ADDIS ABABA UNIVERSITY
COLLEGE OF HEALTH SCIENCES
SCHOOL OF PUBLIC HEALTH

PREDICTORS OF CERVICAL CANCER SCREENING PRACTICE AMONG HIV-POSITIVE WOMEN ATTENDING ADULT ANTIRETROVIRAL CLINICS, BISHOFTU, ETHIOPIA:
THE APPLICATION OF HEALTH BELIEF MODEL

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A THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES ADD5IS ABABA UNIVERSITY, SCHOOL OF PUBLIC HEALTH, IN PARTIAL FULFILMENT OF THE REQUIRMENTS FOR THE MASTERS DEGREE OF PUBLIC HEATH IN HEALTH EDUCATION AND PROMOTION

JUNE, 2018
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Abbreviations and acronyms

AAPBCR: Addis Ababa Population Based Cancer Registry
ACS: American Cancer Society
AOR: Adjusted Odds Ratio
ART: Anti-Retroviral Treatment
CC: Cervical Cancer
CCP: Cervical Cancer Program
CCS: Cervical cancer screening
CHBMS: Champion's revised Health Belief Model Scale
CI: Confidence interval
COR: Crude Odds Ratio
FMOH: Federal Ministry of Health
HBM: Health Belief Model
HIV/AIDS: Human Immune Deficiency Virus/ Acquired Immune Deficiency Syndrome
HPV: Human Papilloma Virus
KAP: Knowledge, Attitude, Practice
LMICs: Low and Middle Income Countries
NCDs: Non-communicable diseases
NGO: Non-governmental organization
PEPFAR: President's emergency plan for AIDS relief
PLWHA: People living with HIV/AIDS
PPS: Probability proportional to size
REC: Research Ethical Committee
SBCC: Social and behavior change communication
SD: Standard-deviation
SPSS: Statistical Packages for Social Sciences
SVA: Single Visit Approach
TB: Tuberculosis
US$: United States' dollar
VIA: Visual Inspection with Acetic Acid
WHO: World Health Organization

Abstract

Background: Cervical cancer is a global public health problem. In Ethiopia, it is the second most common cancer causing morbidity and mortality. Few available evidences revealed that despite distribution and severity of cervical cancer among HIV-positive women and the ease at which it could be prevented, cervical cancer screening practice in Ethiopia among HIV positive women is considerably low. Therefore this study aims to assess predictors of cervical cancer screening practice among HIV positive women by applying health belief model concepts.

Method: Facility based cross-sectional study was conducted at health facilities in Bishoftu. Data were collected from 475 women who came to health facilities for antiretroviral services. Iinterviewer administered questionnaires were employed to collect data. Frequencies, proportion, measures of central tendency and dispersion were used to describe findings. Independent sample t-test was used to determine whether mean differences existed between perceptions of HIV-positive women who had ever screened and never screened for cervical cancer. Crude odds ratios and 95% confidence intervals were considered to measure associations for each variable with the cervical cancer screening practice. Multivariable logistic regression was run to identify predictors of cervical cancer screening practice by controlling possible confounders.

Result: Cervical cancer screening practice among HIV-positive women in this study was 25%. Health proffesionals were the main source of information about cervical cancer and its screening. There was a difference between the ever and never screened groups in mean scores of their perceived severity, perceived benefit, perceived barrier, perceived self-efficacy, perceived threat and net-benefit towards screening ($P < 0.05$). Perceived self-efficacy (AOR 1.24, 95%CI 1.13-1.37), perceived threat (AOR 1.08, 95%CI 1.05-1.12) and perceived net-benefit (AOR 1.18, 95% CI 1.12, 1.24) were the predictors of cervical cancer screening practice. Percieved self-efficacy was the major predictor of cervical screening practice.

Conclusion and recommendation: The low screening level and significant association of HIV-positive women's perceptions toward cervical cancer screening identified in this study indicated that much work needs to be done on changing of their perceptions by responsible bodies such as health care providers, organizations working on female cancer and researchers.

Key-words: Cervical cancer, screening, HIV/AIDS, Health belief model

1. Introduction

1.1 Background

Cancer is a group of diseases in which abnormal cells in the body divide and grow out of control (1). These abnormal cells can spread to other parts of the body and when this happens, it is called metastasis (1). Cancers that originate in the female reproductive system are called gynecological cancers. Among five main gynecological cancers: uterine, cervical, ovarian, vaginal and vulvar cancer, breast and cervical cancer are the most frequently occurring cancers in women worldwide (2).

Cervical Cancer (CC) is malignancy of the cervix, the lower opening of uterus which is caused by presence of human papilloma virus (HPV) infection which interferes with the normal functioning of cells that will result in distinct change in the epithelial cells of transformation zone of the cervix (3). It is one of the very few cancers where a precursor stage (pre-cancer) lasts many years before becoming invasive cancer, providing ample opportunity for detection and treatment (4). It has bimodal distribution in relation to age, one at 30s and other at 60s. These two age groups generally become symptomatic to cervical lesion but for HIV-positive women become symptomatic to cervical cancer irrespective of the age distribution (5, 6).

Cervical cancer is the fourth most frequently diagnosed cancer with an estimated 527,000 cases and the fourth leading cause of cancer mortality with 270,000 deaths annually among women worldwide (4, 7, 8). More than 85% of these deaths are in low and middle income countries(8) . In developing countries, it is the second most commonly diagnosed cancer after breast cancer and the third leading cause of cancer death after breast and lung cancers (7). In sub-Saharan Africa, 22.2% of cancer affecting women is cervical cancer and it is also the most common cause of female cancer related death (9).

In Ethiopia cervical cancer is the second most frequently diagnosed reproductive cancer and leading cause of cancer mortality among women aged 15 to 44 years (10). There are 29 million women aged 15 years and older who are at risk of cervical cancer in the country (11). Every year 7600 women are diagnosed with cervical cancer and about 5000 die from the disease (11, 12).

The Addis Ababa population based cancer registry (AAPBCR) has indicated that breast and cervical cancer contributed about 50% of the total cancer cases among women and cervical cancer alone contributed about 17% of all cancer cases in women(13).

According to WHO guideline every sexually active woman aged 30-49 years should undergo cervical cancer screening at least every five years, but for women and girls who are human immune deficiency virus (HIV) positive and sexually active, they should be screened regardless of their age and rescreen every three years (14).

According to American cancer society (ACS) guideline for the prevention and early detection of cervical cancer, all women should begin cervical cancer testing (screening) at age 21. Women aged 21 to 29 years, should have a test every 3 years. Beginning at age 30, the preferred way to screen is every 5 years and should continue until age 65, but for those Women who are at high risk of cervical cancer because of a suppressed immune system like who are HIV positive and sexually active may need to be screened more often and should follow the recommendations of their healthcare team (15).

1.2 Statement of the problem

Cervical cancer is an important public health problem worldwide. The world has estimated population of 2,716 million women aged 15 years and older who are at risk of cervical cancer (4). Projections showed that by 2030, the death rate from cervical cancer will have doubled and over 95% of these deaths are expected to occur in low and middle-income countries (14). In Sub Saharan Africa, cervical cancer is a major cause of morbidity and mortality contributing to more than half of global burden of cervical cancer (9). In East Africa, the age standardized cervical cancer incidence and mortality rate per 100,000 women was 34.5 and 25.3 respectively (8, 16). In Ethiopia, the age adjusted incidence rate of cervical cancer is 26.4 and mortality rate is 18.4 per 100,000 women (11).

According to Ethiopian Demographic and Health Survey (EDHS) 2016 report HIV/AIDS prevalence among women aged 15 to 49 years was 1.2% (17). About 534,000 women over age 15 living with HIV in Ethiopia are among the most vulnerable to cervical cancer since women infected with HIV/AIDS are ten times at higher risk for precancerous lesions and are more likely to progress to invasive cervical cancer compared with uninfected women (18, 19).

Cervical cancer screening prevents cervical cancer morbidity and leads to reduction in the incidence of invasive cervical cancer and cervical cancer mortality (15). Screening of HIV positive women every 3 years followed by treatment of detected precancerous lesions was estimated to prevent 91% of cervical cancer cases (14, 20).

In spite of the magnitude of the problem of cervical cancer among at risk women and the fact that it is the easiest gynecologic cancer which can be prevent and treat through early screening and follow-up, cervical cancer screening practice in low income countries among HIV positive women is considerably low, for example, only 9%, 10.8% and 19% of HIV positive women in Zimbabwe, Ethiopia and Kenya have participated in cervical cancer screening service uptake, respectively (21-23).

Ethiopia adapted the WHO recommendation and recommended HIV negative women to begin cervical cancer screening between 30-49 years of age once every five years and HIV positive women to start screening at HIV diagnosis, regardless of age and rescreen every five years (19). "See and treat" strategy is being applied as part of routine care for HIV-positive Women using Visual Inspection under Acetic acid (VIA) as screening method and cryotherapy as a treatment option (19). The government of Ethiopia has been giving more emphasis on programs which focuses on early detection of cervical cancer. Several advocacy efforts have been also done by different stakeholders such as academia, professionals, media, development partners and other stakeholders (10).

Despite the recommendation, service expansion and advocacy efforts, cervical cancer screening practice among HIV positive women is relatively low (11, 19, 23-26) compared to the national recommended coverage 80% (19). In order to maximize the uptake in terms of reaching more vulnerable populations such as HIV positive women and meet the purpose of efforts to enhance cervical cancer screening and treatment, it is necessary to know more about what factors are affecting HIV positive women's behavior to get screened.

Previous studies conducted in the country emphasize on knowledge, attitude, practice (KAP) and accessibility of service (19, 23-25, 27-29) and these studies reported that there was relatively good knowledge level about cervical cancer and cervical cancer screening among HIV positive women

but irrespective of service availability and good level of knowledge their screening practice was reported as low (11, 23-25, 27).

Health belief model (HBM), the most commonly used theory in health education and health promotion assumes that the predictor of a behavior is one's (individual) perception (30) but studies with focus on perception (CC and CC screening) of HIV positive women are not much conducted in sub-Saharan Africa and no published study in Ethiopia which assesses HIV positive women's perception towards cervical cancer and cervical cancer screening. The paucity of studies in this regard seems to create information gap among study subjects and stakeholders. Therefore, this study aimed to assess the magnitude and predictors of cervical cancer screening practice among HIV positive women based on the perspective of Health belief model.

1.3 Significance of the study

This study assessed predictors of cervical cancer screening practice among HIV positive women. Moreover, the study addressed modifiable factors for poor screening practice, identified important structural attributes and women's perception, which affect the screening practice. Further it identified gaps between the women knowledge on cervical cancer and actual practice.

