATA

QUESTION	RESPONSE
301. Have you ever heard about cervical cancer?	1.YES 2.NO
302. Have you ever heard about cervical cancer screening?	1.YES 2.NO

303. If yes for question NO.301 and 302 From where did you get the information?	Radio TV Health professional 4.other specify ---------
304. What are the symptoms of cervical cancer?	1. Vaginal bleeding 2.foul smelling of Vaginal discharges 3.post coital bleeding 4.pain during sex 5.Do not know
305. What are the risk factors for cervical cancer?	1.multiple sexual partner 2.early initiation of sexual intercourse 3.smoking 4.immunosuppesion 5.multiparity 6.HIV infection 7.long term use of oral contraceptive 8.elder age 9.don't know
306. How a person can prevent cervical cancer?	1.Avoid multiple sexual partners 2. Avoid early sexual intercourse 3. Quit smoking 4. early screening for cervical cancer 5. having vaccination for HPV 6.avoid having too many children 7.avoid long term use of oral contraceptive 8.do not know

307. Can cancer of the cervix be cured in its earliest stages?	1.YES 2.NO 3.DON'T KNOW
308. Do you think cervical cancer screening in general, can prevent development of advanced cervical cancer?	1.YES 2.NO 3.don't know
309. Who should be screened?	1. women of 21years and above 2.Prostitutes 3.Elderly women 4.Other 5.Don't know
310. Do you think that a person can have cervical cancer but not symptoms?	1.YES 2.NO 3.don't know
311. Cervical cancer is a killer if not detected early?	1.YES 2.NO 3.don't know
312. Is there any institution in Alamata which provides cervical cancer screening service?	1.YES 2.NO 3.don't know

313. What is the interval of screening?	1. every 3-5 years for normal women 2. Twice annually for the first year and if normal, annual follow up for HIV positive 3.once in the life time 4.every 10 years 5.don't know

SECTION 4:-Champions of health belief model

Perceived susceptibility	
401.It is likely that I will get cervical cancer .	1.agree 2.disagree 3.don't know
402.My chances of getting cervical cancer in the Next few years are high	1.agree 2.disagree 3.don't know
403.I feel I will get cervical cancer sometime during my life	1.agree 2.disagree 3.don't know

Perceived benefit of screening	
404.Screening helps in prevention of carcinoma of the cervix	1.agree 2.disagree 3.don't know
405.Precancerous cervical Screening is beneficial to my wellbeing?	1.agree 2.disagree 3.don't know
406. If I find abnormality through screening early , my treatment for cervical cancer may not be as bad	1.agree 2.disagree 3.don't know
407. doing cervical cancer screening can decrease my chance of dying from cervical cancer?	1.agree 2.disagree 3.don't know
Perceived barrier	
408. I am afraid to have a screening because I might find out something is wrong	1.agree 2.disagree 3.don't know
409.My husband would not agree to do cervical screening	1.agree 2.disagree 3.don't know
410.The procedure is time taking	1.agree 2.disagree 3.don't know

411.I had not screened because I'm healthy	1.agree 2.disagree 3.don't know
412.I have other priority problems more important than screening	1.agree 2.disagree 3.don't know
413.don't know how to go about getting cervical cancer	1.agree 2.disagree 3.don't know
414.Having screening is not necessary as I use condoms during sex	1.agree 2.disagree 3.don't know
415.Having cervical screening is pain full	1.agree 2.disagree 3.don't know
416.having cervical cancer is not necessary as my ART drugs longer reduce my chances of getting CC	1.agree 2.disagree 3.don't know
417.If any abnormality is find I will give up in life	1.agree 2.disagree 3.don't know

SECTION 5:-SCREENING

Entry: Cervical cancer screening is the systematic application of the test to identify cervical abnormalities in asymptomatic women it is carried out by provider to scrape cells from the cervix.