The results of this study will contribute in designing appropriate intervention strategies, help policy makers (program planners) and non-governmental organizations (NGO) working on cancer to design evidence based cervical cancer control and prevention programs among HIV-positive women and provide a convenient programmatic approach to address factors affecting cervical cancer screening practice. In addition, it will be helpful in providing information as baseline for future studies to measure the effect of evidence based prevention programs for HIV-positive women in Ethiopia.

2. Literature review

2.1 Global burden of cancer

Cancer is the second leading cause of death worldwide and accounting for 8.8 million deaths with approximately 14 million new cases in the last five years. The number of new cases of cancer is expected to rise by about 70% over the next 2 decades due to increasing lifespan, lifestyle related factors like obesity, alcohol consumption, smoking, increased prevalence of HPV and Hepatitis virus (31). Approximately more than half of deaths from cancer occur in low- and middle-income countries (8). In Ethiopia, cancer accounts for about 5.8% of total national mortality. The annual incidence of cancer is estimated around 60,960 cases and the annual mortality is over 44,000 (10).

Around one third of deaths from cancer are due to the five leading behavioral and dietary risks: high body mass index, low fruit and vegetable intake, lack of physical activity, tobacco use, and alcohol use (32). Cancer causing infections, such as hepatitis and HPV, are responsible for up to 25% of cancer cases in low and middle-income countries (33).

The economic impact of cancer is significant and is increasing. The total annual economic cost of cancer in 2015 was estimated at approximately US$ 1.16 trillion (7).

2.2 Global burden of cervical cancer

Cervical cancer is one of the main gynecological cancers that start in the cervix, the lower part of the uterus which connects to the birth canal (vagina) (4). Most cervical cancers begin in the cells in the transformation zone. These cells do not suddenly change into cancer. Instead, the normal cells of the cervix first gradually develop pre-cancerous changes that can evolve into invasive cancer over years. The main types of cervical cancers are squamous cell carcinoma and adenocarcinoma (34).

It is the major cause of mortality and morbidity worldwide (35). Almost 90% of cervical deaths in the world occur in developing countries, with India alone accounting for 25% of the total cases (7). Cervical cancer incidence and mortality rates are highest in sub-Saharan Africa, Central and South America, South-eastern Asia, and Central and Eastern Europe (7).

The incidence and mort ality resulting from cervical cancer in developed countries is fairly under control as opposed to developing countries (36). In the last 40 years, in the developed countries cervical cancer death rate has gone down by more than half due to effective and accessible secondary prevention programs and improved treatment (37). Rates have also decreased in some low and middle income countries (LMICs) such as Colombia, Philippines and India likely due to screening activities and improved socioeconomic conditions (7). However, cervical cancer rates have increased in Uganda, Zimbabwe, Ethiopia and some countries of Central and Eastern Europe likely due to increased HPV prevalence associated with changing sexual practices in combination with inadequate screening and improved registration (7).

2.3 Risk factors for cervical cancer

Several risk factors increase the chance of developing cervical cancer. Infection by human papilloma virus (HPV) which is sexually transmitted infection is a prerequisite for CC. Smoking, having a weakened immune system (HIV, chlamydia infection, use of corticosteroid etc…), being overweight, a diet low in fruits and vegetables, long term use of oral contraceptive pills(OCP), having multiple full term pregnancies, being younger than 17year at first full term pregnancy, long term use of hormonal drugs, having family history of cervical cancer and low economic status are the main risk factors (32).

HPV is a group of viruses that are extremely common worldwide. There are more than 100 types of HPV, of which two HPV types (16 and 18) cause 70% of cervical cancers and precancerous cervical lesions. HPV-infection is mainly related to patterns of sexual behavior and sexual activity, which includes multiple sexual partners, early age at first coitus, promiscuous male partners and lack of condom use and also be transmitted through direct skin to skin contact of the genital areas (38). More than 75% of sexually active adults have had HPV infection in their lifetime (39). Co-infection with other sexually transmitted infections such as HIV, Chlamydia Trachomatis and Herpes Simplex Virginals has also documented to contribute to the progression of CC (38).

2.4 Cervical cancer screening

The aim of CC prevention and control methods are a reduction in both the incidence of the disease and the associated morbidity and mortality, as well as improved life for the patients and their families (40). In addition to substantial opportunities for primary prevention, the World Cancer

Report also emphasizes the potential of early detection, treatment and palliative care. It urges all countries to establish comprehensive national cervical cancer control programs (14, 40).

Primary prevention aims to reduce the incidence of a disease within a population. It involves interventions that are applied before there is any evidence of disease. As such, prophylactic vaccination against HPV has proven its effectiveness (40). The aim of secondary prevention is to detect a disease in its earliest stages of development, before symptoms appear and to stop its progression with lighter treatment methods leading to a greater chance of recovery (40). Cervical cancer is particularly well suited to secondary prevention, given that its natural course is characterized by the development of precancerous lesions a long time before the occurrence of cancer (40). Tertiary prevention primarily aims to prevent or control the morbidity caused by CC therapy, but it also encompasses the prevention of CC recurrence (40).

Cervical cancer screening is the systematic application of a test to identify cervical abnormalities in an asymptomatic population. Screening services may be provided either as organized or opportunistic services or a combination of both (41). Until a few years ago, the only method of screening for cervical cancer was the Pap smear or cytology. Afterwards newer methods have been developed for cervical cancer screening: molecular HPV screening tests and visual inspection with acetic acid (42).

Cervical cancer screening programs have reduced the incidence and mortality of cervical cancer and heightened public awareness of cervical cancer prevention. Focusing on screening will lead to improved survival and a better quality of life (42). Early detection can greatly increase the chance of successful treatment resulting in approximately 40% reduction in incidence and mortality associated with invasive cancer (43). Effective screening and early treatment of precancerous cervical lesions are, thus, key factors in preventing cervical cancer in both HIV-infected and HIV-uninfected women (5). This is supported by studies done in Japan and USA, early cervical cancer screening reduced incidence and mortality related with cervical cancer among HIV positive women by 75% (44, 45).

Considerable attention has been given to cervical cancer prevention in developed countries and how cervical cancer screening contributes to reducing cervical cancer related death than developing nations (46) though screening has a vital role in preventing the scourge of cervical cancer due to

computing needs for communicable disease, fragile health system structure, lack of laboratories for cytology and pathology, lack of resources to upscale programs, lack of having screening included in all medical training (35). The disparity in cervical cancer diagnosis and subsequent mortality between high and low income countries is largely due to the low rate of screening for pre-invasive cervical disease and limited treatment options in low resource settings (11).

2.5 Cervical cancer and its screening in Ethiopia

Only in the last few years have non communicable diseases including cancer received attention as major public health issues in Ethiopia (10). The most prevalent cancers in Ethiopia among the entire adult population are breast cancer (30.2%), cancer of the cervix (13.4%) and colorectal cancer (5.7%). About two-thirds of annual cancer deaths occur among women (8, 13).

Cervical cancer is the most frequent form and among leading cause of cancer mortality in Ethiopian women (19). The age standardize incidence rate and mortality rate of cervical cancer in Ethiopia is 26.4 and 18.4% respectively. Cervical cancer ranks as the 2nd most frequent cancer among women in Ethiopia, and the 2nd most frequent cancer among women between 15 and 44 years of age (11). Access to cervical cancer screening was extremely limited for the majority of women in Ethiopia until the Single Visit Approach (SVA) for cervical cancer program (CCP) service was introduced by Pathfinder International in 2009 (11).

The CCP project, named Addis Tesfa (which translates to New Hope), introduced the SVA to women infected with HIV in a phased approach in 14 public President's emergency plan for AIDS relief (PEPFAR)-affiliated health facilities. The SVA employed Visual Inspection of the cervix with Acetic acid (VIA) and offered immediate treatment of precancerous cervical lesions with cryotherapy (41). Women infected with HIV are at higher risk for precancerous lesions and are more likely to progress to invasive cervical cancer compared with uninfected women. As a result, the Federal Ministry of Health (FMOH) of Ethiopia supported the integration of CCP services (19).

2.6 Cervical cancer and Human immunodeficiency virus/Acquired immune deficiency syndrome (HIV/AIDS)

HIV, the virus that causes AIDS, affects the immune system and puts HIV-positive women at higher risk for attracting and persistence of HPV infections. This might explain why women with

HIV-infection have a higher risk for cervical cancer (38, 47). The immune system is important in destroying cancer cells and slowing their growth and spread. In women with HIV, a cervical pre-cancer might develop into an invasive cancer faster than it normally would (43). Up to 67% of HIV-infected women are infected with HPV and they are more likely to be infected with multiple HPV strains. Additionally, HIV infected women more often have persistent infections especially as CD4 cell counts decrease (48).

Cervical cancer is the leading AIDS-related malignancy in HIV-positive women, about ten times more likely to develop cervical cancer compared to uninfected women (18, 27). HIV-infected women with invasive cervical cancer are more likely to present with advanced stage of invasive cervical cancer, to have persistent or recurrent disease at follow-up after treatment of precancerous lesions, a shorter time to recurrence, a shorter survival time after diagnosis, and are more likely to die of cervical cancer (49).

2.7 Factors affecting cervical cancer screening practice

Factors associated with reducing participation or uptake of women in cervical cancer screening programs are poor awareness of the indications and benefits of the screening, lack of knowledge of cervical cancer and its risk factors, fear of been embarrassment by health care workers, fear of pain and fear of finding a positive result (23, 50, 51). Lack of female screeners in health facilities, convenient clinic times, anxiety caused by receiving an abnormal cervical screening result, poor understanding of the cervical cancer screening procedures and a need for additional information are other barriers for uptake in cervical cancer screening programs (52). Despite the mentioned factors, study done in the developed countries have reported a high percentage of participation in cervical cancer screening of about 86% and a follow up rate of 76%(53) but this trend is completely different in less developed countries in which most studies reported low participation and follow up rates (24, 54, 55).

2.8 Theoretical frame work: Health belief model (HBM)

The health belief model was first introduced in 1950's by psychologists working in the U.S. Public Health Service (Godfrey Hochbaum, Stephen Kegels, Irwin Rosenstock) (30). HBM is a model that attempts to explain and predict health behaviors like on increasing the use of then available preventive services including screening. HBM is a conceptual tool assuming that the best predictor

of an individual’s behavior is one's perception toward the case and the preventive modalities (30, 56).

HBM is used to determine a relationship between individual knowledge, attitudes, perception and the likelihood of doing the recommended behaviors rather than means in making sense of a complex social reality (30). It is by far the most commonly used theory in health education and health promotion (30, 57, 58). HBM is grounded in sociology and it takes into account the socio-cultural context, such as social networks, cultural values, practices and beliefs which are important for understanding the recommended behavior (30).

The HBM contains several primary concepts that predict why people will take action to prevent, to screen for, or to control illness conditions. 1993 Champion's revised Health Belief Model Scale (CHBMS) include susceptibility, seriousness, benefits, barriers to a behavior, cues to action, and most recently, self-efficacy (56). If individuals regard themselves as susceptible to a condition, believe that condition would have potentially serious consequences, believe that a course of action available to them would be beneficial in reducing either their susceptibility to or severity of the condition, and believe the anticipated benefits of taking action outweigh the barriers to (or costs of) action, they are likely to take action that they believe will reduce their risks (30) .

2.9 Constructs of HBM

The validity and reliability of CHBMS was tested. The construct validity of the scales was tested by factor analysis and yielded strong evidence for construct validity by substantiating the independence of constructs(56). The reliability coefficient, cronbach’s alpha for the original CHMBS were 0.93 for perceived susceptibility, 0.8 for perceived seriousness, 0.8 for perceived benefit, 0.88 for perceived barrier and 0.88 for perceived self-efficacy (56, 59).

Perceived Susceptibility: Perceived susceptibility refers to beliefs about the likelihood of getting a disease or condition. For instance, a woman must believe there is a possibility of getting cervical cancer before she will be interested in obtaining screening (30).

Perceived Severity/seriousness: Feelings about the seriousness of contracting an illness or of leaving it untreated include evaluations of both medical and clinical consequences. For example, death, disability, pain and possible social consequences such as effects of the conditions on work,

family life, and social relations. The combination of susceptibility and severity has been labeled as perceived threat (30).

Perceived Benefits: Even if a person perceives personal susceptibility to a serious health condition (perceived threat), whether this perception leads to behavior change will be influenced by the person's beliefs regarding perceived benefits of the various available actions for reducing the disease threat (30).

Perceived Barriers: Refers to the potential negative aspects of a particular health action. Perceived barriers may act as impediments to undertake recommended behaviors. A kind of no conscious, cost-benefit analysis occurs where individuals weigh the actions expected benefits with perceived barriers "It could help me, but it may be". Thus, combined levels of susceptibility and severity (perceived threat) provide the energy or force to act and the perception of benefits minus barriers (net benefit) provide a preferred path of action (30).

Perceived self-Efficacy: Self-efficacy is defined as the conviction that one can successfully execute the behavior required to produce the outcomes (30).

Cues to Action: HBM included the concept of cues that can trigger actions. For example, thought that readiness to take action (perceived susceptibility and perceived benefits) could only be potentiated by other factors, particularly by cues to instigate action, such as bodily events or by environmental events, such as media publicity (30).

2.10 Predictors of cervical cancer screening practice: HBM perspective

1. Modifiers of cervical cancer screening and cervical cancer screening practice

Socio-demographic characteristics: Socio-demographic characteristics can play a role in uptake of cervical cancer screening programs (57). Study done in Mekele, Ethiopia among age eligible women has reported significant association between perceived severity of CC and age, educational qualification, monthly income, marital status, employment and residential area but the role in uptake of cervical cancer screening participation is not clear (58).

Studies showed that women irrespective of their socio-demographic characteristics were aware of the benefits of doing cervical cancer screening (48, 60). This is supported by study in Botswana, when perceived benefit of cervical cancer screening was cross tabulated with socio-demographic

characteristics, there was no significant association between perceived benefits and socio-demographic characteristics (p>0.05) (57). Educational qualification, income, marital status and age were negatively associated with perceived barriers to cervical cancer screening as those who are educated, have high family income, above the age of 35 years and are married were more likely to have done cervical cancer screening than their counterparts (21, 58, 60).

Knowledge: Inadequate knowledge about cervical cancer was responsible for no uptake of cervical cancer screening among HIV-positive women (21, 46). A qualitative study done in Nigerian women showed that 72 participants had never heard of cervical cancer and none out of 82 of the participants ever screened (55).

2. Perception about cervical cancer (Perceived susceptibility and severity (Percieved threat))

Cervical cancer screening uptake among women is higher if the risk of cervical cancer is perceived. The higher the perceived susceptibility to cervical cancer, the more likely an individual will take steps to initiate preventive actions (30). Women who perceived cervical cancer as serious with medical, social and economic consequences were ten times more likely to undergo cervical screening than those that do not (55). Low perceived susceptibility to cervical cancer amongst women, aged 42 and older, contribute to limited utilization of cervical screening services, explaining why 80% of cervical cancer patients in Malawi were diagnosed during the late inoperable stages (61).

3. Perception about cervical cancer screening (Perceived benefit, barrier (Net-benefit) and self-efficacy)

If a woman perceives personal susceptibility (severity) cervical cancer screening uptake depends on her belief regarding the benefit. Women who believed that cervical cancer is not treatable but preventable via screening were more likely to uptake screening (62). Belief that cervical cancer is not preventable was responsible for 10.2% screening rate among 38.6% participants aware of cervical cancer screening. It was also reported that women who believed that screening could improve survival were ten times more likely to take up cervical cancer screening than those that do not (55). No significant association was found between perceived barriers for cervical cancer screening and screening for cervical cancer ($x^2 = 0.153$; $p = 0.696$) (63). Systematic review and Meta-analysis carried out in Nigeria revealed that confidence in one's ability to uptake cervical

cancer screening (self-efficacy)was responsible for 76% and 81% of women ever screened reporting screening once every 3 years (55).

4. Cues to action for cervical cancer screening practice

Increased cervical cancer screening uptake was observed among women following their contact with nurses who cued them to screening through education. Similarly, the likelihood of cervical-cervical screening was reported among women who had contact with survivors of cervical cancer, mass media, had reminder from health workers or were encouraged by family members to go for screening (48, 62, 64).

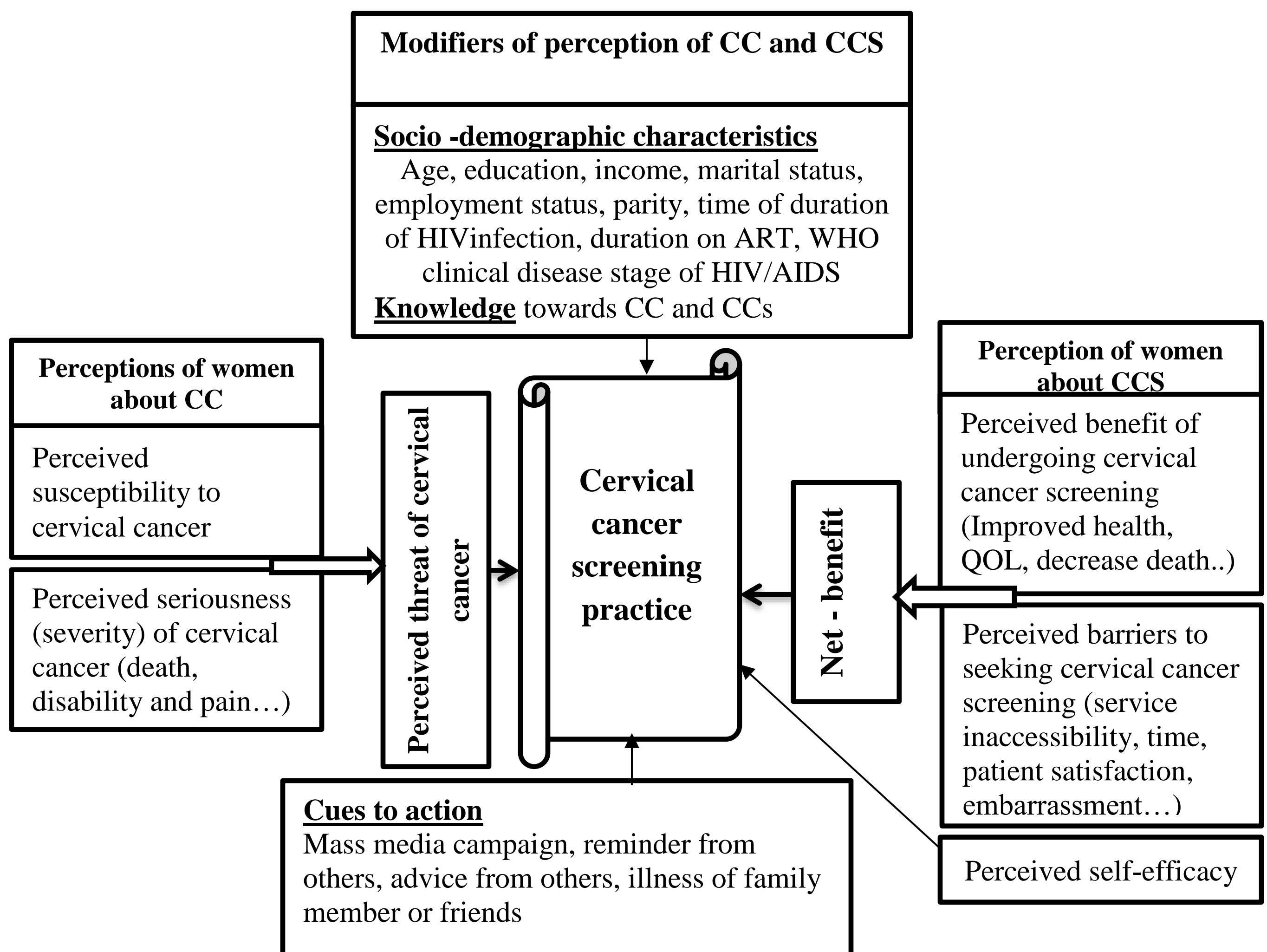


Figure 1: Conceptual framework for predictors of cervical cancer screening practice adapted from CHBM (30) and modified accordingly.

3. Objective

3.1 General objective

To identify predictors of cervical cancer screening practice among HIV positive women attending adult ART clinics in Bishoftu town, East Shoa, Ethiopia, 2018: the application of health belief model.

3.2 Specific objectives

1. To assess cervical cancer screening practice of HIV positive women.
2. To determine whether HIV positive women's perception towards cervical cancer predict cervical cancer screening practice.
3. To determine whether HIV positive women's perception towards cervical cancer screening predict cervical cancer screening practice.
4. To determine whether cues to action predict cervical cancer screening practice.