501. Have you ever screened for cervical cancer during the last three years?	1.YES 2.NO

Annex IV questionnaire (Tigirgna version)

መረዳኢታዘለዎፍቓድ

ናይፅንዓትርእሲ፡-ቅድመጫፍካንሰርምርመራግልጋሎትምውሳድንተዛመድቲኩነታትንኣብሞነኸለንዝምልከተን HIV ፖዘቲቭንነገቲቭንዝኮናደቂአንስትዮ፡አንፃራዊፅንዓት

እዚፅንዓትከምሓደመማልኢማስተርስዲግሪኮይኑሙሉእብሙሉእብአዲስአበባዩኒቨርስቲጥዕናሳይንስኮሌጅዝተሓባበረንዝተደገፈንምኾኑንበቲዋናመርማሪከምዝተዳለወንብዝግባእፈሊጠእየ፡፡ናይዚፅንዓትዋናዕላማእዉንቅድመጫፍካንሰርምርመራምውሳድ ካብዝግባእንታሕቲምኻንንንዚዘቃልዑነገራትንምርዳእከምዝኾነብዝርድአኒቋንቋተነኒሩኒእዩ፡፡አነዝህቦምሓበሬታታትሚስጥራቶምዝተሓለወምኾኑእዉንብዝግባእተነኒሩኒእዩ፡፡እዚምርምርምንምጣይነትጉድኣትንካሕሳንከምዘይብሉተረዲኡኒእዩ፡፡ብተወሳኺሓበሬታናይዘይምሃብ፣ንሕቶታትመልሲናይዘይምምላስ፣አብዝደለኹዎግዘካብዚፅንዓትናይምውፃእመሰለይዝተሓለወምኾኑ ንማንምሰብካብዚፅንዓትዝወፀሉምኽንያትንከረድእከምዘይገብረንንፈሊጠእየ፡፡ካብምምሕዳርጥዕናአብዝረኽቦናይጥዕናጥቕሚ እዉንምንምጣይነትሳዕቤንከምዘይብሉተረዲኡኒእዩ፡፡

ብዛዕባእዚፅንዓትንምርምርንግልፂዘይኮነለይወይከዓዘይተረድኣኒነገርእንተሃልዩሓበሬታናይምሕታትንምስአዲስአበባዩኒቨርስቲ ጥዕናሳይንስኮሌጅናይቲኮሌጅፅንዓትንምርምርንግምግማቦርድቢሮናይምርኻብመሰለይዝተሓለወምኟኑንአረጋጊፀእየ፡፡

ሽምዋናመርማሪንአድራሻን፡ልእልቲ/ስላሴስ.ቑ፡ 0914039831

ናይዋናመርማሪመማኸርቲሽምንአድራሻን፡- አቶልኡልደርቤ(BSc, MPH)ኢሜይል፡leul.deribe@gmail.com

ወ/ሪትናድያወረደ (BSc,MSc)ኢሜይል፡Nadia.legesse@gmail.com

እዚቅጥዒተረዲኡኒእዩ(አብላዕሊዘሎሓበሬታብዝርድኣኒቋንቋተነቢቡለይእዩ)
ስለዚአብዚፅንዓትንምርምርንንምስታፍቓደኛምኟነይብፊርማይየረጋፅ፡፡

አብዚፅንዓትንምስታፍተስማሚዕከኺ? እወ/ አይተስማማዕኹን (ኣብሓዲኡምልክትይገበር)

ፊርማ፡……
……

ፊርማ፡……..(አካቢሓበሬታ፣ ተቐፃሪወይምካልእሳልሳይሰብ)

ሕቶታት

ክፍሊሓደ፡-ማሕበራዊንኢኮነምያዊንኩነታት

ተ.ቁ	ቃለመሕተት	መማረፂመልሲ
101	ዕድመ	……..ዓመት
102	ኛይሓዳርኩነታት	1 ዘእተየት 2 ዘየእተየት 3 ዝፈትሐት 4 ዝሞታ
103	ስራሕኪእንታይእዩ;	1.ብዓልቲሓዳር 2.ናይግሊስራሕ 3.ናይመንግስቲስራሕ 4..ካልእእንተኮይኑጥቀሲ
104.	ናይትምህርቲኩነታት	1.መደበኛትምህርቲዘይብላ 2.ቀዳማይደርጃ 3.ካልኣይደረጃ 4. ኮሌጅንካብኮሌጅንላዕሊን
105.	ናይቤተ-ሰብወርሓዊኣታዊ	
106.	ናይመንበሪቦታኺአበይእዩ?	1.ገጠር 2.ከተማ