4. Method and materials

4.1 Study area

The study was conducted in Bishoftu town which is located at 47km south east of Addis Ababa, the capital city of Ethiopia. According to 2007 census projection for 2016, the total population of the town was 119, 845. The main languages spoken in the town are Afaan Oromo and Amharic. Bishoftu is one of tourism attractive place in the country. It has 9 kebele and 3 sub cities. Most people in the town are engaged in commercial activities. Bishoftu has one General hospital, four health centers, 13 private clinics and 6 drug stores (65, 66).

Anti-retroviral treatment (ART) service has given in the Bishoftu hospital and Bishoftu health center. Bishoftu Hospital was established in 1949 and started ART service provision in 2005. Currently it has three health officers and three BSc nurses in the ART clinic. Bishoftu Health center was established in 1973 and started ART service provision in 2009. Currently only one health officer is working in the ART clinic. The total number of people living with HIV/AIDS (PLWHA) in Bishoftu is about 23,410. Out of the total PLWHA, 4563 men, 5601 women and 13,246 orphan and variable children (65, 66). Currently out of the total adult PLWHA 4164 are registered and actively followed in the ART clinics, out of them 2827 are women. The current appointment schedule for the ART clients is one, two and three months based on their WHO clinical stage of the disease, CD4 count and viral load.

Cervical cancer screening service is available only in Bishoftu hospital which is provided twice a week with two trained screening service providers. Bishoftu town is chosen for this particular study because screening service for cervical cancer is given and also according to 2016 Ethiopia Federal Ministry of Health and Oromia national regional state catch up campaign, it was among the few places in Ethiopia where HIV prevalence is relatively high.

4.2 Study period

Study was conducted from January 15 to April 5, 2018.

4.3 Study Design

Facility based cross-sectional study design was conducted.

4.4Population

4.4.1 Source population

All HIV positive women in Bishoftu town, East Shoa, Ethiopia.

4.4.2 Study population

All HIV positive women who were on ART and on follow up in ART clinics found in Bishoftu town, East Shoa, Ethiopia.

4.4.3 Sampling frame

Complete and updated list of ART register identification number of all HIV positive women who were on ART and on follow up in ART clinics found in Bishoftu town, East Shoa, Ethiopia.

4.4.4 Samples

All sampled HIV positive women who were on ART and visit ART clinics in the selected health institution of Bishoftu town during study period and fulfilled the inclusion and exclusion criteria.

4.5 Inclusion and exclusion criteria

4.5.1 Inclusion criteria

- Age above18 years
- HIV positive women who were registered and visit the ART clinic

4.5.2 Exclusion criteria

- HIV positive women who had confirmed cancer of the cervix
- HIV positive women who developed ART-Anti Tuberculosis (TB) drug reaction

4.6 Sample size determination

The required sample size for each specific objective was calculated by using both single and double population proportion formula using Open-epi software version 2.3 and from the samples calculated for each specific objective, the maximum sample size (482) which was the sample size calculated for the first objective was taken for this study (table one).

Table 1: Sample size calculation for predictors of cervical cancer screening practice in Bishoftu, Ethiopia, 2018

Objective	Variables	Assumptions	Sample size calculated
1	CC screening practice	P=24% (26)	482#
		d=4%	
		zα/2= 1.96	
2	Perceived susceptibility	P=11 (26)	438
		OR=1.086	
		Power=80%	
		CI=95%	
		Non-response rate=10%	
3	Perceived Barrier	P=90.7 (67)	425
		OR= 4.64	
		Power=80%	
		CI=95%	
4	Cues for action	P=50 (No previous study)	326
		OR=2	
		CI=95%	
		Power 80%	
		Non-response rate=10%	

#: Indicates maximum sample size calculated and used for this study.

4.7 Sampling procedures

There are 18 health institutions in Bishoftu town. Currently, two of the institutions; Bishoftu General Hospital and Bishoftu health center provide ART service. The sample size was proportionally allocated to these health institutions based on three months ART clients flow prior to the data collection.

Out of 2827 total number of HIV positive women visiting ART clinics in Bishoftu town, two women who had confirmed case of cervical cancer and five women who developed ART/Anti TB drug reaction were excluded before proportional allocation of the study participants to each health

institution. Then the calculated sample size was allocated proportionally to the size of the clients of the two health institutions by rule of probability proportional to size sampling (PPS) (figure two).

Finally the study participants were selected from each health institution using simple random sampling technique, by computer aided random selection using the participants ART register identification number as sampling frame after filtering those who are excluded and Open epi software version 2.3 by the principal investigator.

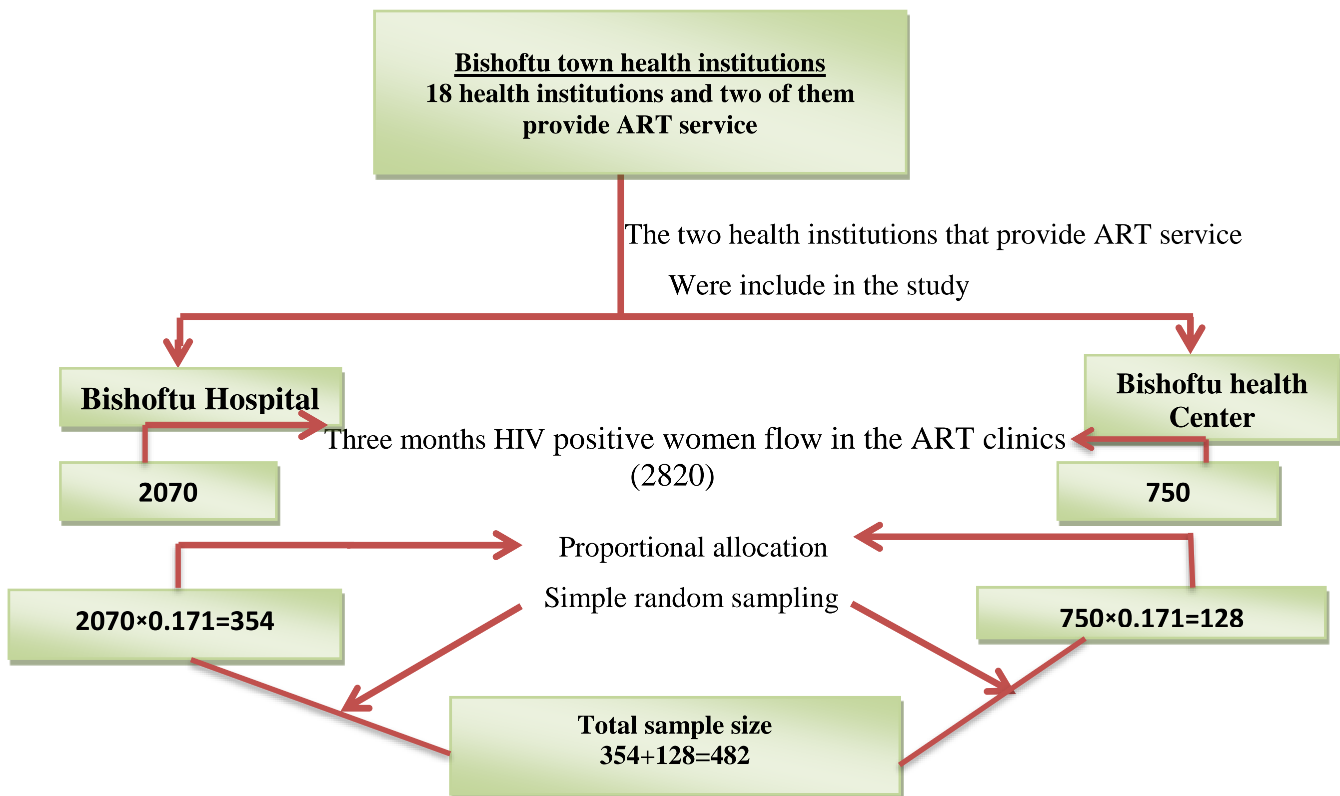


Figure 2: Schematic presentation of sampling procedure proportionally allocated by (p*n/N)

4.8 Study variables

4.8.1 Outcome variable

- Cervical cancer screening practice

4.8.2 Predictor variables

- Perceived susceptibility } Perceived-threat
- Perceived severity
- Perceived benefit } Net-benefit
- Perceived barriers
- perceived self-efficacy
- cues for action

Covariates

- Socio-demographic factors
  - ✓ Age
  - ✓ Marital status
  - ✓ Education
  - ✓ Occupation
  - ✓ Income
  - ✓ Parity
- Knowledge towards cervical cancer screening
- Duration of HIV infection
- Duration on ART
- WHO disease stage of HIV/AIDS
- CD4 count

4.9 Operational definitions

- **Cervical cancer screening:** Steps or procedures taken to identify HIV positive women with any form of cervical changes and those without any form of cervical changes using available method of screening.
- **Cervical cancer screening practice:** The action of ever use of available cervical cancer screening service by HIV positive women.

- **Knowledge**: The responses of knowledge questions were summed up and a total score was computed with possible values ranging from 0 to 40. The higher scores indicated having high knowledge towards cervical cancer and cervical cancer screening.
- **Perceived susceptibility**: The responses of perceived susceptibility questions will be summed up and a total score computed with possible values ranging from 5 to 25. The higher scores indicated having high perceived susceptibility towards cervical cancer.
- **Perceived severity**: The responses of perceived severity questions will be summed up and a total score computed with possible values ranging from 9 to 45. The higher scores indicated having high perceived severity towards cervical cancer.
- **Perceived threat:** is the sum score of perceived susceptibility plus perceived severity.
- **Perceived benefit**: The responses of perceived benefit questions will be summed up and a total score computed with possible values ranging from 6 to 30. The higher scores indicated having high perceived benefit towards cervical cancer screening.
- **Perceived barrier:** The responses of perceived barrier questions will be summed up and a total score computed with possible values ranging from 15 to 75. The higher scores indicated having high perceived barrier towards cervical cancer screening.
- **Net benefit:** is the sum score of perceived benefit minus perceived barrier.
- **Self-efficacy**: The responses of perceived self-efficacy questions will be summed up and a total score computed with possible values ranging from 5 to 25. The higher scores indicated having high perceived self-efficacy towards cervical cancer screening.
- **Cues for action:** The responses of cues for action questions were summed up and a total score has computed with possible values ranging from 4 to 8. The higher scores indicated having high cues for towards cervical cancer screening.

4.10 Data collection tool and process

Data has collected using an interviewer administered structured questionnaire. The structured questionnaire was adapted from the principle of 1993 Champion's revised Health Belief Model Scale (CHBMS) for the contracts of HBM (56, 59) and previous published similar studies for socio-demographic characteristics, knowledge, source of information and cervical cancer screening practice (24, 26, 58, 63, 68) by the principal investigator.

The questionnaire had ten sections that look at the socio-demographic characteristics and HIV/AIDS related factors, knowledge towards cervical cancer and cervical cancer screening, source of information about cervical cancer and cervical cancer screening, cervical cancer screening practice, perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefits of having cervical cancer screening, perceived barriers to seeking cervical cancer screening, perceived self-efficacy to practice cervical cancer screening and cues for action to practice cervical cancer screening of respondents.

Knowledge towards cervical cancer and cervical cancer screening consisted of a total of 14 items with yes or no questions given one point score for each correct response and zero if not. Each question for HBM constructs except cues to action was scored using a 5 point Likert scale ranging from strongly agree (5) to strongly disagree (1).

Perceived susceptibility which was defined as the views of HIV positive women regarding their risk of having cervical cancer has a total of 5 items. Perceived severity of cervical cancer which was a subjective assessment of how serious cervical cancer is viewed by these HIV positive women has 9 items.

Perceived benefit which was viewed as the perception that cervical cancer screening will result to early detection of cervical cancer, delay progression of cervical cancer and subsequently lead to decrease mortality due to cervical cancer has 6 items. Perceived barrier which was viewed as obstacles that prevent from participating in the available cervical cancer screening programs has 15 items.

Perceived self-efficacy which was viewed as the conviction that HIV positive women can successfully execute the behavior required to practice cervical cancer screening consisted of 5 items and cues for action which was viewed as trigger actions to practice cervical cancer screening consisted of 4 items with ‘yes or no’ questions and rated one for no and two for yes responses. The categorical dependent variable rated yes or no was whether a woman had ever had cervical cancer screening.

The questionnaire was prepared in English and translated by language expert from English version to Amharic language then to Afaan Oromo before data collection. Pre-testing of the questionnaire on 10% of the total sample size had carried out at Adama Hospital two weeks prior to the actual

data collection to assess the cultural sensitivity, clarity of the items and to check if the questionnaire would be able to collect relevant information as desired. Correction was taken accordingly, for instance, before pretest items for perceived severity and benefit had similar ends (positive end), and the response was similar throughout the questionnaires. But after pre-test, mixing of positive and negative endpoints on perceived severity and benefit items was done to minimize the risk of response set or a tendency to answer questionnaire items in the same way regardless of their content.

Three Health officers from Bishoftu Hospital and one Health officer from Bishoftu health center were selected for data collection based on their experience of data collection from ART clinic for confidentiality purpose and one BSc nurse from Bishoftu hospital supervised the data collection process. One day training was provided about the objective, methodologies, tool and data collection techniques of the study by the principal investigator. There was continuous supervision to control the data collection procedure by the supervisor and close follow up of the whole data collection process by principal investigator. The interview was conducted in ART counseling room to create confidentiality within a secure environment. Each interview had taken an average of 40 minutes.

4.11 Data quality assurance

The questionnaire was prepared in English and later translated to local languages by different translators to keep the consistency of the questionnaire. Pre-testing of the questionnaire on 10% of the total sample size (49 participants) has carried and the questionnaire was modified based on the result of the pretest. The data was collected by experienced ART service providers. One day training has provided about the objective, methodologies, tool and data collection techniques of the study. Data was intensively cleaned and negatively stated items were reversed before running any kind of analysis.

To address the limitation of HBM which is measurement variability (30), factor analysis to check whether items were loaded to their respective constructs and internal consistency of the items using cronbach alpha were determined (Annex five).

The items were loaded on five factors with each factor had Eigen-value of 7.391, 5.994, 4.811, 3.219, 2.139 and 58.87 % of total variance explained. In order of percentage variance explained, represented by the first dimension were perceived severity (18.38%), second perceived

susceptibility (12.69%), third perceived self-efficacy (11.88%), fourth perceived barrier (10.09) and the last dimension were perceived benefit (5.83%). One item with component matrix less than 0.4 from perceived severity and three from perceived barrier were deleted.

The Cronbach alpha > 0.7 (69) confirmed internal consistency of the dimension, which was 0.90 for perceived susceptibility, 0.87 for perceived severity, 0.85 for perceived barrier, 0.77 for perceived self-efficacy and 0.69 for perceived benefit and 0.69 for cues to action. The sample size of the current study was adequate for factor and reliability analysis (Kaiser-Meyer-Olkin (KMO) = 0.721).

4.12 Data management and analysis

The responses in the completed questionnaire were coded and entered into Epi-data version 4.2.0.0 and was exported to Statistical Packages for Social Sciences (SPSS) version 23 for cleaning, editing (recoding, checking for missing values, and outliers accordingly) and for analysis.

Required assumptions for this study (normality of the data, homogeneity of variance, multicollinearty, and interaction) were checked before running any kind of analysis. Existence of Multicollinearty between each of the constructs of health belief model including knowledge was checked and there were no multicollinearty among them (VIF<10). Existence of interaction among perceived susceptibility and perceived severity (p=0.20), perceived benefit and perceived barrier (p=0.38), perceived threat and net-benefit (p=0.22), perceived susceptibility and cues to action (p=0.06) were checked and there were no effect modification between them.

The data analysis ranged from the basic description to the identification of potential predictors of cervical cancer screening practice. All analysis has compared HIV positive women who had ever had cervical cancer screening with who had never had cervical cancer screening. First the descriptive statistics was used to describe frequency distribution, proportion, measures of central tendency and dispersion. Knowldege and perception of study participants was measured using HBM constructs and treated as continuous variables (70). For all constructs of HBM, the responses were summed up and a total sum score of their responses was computed with possible values ranging from minimum to maximum value.

Independent sample t-test was used to determine whether mean differences existed for perceived susceptibility, perceived seriousness and perceived threat towards cervical cancer, perceived

barriers, perceived benefits, perceived self-efficacy, perceived net-benefit and cues to action towards cervical cancer screening, between women who had ever screened for cervical cancer and women had never screened for cervical cancer.

Crude odds ratios and 95% confidence intervals were generated from binary logistic regression as measures of associations for each socio-demographic characterstics, HIV/AIDS related variables, knowledge and for aggregate score of each health belief model constructs with cervical cancer screening practice.

A multivariable logistic regression was used to identify predictors of cervical cancer screening practice by controlling the possible confounder. Based on P-values less than 0.25 in bivariate analysis (71), consideration of multicollinearity, clinical significance and maximum number of variables which is reasonable to enter in to the model (72), 12 variables were included in multivariable logistic regression analysis. Statistical significance for the multiple logistic regression analysis was set at $p \leq 0.05$. The Hosmer-Lemeshow goodness of fit test was used to check whether the model adequately fits the data in this study. The result was presented using tables, graphs and charts.

4.13 Ethical consideration

Ethical approval was obtained from Research Ethics Committee (REC) of School of Public Health, College of Health Sciences of Addis Ababa University. Letter of support was written to Bishoftu health bureau from Addis Ababa University School of public health to inform them about the study. Permission letter for the health facilities which were included in the study was taken from Bishoftu health bureau to ask permission to undertake the study.

The trained data collectors from the ART clinics explained the objective of the study and all the necessary information to the study participants. The participants were informed that the information will be accessed by the principal investigator. Written informed consent was obtained from the study participants. Data was kept confidential and anonymous and it was used only for this research purpose.

The study participants informed that there were no incentives (no direct benefit) given to respondents but the result of the study will be disseminated to concerned bodies working on

cervical cancer in order to take action on the problem related with cervical cancer screening service utilization. They were also informed that, there was no harm due to participating in the study except consuming study participant's time for answering the questions (average of 40 minutes).

Some questions seemed to be sensitive and personal. Care has been taken by the trained ART clinic staff data collectors not to cause problem or difficulties but for any one of the respondents who might be emotional and need counseling, linkages of them with their respective counselor in the ART clinic was planned but no actual scenario happened during the data collection process. Respondents were not forced to answer questions and could withdraw at any time if they did not want to participate anymore.

4.14 Dissemination plan

After completion of the research, the final result will be submitted to Addis Ababa University School of public health. The results of the study will be presented during thesis defense and after approval of the study; the final result document will be disseminated to different stakeholders that will have a contribution to improve women's health and related services. Finally, efforts will be made to present in various seminars, workshops and for publication of the research in national or international reputable journals.

5. Results

From 482 samples, four of them missed their ART appointment, three of them were excluded because of incomplete data and then total of 475 HIV-positive women were participated and completed the interview, giving a response rate of 98.50%.

5.1 Socio-demographic characteristics of respondents

The age of the respondent's ranged from 18 to 67 years with mean age of 36.20 ± (SD 10.30) and median age of 34.00. Of the total participants, almost all 470 (98.90%) were from Bishoftu. Half of the participants were Orthodox in religion followed by Muslim 171 (36.00 %). Most of the participants, 215 (45.30%) were Oromo in ethnicity. Majority of the respondents 298 (62.70%) were married. Majority 228 (48.00%) of the respondents had one child, 30(6.30%) were grand Para. Two-third of the participants 319(67.10%) did not attend formal education. About half, 252(53.10%) of respondents were government employed. One hundred thirty eight (29.10%) of respondents had ≤800 Ethiopian birr monthly income. (Table two).

Table 2: Socio-demographic characteristics of the study participants, Bishoftu, Ethiopia, 2018.

Variables		Frequency(n=475)	Percentage
Religion			
	Orthodox	235	49. 50
	Muslim	171	36.00
	Protestant	51	10.70
	Catholic	18	3.80
Ethnicity			
	Oromo	215	45.30
	Amhara	174	36.60
	Tigrie	57	12.00
	Gurage	29	6.10
Marital status			
	Married	298	62.70
	Divorced	80	16. 90
	Widowed	57	12.00
	Single	40	8.40

Parity		
None(nulli para)	103	21.70
One	228	48.00
Two-four(multi para)	114	24.00
>four(grand para)	30	6.30
Educational level of the participant		
Unable to read and write	109	22.90
Able to read and write but no formal education	210	44.20
Elementary	119	25.10
High school	29	6.10
Diploma and above	8	1.70
Occupational status of the participant		
Unemployed	112	23.60
Gov't employed	252	53.00
Self-employed	111	23.40
Educational status of the participants' husband (n=298)		
Unable to read and write	17	5.70
Able to read and write but no formal education	177	59.40
Elementary	69	23.20
High school	22	7.40
Diploma and above	13	4.30
Occupational status of participants' husband (n=298)		
Unemployed	7	2.35
Employed	240	80.54
Self-employed	51	17.11
Monthly income in ETB (n=475)		
1st quartile(≤800)	138	29.00
2nd quartile(801-1100)	100	21.10
3rd quartile(1101-200)	122	25.70
4th quartile(>2000)	115	24.20

ETB: Ethiopian birr (1ETB~27US$).