ክፍሊክልተ፡- ናይስነወሊድሓበሬታ

ተ.ቁ	ቃለመሕተት	መማረፂመልሲ
201	አብመጀመርታግዘፆታዊርክብእንትትገብሪዕድምኪከንደይነይሩ	……
202.	ምስብዙሕሰባትፆታዊርክብነይሩኪይፈልጥዶ	1.አወ 2.አይነበረንን
203.	በዓልገዛኪ/ዓርክኺናይስነወሊድጥዕናንክተረጋግፂይሕግዘኪዶ	1.እወ 2.አይሕግዘንን
204.	ብፆታዊርክብዝተሓላለፉሕማማትነይሩኪይፈልጥዶ	1.እወ 2.አይፈልጥን
205.	አብእዋንፆታዊርክብመብዛሕቲኡግዘኮንደምትጥቀሚዶ	1.እወ2.አይጥቀምን
206.	ወሊድኪትፍልጢዶ	1እወ 2.አይፍልጥን
207	ንሕቶቁፅሪ 206 መልሳእወእንተኮይኑ.ክንደይወሊድኪ	

ክፍሊሰለስተ፡- ሓበሬታብዛባናይጫፍካንሰርፍልጠት

ተ.ቁ	ቃለመሕተት	መማረፂመልሲ
301	ብዛዕባናይማህፀንጫፍካንሰርሰሚዕኪትፈልጢዶ	1እ.ወ 2.አይፈልጥን
302	ብዛዕባቅድመማህፀንጫፍካንሰርምርመራሰሚኪትፈልጢዶ	1.እወ 2.አይፈልጥን
303	ንሕቶቁፅሪ 301 ን 302 ንመልሲእወእንተኮይኑካበይሰሚዕኪ	1.ሬድዮ 2.ቴሌቪዥን 3.ካብበዓልሙያጥዕና 4..ካልእእንተኮይኑጥቀሲ
304	ናይማህፀንጫፍካንሰርምልክታትእንታይእዮም?	1.ብብልዕቲደምምፍሳስ 2.ብብልዕቲጨናዘለዎፈሳሲምፍሳስ 3 ድሕሪፆታዊርክብደምምፍሳስ 4.ቃንዛአብእዋንፆታዊርክብ

		5. አይፈልጥን
305.	ካብዞምዝስዕቡንጫፍካንሰርዘቃልዕአየናይእዩ ?(ካብሓደንላዕሊምምራፅይክአልእዩ)	1.ምሰብዙሓትሰባትየታዊርክብምግባር 2.ትሕቲዕደመየታዊርክብምጅማር 3.ሲጋራምትካኽ 4.ናይሕማምምክልኻልዓቕሚምቕናስ 5.ብዙሕምዉላድ 6.ሕማም HIV 7.ንነዊሕግዜብአፍዝውሰድናይጥንሲመከላኸሊምጥቃም 8.እርጋን 9. አይፈልጥን
306.	ናይማህፀንጫፍካንሰርከመይምክልከኻልይክአል? (ካብሓደንላዕሊምምራፅይክአልእዩ)	1.ምስብዙሓትሰባትየታዊርክብዘይምግባር 2. ትሕቲዕደመየታዊርክብዘይምጅማር 3.ሲጋራዘይምትካኽ 4.ቀዲምካናይቅድመካንሰርምርመራምግባር 5.ብዙሕቆልዑዘይምውላድ 6.ንነዊሕግዜብአፍዝውሰድናይጥንሲመከላኸሊዘይምጥቃም 7.አይፈልጥን 8.ካልእእንተሃልዩጥቀሲ
307.	ናይማህፀንጫፍካንሰርብመጀመርታደረጃክድሕንይኽእልዶ?	1.እወ 2.አይድሕንን 2.አይፍልጥን
308.	ናይቅድመማህፀንጫፍካንሰርምርመራብሓፍሻእቲካንሰርናብዝል ዓለደረጃክይኽይድክላክኽልይኽእልእዩኢልኪትሓስቢዶ	