5.2 HIV/AIDS related factors of the study participants

Majority of the participants 236(49.70%) have diagnosed as HIV positive before four years ago. About half of the participants 240(50.50%) were started ART before four years. Most of the participants 195(41.50%) were in WHO disease stage one. On patient card review, majority of the participants 431(90.70%) had CD4 count of greater than or equal to 500 cells/µl, and the remaining had CD4 count less than 500 cells/µl (Table three)

Table 3: HIV/AIDS related factors among HIV-positive women, Bishoftu, Ethiopia, 2018

Variables		Frequency(n=475)	Percentage
WHO clinical stage of HIV/AIDS			
	1	195	41.10
	2	191	40.20
	3	51	10.70
	4	38	8.00
Duration of HIV infection			
	<4	236	49.70
	4-8	143	30.10
	>8	96	20.20
Duration on ART			
	<4	240	50.50
	4-8	148	31.20
	>8	87	18.30
CD4 count of the patient			
	<500 µl	44	9.30
	≥500 µl	431	90.70

µl: Micro-liter

5.3 Source of information and knowledge about cervical cancer and cervical cancer screening

Four hundred twenty one (88.60%) have heard about cervical cancer and from those participants who had ever heard about cervical cancer 342(81.20%) of them heard from health care providers for the last time and 67(15.90%) heard from media. Of the total respondents who ever heard about CC, 398(94.50%) heard about the presence of cancer screening. Out of 398 participants who have heard about cancer screening 248(62.30%) of them heard from healthcare providers and 138(34.70%) from media for the last time (table four).

Knowledge about cervical cancer and its screening was analyzed as a continuous variable with observed values ranging from 20 to 34 for with the mean knowledge score of 25.93 (SD±2.31) (table four).

Table 4: Source of information and knowledge about cervical cancer and cervical cancer screening of respondents, Bishoftu, Ethiopia, 2018.

Variables	Frequency	Precent
Heard about cervical cancer (n=475)		
Yes	421	88.6
No	54	11.4
Source of info about cervical cancer for the last time (n=421)		
Health care providers	342	81.20
Media(print and non-print)	67	15.90
Close relatives(family/friends)	12	2.90
Heard about Cervical cancer screening (n=421)		
Yes	398	94.50
No	23	5.50
Source of info about Cervical cancer screening for the last time(n=398)		
Health care providers	248	62.30
Media(print and non-print)	138	34.70
Close relatives(family/friends)	12	3.00

	Scale range	**Minimum observed value**	**Maximum observed value**	**Mean score of respondents**	**SD**
Knowledge°	0-40	20	34	25.93	2.31

°Continuous variable, SD: standard deviation

5.4 Practice of cervical cancer screening among HIV positive women

Among all respondents just a quarter of them, 118 (24.80%, 95% CI 21.00% - 28.00%) had cervical cancer screening experience in the past and 357(75.20%, 95% CI 71.00% - 78.00%) were never screened (figure three).

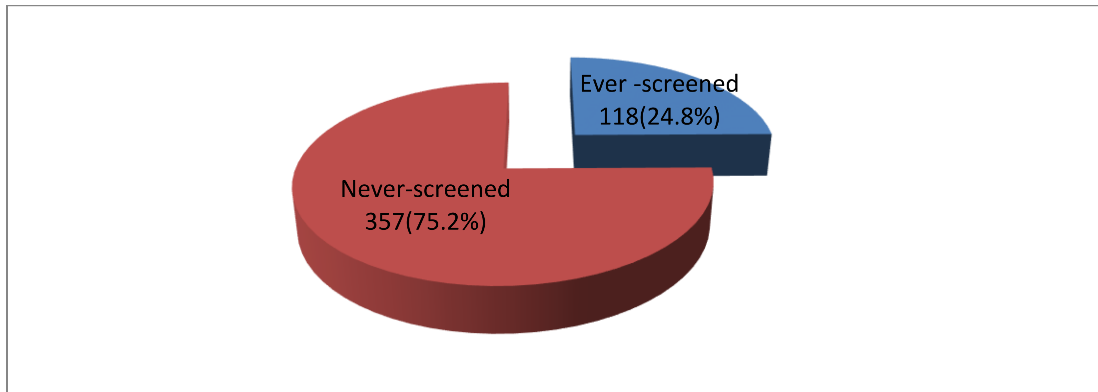


Figure 3: Cervical cancer screening practice among HIV positive women, Bishoftu, East Shoa, Ethiopia, 2018 (n=475)

5.5 Reason and frequency of cervical cancer screening practice among HIV positive women who had screened

Majority of the participants 76(64.40%) who had screened for cervical cancer mentioned health care provider advice (recommendation) as reason for being screened. Of the 118 respondents who had ever screened for cervical cancer, 98 (83.00%) actually did the screening within the past one year. One hundred four (88.10%) of the ever screened had screened after diagnosed for HIV/AIDS (table five).

Table 5: Reason and frequency of cervical cancer screening practice among HIV positive women who had screened, Bishoftu, East Shoa, Ethiopia, 2018

Variables	Frequency(n=118)	Percentage
Reason for screening		
Health care provider advice.	76	64.40
Being sick (Illness)	39	33.10
Relatives(family/friends) advise	3	2.50
Screened after HIV diagnosis		
Yes	104	88.10
No	14	11.90
Frequency of screening		
Once	68	57.60
Twice	50	42.40
Last screening time		
Just a year	98	83.00
Two years before	8	6.80
Three years before	12	10.20

Illness inludes: genital warts, foul smelling vaginal discharge, bleeding during sexual contact

5.6 Reason for not being screened among HIV positive women who had never screened

Those women who had never screened (357) were asked their reasons and choosing more than one reason was possible. The most identified reason for not considering cervical cancer screening were fear of positive result (28.00%), feeling of a woman as being healthy (20.00%) and Partner attitude (15.00%) (Figure four).

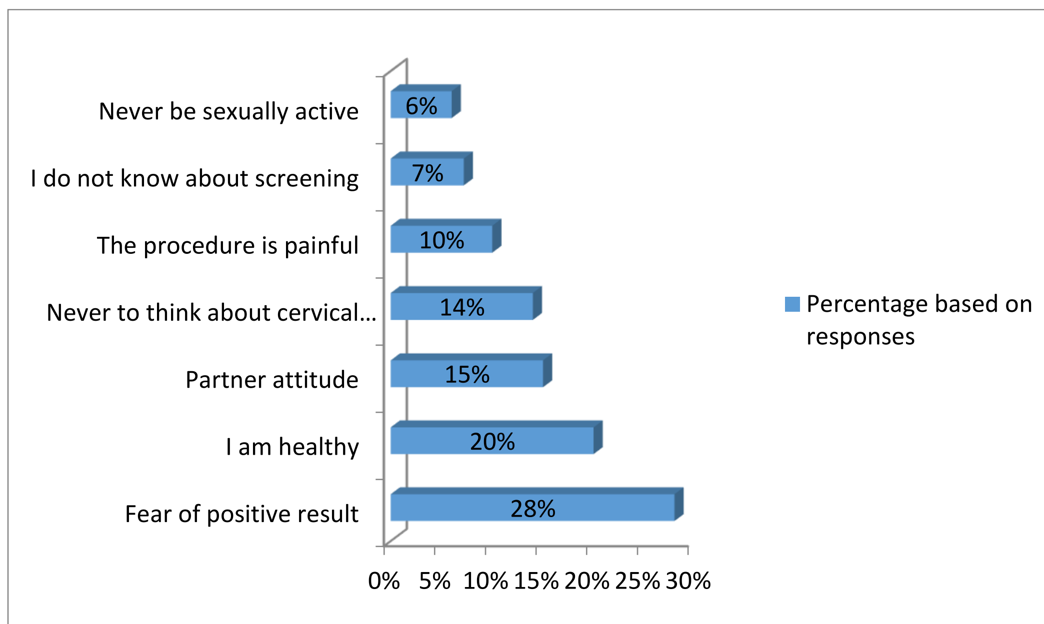


Figure 4: Reason for not-screened among HIV positive women, Bishoftu, Ethiopia, 2018

5.7 Socio Demographic, Knowledge and HIV/AIDS related factors associated with cervical cancer screening

Out of 44 young HIV-positive women only 8 (18.20%) of them were screened and out of 10 old age only 3(30%) of them were screened. Out of 298 married women, 92(30.90%) of them were screened and out of 40 single HIV-positive women, 6 (15.00%) them were screened for cervical cancer. Out of 144 HIV-positive women who had more than one child, only 21 (15%) them were screened for cervical cancer. Out of 156 study participants who attended formal education, 24(15.38%) of them were ever-screened for CCS and out of 363 employed study participants 107(29.47%) of them were screened (table six).

Results of bivariate logistic regression analysis showed that among the Socio demographic variables Religion, Marital status, Parity, Educational status of the participant, Occupation of the participants, were significantly associated ($p<0.05$) with cervical cancer screening practice. But Age, Educational status of the participant's husband, Occupation of the participant's husband and monthly income of the respondent were not significantly associated with cervical cancer screening in bivariate analysis ($p>0.05$) (table six).

Knowledge about cervical cancer and cervical cancer screening were not significantly associated with cervical cancer screening practice (p=0.054) (table six).

Table 6: Socio Demographic factors and knowledge associated with cervical cancer screening practice, Bishoftu, Ethiopia, 2018.

Variables	Screened (n=118) n(%)	Non screened (n=357) n(%)	COR(95%CI)	P-value
Age (in year)				
18-24(young)	8(18.20)	36(81.80)	1	
25-40(adult)	75(25.60)	218(74.40)	1.548(0.689-3.479)	0.290
41-60(middle age)	32(25.00)	96(75.00)	1.500(0.632-3.560)	0.358
≥60(old age)	3(30.00)	7(70.00)	1.929(0.408-9.126)	0.408
Religion				
Catholic	7(38.90)	11(61.10)	1	
Protestant	10(19.60)	41(80.40)	0.383(0.119-1.239)	0.109
Muslim	67(39.20)	104(60.80)	1.012(0.374-2.741)	0.981
Orthodox	34 (14.50)	201(85.50)	**0.266(0.096-0.733)**	**0.011***
Marital status^				
Single	6 (15.00)	34(85.00)	1	
Married	92 (30.90)	206(69.10)	**2.531(1.027-6.237)**	**0.044***
Divorced	11 (13.80)	69(86.30)	0.903(0.308-2.650)	0.853
Windowed	9(15.80)	48(84.20)	1.062(0.346-3.265)	0.916
Parity^				
None(nulli para)	17 (16.50)	86(83.50)	1	
One	80 (35.10)	148(64.90)	**2.734(1.520-4.918)**	**0.001***

2-4(multi para)	14 (12.30)	100(87.70)	0.708(0.330-1.520)	0.376
>4(grand para)	7 (23.30)	23(76.70)	1.540(0.570-4.157)	0.394
Educational level of the participantˆ				
Unable to read and	15(13.80)	94(86.20)	1	
Able to read	79(37.60)	131(62.40)	**3.779(2.049-6.971)**	**0.000***
Elementary	19(16.00)	100(84.00)	1.191(0.572-2.479)	0.641
High school	2(6.90)	27(93.10)	0.464(0.100-2.157)	0.328
12+	3(37.50)	5(62.50)	3.760(0.813-17.392)	0.090
Occupational status of the participantˆ				
Unemployed	11(9.80)	101(90.20)	1	
Gov't employed	87(34.50)	165(65.50)	**4.841(2.467-9.502)**	**0.000***
Self employed	20(18.00)	91(82.20)	2.018(0.917-4.431)	0.081
Educational status of participants' husband (n=298)				
Unable to read and write	3 (17.60)	14(82.40)	1	
Able to read and write	73(41.20)	104(58.80)	3.276(0.909-11.809)	0.070
Elementary	9(13.00)	60(87.00)	0.700(0.167-2.926)	0.625
High school	3(13.60)	19(86.40)	0.737(0.129-4.210)	0.731
12+	4(30.80)	9(69.20)	2.074(0.373-11.528)	0.405
Occupational status of participants' husband (n=298)				
Unemployed	1(14.30)	6(85.70)	1	
Employed	75(31.30)	165(68.80)	2.727(0.323-23.054)	0.357
Self-employed	16(31.40)	35(68.60)	2.743(0.305-24.707)	0.368
Monthly income(n=475)ˆ				
1st quartile	38(27.50)	100(72.50)	1	
2nd quartile	30(30.00)	70(70.00)	1.128(0.639-1.990)	0.678
3rd quartile	31(25.40)	91(74.60)	0.896(0.516-1.558)	0.698
4th quartile	19(16.50)	96(83.50)	**0.521(0.281-0.966)**	**0.039***
Knowledge°			0.961(0.923-1.001)	0.054ˆ

°Continous variable, *Statistically significance association (P<0.05), ˆthose eligible for multivariable logistic regression (p<0.25).

WHO disease stages of HIV/AIDS, duration of HIV infection and duration on ART were significantly associated ($p<0.05$) with cervical cancer screening practice (table seven). CD4 count of the respondent were not significantly associated with cervical cancer screening in bivariate analysis ($p>0.05$) (table seven)

Table 7: HIV/AIDS related factors associated with cervical cancer screening practice among HIV-positive women, Bishoftu, Ethiopia, 2018.

Variables	Screened (118)%	Non-screened (357)%	COR(95%CI)	P-value
WHO clinical stage of HIV/AIDS				
1	33(16.90)	162(83.10)	1	
2	64(33.50)	127(66.50)	**2.47(1.53-4.00)**	**0.000***
3	11(21.60)	40(78.40)	1.350(0.628-2.901)	0.442
4	10(26.30)	28(73.70)	1.753(0.777-3.954)	0.176
Duration of HIV infectionˆ				
<4	75(31.80)	161(68.20)	1	
4-8	24(16.80)	119(83.20)	**0.43(0.258-0.726)**	**0.002***
>8	19(19.80)	77(80.20)	**0.530(0.299-0.938)**	**0.029***
Duration on ARTˆ				
<4	78(32.50)	162(67.50	1	
4-8	24(16.20)	124(83.80)	**0.402(0.240-0.672)**	**0.001***
>8	16(18.40)	71(81.60)	**0.408(0.255-0.858)**	**0.014***
CD4 count of the patient				
<500	9(20.50)	35(79.50)	1	
>=500	109(25.30)	322(74.70)	1.316(0.613-2.826)	0.481

*Indicates statistically significance association ($P<0.05$), ˆthose eligible for multiple logistic regression ($p<0.25$).

5.8 Descriptive scores for perception towards cervical cancer and its screening

The constructs of health belief model were analyzed as a continuous variable (70), with possible values ranging from 5 to 25 for susceptibility with the mean score of 18.48 (SD±4.50), from 9 to 45 for severity with the mean score of 33.65 (SD±8.59), from 7 to 30 for benefit with the mean score

of 23.75 (SD±3.63), from 38 to 72 for barrier with the mean score of 56.43 (SD±6.17), from 8 to 25 for self-efficacy with the mean score of 20.23 (SD±3.06) and from 5 to 8 for cues for action with the mean score of 6.68(SD±1.19) (table eight).

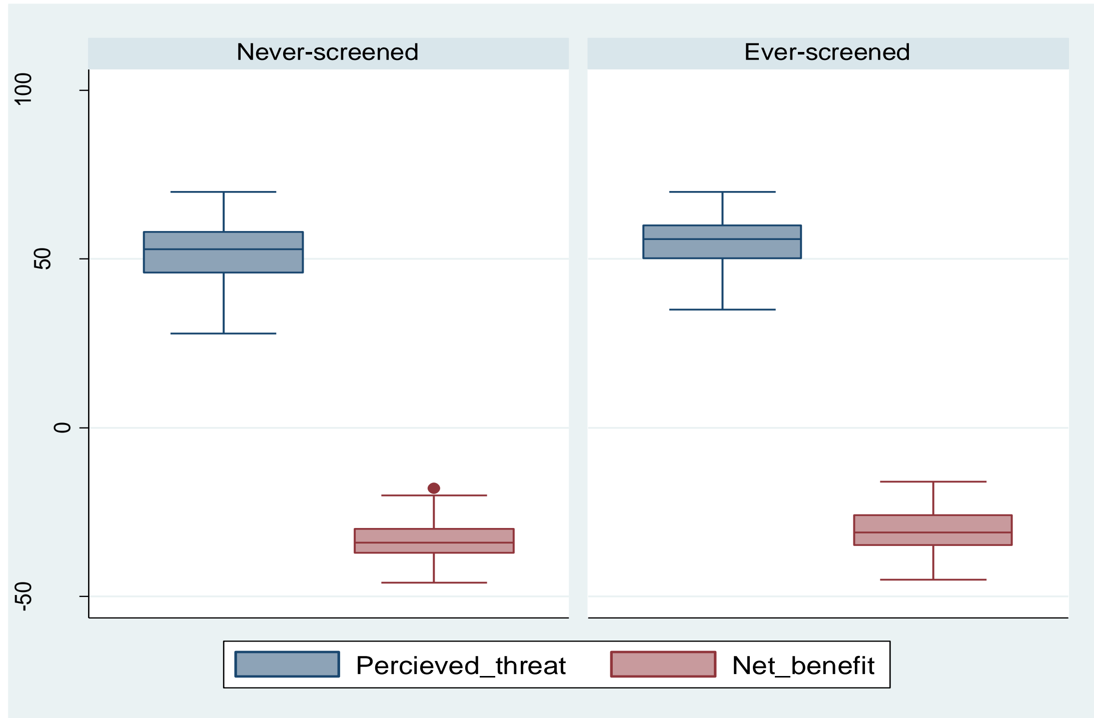
Table 8: Descriptive statistics for constructs of health belief model for HIV positive women visiting ART clinic in Bishoftu town, East Shoa, Ethiopia, 2018 (n=475)

S.no	Constructs	Scale range	Min. observed value	Max. observed value	Mean-score of the respondents	SD
1	**Perceived susceptibility°**	5-25	5	25	18.48	4.50
2	**perceived severity°**	9-45	9	45	33.65	8.59
3	**Perceived benefit°**	6-30	7	30	23.75	3.63
4	**perceived barrier°**	15-75	38	72	56.43	6.17
5	**perceived self-efficacy°**	5-25	8	25	20.23	3.06
6	**Cues for action°**	4-8	5	8	6.68	1.19

°indicates continuous variable, SD: standard deviation

Perceived threat is the sum score of perceived susceptibility plus perceived severity with mean score of 52.14(SD±9.85) and net benefit is the sum score of perceived benefit minus perceived barrier with mean score of -32.68(SD±5.80).

Comparing the ever and never screened groups, women who had screened had a slightly higher top score (i.e. screened women had more perceived threat and net-benefit than the non-screened HIV-positive women). The lowest edge (the range between which the lowest 25% of scores fall) is slightly smaller for screened than non-screened. The median for screened is higher than for non-screened (figure five).



- Indicates outlier value

Figure 5: perceived threat and net-benefit sum score among Ever screened and never screened HIV positive women, Bishoftu, Ethiopia, 2018

5.9 Comparison of HIV positive women perceptions among ever screened and never screened for cervical cancer

Independent sample t-test was used to examine the difference in perceived susceptibility, perceived severity, perceived benefits, perceived self-efficacy, perceived barriers, perceived threat, net benefit and cues to action between women who had ever screened and who had never screened for cervical cancer (table seven). There was a significant difference between the two groups in mean scores of perceived severity, perceived benefit, perceived barrier, perceived self-efficacy, perceived threat and net-benefit ($P < 0.05$) (table nine).

Women who had ever screened for cervical cancer had significantly higher perceived severity ($t = 2.316$; $P = 0.021$), higher perceived benefit ($t = 3.295$; $P = 0.001$), higher perceived self-efficacy ($t = 3.470$; $P = 0.001$), higher perceived threat ($t= 2.647$; $p=0.008$) and higher perceived net benefit ($t= 4.570$; $p=0.001$) but women who had ever screened for cervical cancer had lower perceived barrier ($t = -2.303$; $P = 0.022$) (table nine).

There was no significant mean difference for perceived susceptibility (t = 1.358; P = 0.175) and cues for action (t= -1.261; p=0.208) between women who had ever screened for cervical cancer and women who had never screened (table nine).