309.	ናይቅድመማህፀንጫፍካንሰርምርመራክገብርዘለዎመንዩ (ካብሓደንላዕሊምምራፅይክአልእዩ)	1.ዕድመአን 21 ንልዕሊኡንዝኮናደቂአንስትዮ 2.ፋይቶት 3.ብዕድመዝደፍኣድቂአንስትዮ 4.ካልእአንተሃልዩጥቀሲ 5.አይፈልጥን
310.	ሓንቲሰበይቲናይማህፀንጫፍካንሰርእናሃለዋምልክትዘይክተርኢ ትኽእልእያኢልኪትሓስቢዶ	1.እወ 2.አይሓስብን 3.አይፈልጥን
311.	ናይቅድመማህፀንጫፍካንሰርአቐዲሙእንተተዘይተፈሊጡ ቐታሊእዩ	1.እወ 2.አይኮነን 2.አይፍልጥን
312.	አብአላማጣናይማህፀንጫፍካንሰርምርመራዝህብተካልአሎዶ	1.እወ 2.የለን 2.አይፍልጥን
313.	ናይማህፀንጫፍካንሰርምርመራበብክንደይዓመትክውሰድአለዎ	1. በብ 3 ዓመትጥዕይቲንዝኮነትሰበይቲ 2. አብመጀመርታግዜአብዓመትክልተግዜ ካብኡበብዓምቱ HIV/AIDS ንዘለዋሰበይቲ 3. አብሙሉእዕድመሓደግዜ 4. በብዓሰርተዓመት 5. አይፍልጥን

ክፍሊአርባዕተ፡ናይጥዕናአተሓሳስባሞዴል

ተ.ቁ		
401	ናይማህፀንጫፍካንሰርዝሕዘኒይመስለኒእዩ	1.ይስማማዕ 3 አይፈልጥን 2.አይስማማዕን
402	አብዞምዝመፁቀረባእዋናትንማህፀንጫፍካንሰርናይምቅላዕዕድለይዝልዓለእዩ	1.ይስማማዕ

		2.አይስማማዕን 3.አይፈልጥን
403.	አብሙሉእሂወተይአብዝኾነእዋንናይማህፀንጫፍካንሰርከምዝሕዘኒይስመዓኒእዩ?	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
404.	ቅድመጫፍካንሰርምርመራምግባርናይማህፀንጫፍካንሰርይከላከኽልእዩ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
405.	ቅድመጫፍካንሰርምርመራምግባርንጥዕናይአድላዪእዩኢልኪትሓስቢዶ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
406.	አቐዲመቅድመጫፍካንሰርምርመራገይረካንሰርእንተተረኺቡኒሕክምናኡዝቐለ ለይኸውንእዩ ?	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
407.	ቅድመጫፍካንሰርምርመራምግባርብካንሰርናይምሟትዕድለይይቕንሶእዩ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
408.	ጫፍካንሰርክርክበኒስለዝኽእልቅድመጫፍካንሰርምርመራምግባርይፈርሕእየ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
409.	በዓልገዛይቅድመጫፍካንሰርምርመራንኽገብርአይስማማዕን	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
410.	ከይዲምርመራነዊሕስለዝኾነ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
411.	ዘይተመርመርኩሕማምስለዘይብለይእዩ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን

412.	ካብቅድመጫፍካንሰርምርመራምግባርዘቐድሞምካልኦትጠቕምቲፀገማትሰልዘለዉኒ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
413.	ቅድመጫፍካንሰርምርመራግልጋሎትከመይምርካብከምዘለኒአይፈልጥን	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
414.	ቅድመጫፍካንሰርምርመራምግባርኽባርእዩ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን
415.	ቅድመጫፍካንሰርምርመራምግባርቓንዛአለዎ	1.ይስማማዕ 2.አይስማማዕን 3.አይፈልጥን

ክፍሊሓሙሽተ፡- ቅድመጫፍካንሰርምርመራ

ተ፣ቑ	ሕቶታት	መማረፂመልሲ
501.	ኣብዝሓለፉሰለስተዓመታትቅድመጫፍካንሰርምርመራጌርኪትፈልጢዶ?	1.እወ 2.አይፈልጥን

ANNEX V:DECLARATION

I hereby todeclare, that except for references to other people's work which have been duly acknowledged, this proposal is my own composition and neither in whole nor in part has this proposal been presented for the award of a degree in this university or elsewhere.

PRINCIPALINVESTIGATOR: LIELT GEBRESELASSIE

SIGNATURE..... DATE…….

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Mr. LEUL DERIBE(BSc,MPH)

SIGNATURE..... DATE…….

CO-ADVISOR: Mrs. NADIA WOREDE(BSc,MSc)

SIGNATURE..... DATE…….