Table 9: Independent two sample t – test for comparison of perception among ever screened and never screened of respondents

S.no.	Predictor variables	Ever Screened		Never Screened		t-value	P-value	95% CI
		Mean	**SD**	**Mean**	**SD**			
1	**Perceived susceptibility**	18.97	4.36	18.32	4.50	1.358	0.175	-0.290, 1.589
2	**perceived severity**	35.23	7.50	33.13	8.80	2.316	0.021	0.318, 3.886*
3	**Perceived benefit**	24.69	3.65	23.43	3.57	3.295	0.001	0.507, 2.008*
4	**perceived barrier**	55.30	5.80	56.80	6.20	-2.303	0.022	-2.787, -0.220*
5	**perceived self-efficacy**	21.07	2.85	19.96	3.08	3.470	0.001	0.483, 1.747*
6	**perceived threat**	54.21	9.27	51.45	9.95	2.647	0.008	0.709, 4.795*
7	**Net benefit**	-30.61	6.36	-33.37	5.45	4.570	0.000	1.574, 3.950*
8	**Cues for action**	6.56	1.27	6.79	1.17	-1.261	0.208	-0.410, 0.089

*Indicates significant mean difference (P<0.05)

5.10 HIV positive women's perception associated with cervical cancer screening practice

Bivariate logistic regression was used to examine if perceived susceptibility, perceived severity, perceived benefits, perceived self-efficacy, perceived barriers, threat and net benefit predicted screening for cervical cancer (table ten).

Per a unit increase of total score of perceived severity towards cervical cancer, the chance of practicing cervical cancer screening was increased by 3.20%, (COR 1.032, 95% CI 1.004, 1.060). Per a unit increase in sum score of perceived benefit toward cervical cancer screening, the odds of practicing cervical cancer screening was increased by 11.80%, (COR 1.118, 95% CI 1.045, 1.196). Per a unit increases in total score of perceived self-efficacy towards cervical cancer screening, the odds of practicing cervical cancer screening increased by 15.60%, (COR 1.156, 95 % CI 1.063, 1.253). Per a unit increases in total score of perceived barrier towards cervical cancer screening, the odds of practicing cervical cancer screening decreased by 4.00%, (COR 0.960, 95 %, CI 0.930,

0.994). The other variables that significantly associated with cervical cancer screening practice in the bivariate analysis were threat which is the sum score of perceived susceptibility plus perceived severity and net benefit which is the sum score of perceived benefit minus perceived barrier. A unit increase in total score of threat, increased the chance of practicing cervical cancer screening by 3.10% (COR 1.031, 95 % CI 1.008, 1.055) and A unit increase in total score of perceived net benefit, increased the likely hood of practicing cervical cancer screening by 8.40% (COR 1.084, 95 % CI 1.046, 1.124) (table ten).

Among the constructs of health belief model perceived susceptibility (COR 1.034, 95% CI 0.985-1.084) and cues for action (COR 0.895, 95% CI 0.752-1.064) were not significantly associated with cervical cancer screening practice in bivariate analysis (table ten).

Table 10: Association between HBM constructs and cervical cancer screening, Bishoftu, East Shoa, Ethiopia, 2018.

Serial no.	Component	β	COR(95%CI)	P-value
1	**Perceived susceptibility**	0.033	1.034(0.985-1.084)	0.175
2	**perceived severity**	0.031	1.032(1.004-1.060)	0.022*
3	**Perceived benefit**	0.111	1.118(1.045-1.196)	0.001*
4	**perceived barrier**	-0.039	0.960(0.930-0.994)	0.022*
5	**perceived self-efficacyˆ**	0.145	1.156(1.063-1.253)	0.001*
6	**perceived threatˆ**	0.031	1.031(1.008-1.055)	0.009*
7	**Net benefitˆ**	0.810	1.084(1.046-1.124)	0.001*
8	**Cues for actionˆ**	-0.111	0.895(0.752-1.064)	0.208

*Statistically significance association (p<0.05), ˆeligible for multiple logistic regression (P<0.25).

5.11 Predictors of cervical cancer screening practice

Among socio demographic variables only participant occupation was significant in explaining cervical cancer screening practice. Furthermore among constructs of health belief model Perceived self-efficacy, perceived threat and net benefit were predictors of cervical cancer screening practice (table eleven).

Keeping all other factors constant, the chance of cervical cancer screening was about 6 times higher for those participants who were government employed (AOR 5.505, 95% CI 2.628, 11.532) and 3 times higher for those participants who were self-employed (AOR 3.047, 95%CI 1.298, 7.151) than those who were unemployed (table eleven).

After holding all other variables constant, per a unit increases in total score of perceived self-efficacy towards cervical cancer screening increased the odds of practicing cervical cancer screening by 24.20%, (AOR 1.242, 95 % CI 1.128, 1.368). After controlling possible confounding, a unit increase in total score of perceived threat increased the chance of practicing cervical cancer screening by 8.60% (AOR 1.086, 95 % CI 1.052, 1.120).

The other variable which independently associated with cervical cancer screening practice was net benefit, a unit increase in total score of perceived net benefit increased the odds of practicing cervical cancer screening by 18.10% (AOR 1.181, 95 % CI 1.122, 1.243) (table eleven). For this study the model adequately fits the data (p= 0.433).

Table 11: Predictors of cervical cancer screening practice among HIV positive women, Bishoftu, Ethiopia, 2018

Variables	COR(95%CI)	P-value	AOR(95%CI)	P-value
Marital status				
Single	1		1	
Married	2.531(1.027-6.237)	0.044	1.415(0.372-5.380)	0.610
Divorced	0.903(0.308-2.650)	0.853	0.625(0.138-2.837)	0.543
Windowed	1.062(0.346-3.265)	0.916	1.248(0.277-5.630)	0.773
Parity				
None(nulli para)	1		1	
One	2.734(1.520-4.918)	0.001	1.623(0.607-4.335)	0.334
2-4(multi para)	0.708(0.330-1.520)	0.376	0.687(0.246-1.916)	0.473
>4(grand para)	1.540(0.570-4.157)	0.394	1.077(0.288-4.031)	0.912
Educational level of the participant				
Unable to read&write	1		1	
Able to read&write	3.779(2.049-6.971)	0.000	1.559(0.620-3.919)	0.345
Elementary	1.191(0.572-2.479)	0.641	1.335(0.541-3.295)	0.531
High school	0.464(0.100-2.157)	0.328	0.319(0.049-2.059)	0.230
12+	3.760(0.813-17.392)	0.090	5.664(0.906-5.404)	0.064

Occupational status of the participant				
Unemployed	1		1	
Gov't employed	4.840(2.467-9.502)	0.000	**5.505(2.628-11.532)**	**0.020***
Self employed	2.018(0.917-4.431)	0.081	**3.047(1.298-7.151)**	**0.018***
Monthly income(n=475)				
1st quartile	1		1	
2nd quartile	1.128(0.639-1.990)	0.678	1.059(0.510-2.196)	0.879
3rd quartile	0.896(0.516-1.558)	0.698	1.251(0.619-2.528)	0.532
4th quartile	0.521(0.281-0.966)	0.039	0.650(0.312-1.355)	0.250
Time of HIV diagnosis in year (n=475)				
<4	1		1	
4-8	0.433(0.258-0.726)	0.002	0.498(0.126-1.969)	0.320
>8	0.530(0.299-0.938)	0.029	0.734(0.190-2.827)	0.650
Duration of follow up for ART (n=475)				
<4	1		1	
4-8	0.402(0.240-0.672)	0.001	1.528(0.813-2.869)	0.188
>8	0.408(0.255-0.858)	0.014	1.410(0.540-3.681)	0.483
Knowledge°	0.961(0.923-1.001)	0.054	1.081(0.345-3.390)	0.894
Self-efficacy°	1.156(1.063-1.253)	0.001	**1.242(1.128-1.368)**	**0.000***
Threat°	1.031(1.008-1.055)	0.009	**1.086(1.052-1.120)**	**0.000***
Net- benefit°	1.084(1.046-1.124)	0.001	**1.181(1.122-1.243)**	**0.000***
Cues to action°	0.895(0.752-1.064)	0.208	1.009(0.816-1.249)	0.932

°continuous variables, *indicates predictor of cervical cancer screening practice (p<0.05).

6. Discussion

Cervical cancer screening offers protective benefits and is associated with a reduction in the incidence of invasive cervical cancer and cervical cancer mortality (14). This facility based study has showed that, out of 475 study participants, only a quarter of them were ever tested for cervical cancer in their life. This cervical cancer screening practice is too low and less than the National Ministry of Health goal of screening at least 80% or more of eligible women for cervical cancer (10). The level of screening in this study was comparable with the findings of the study conducted in Gonder, Ethiopia which showed that, the magnitude of ever screening for cervical cancer among HIV positive women was 24% (26).

The finding of this study on the other hand was higher compared with the study done among patients living with HIV/AIDS in Addis Ababa, Ethiopia (11.50%) (24) and study done in Zimbabwe (9%) (21). The higher uptake of screening service in this study could be explained by the improved expansion and access of screening centers, the enhanced nation-wide advocacy, media concern, community sensitization and awareness creation about the cervical cancer screening that has been put into effect time to time. The finding of the current study was slightly higher than the study done in Mekele, Ethiopia among age eligible women which was reported 19.80% cervical cancer screening service uptake (58). This variation possibly might be, HIV positive women may frequently visit health institutions and can get health professionals which are the main source of information and main reason for cervical cancer screening in the current study.

Despite the recent effort to screen all HIV positive women who are on ART and who were not screened before, the proportion of women screened for cervical cancer in this study is still low compared to the study conducted in developed countries such as USA which was self-reported screening uptake among HIV positive women were about 75% (45). This difference might be due to the fact that, considerable attention has been given early as before decades to cervical cancer prevention and impact of screening program on cervical cancer related death in developed countries compared to developing countries like Ethiopia and also screening was only available in the Bishoftu Hospital which provided the service twice per a week with only two providers, which might demand the users to travel far and cost for transport to reach there, to reschedule their program as per screening schedule of the Hospital, this could be another reason for low uptake of

screening. This finding therefore highlights the need for a focused intervention on cervical cancer screening service uptake to make sure for the effectiveness of screening service and to minimize cervical cancer mortality especially among high risk groups like HIV positive women.

In this study, there was difference between HIV positive women who had ever screened for cervical cancer and who had never screened in mean scores of perceived severity, perceived benefit, perceived barrier, perceived self-efficacy, perceived threat and net-benefit ($P < 0.05$). Women who had ever screened for cervical cancer had significantly higher perceived severity, higher perceived benefit, higher perceived self-efficacy, higher perceived threat and higher net benefit but women who had ever screened for cervical cancer had lower perceived barrier. This was consistent with the hypothesis of the Health Belief Model stated that, perceived severity and threat of cervical cancer, perceived benefit, perceived self-efficacy and net benefit about the preventive action of cervical cancer screening necessitate people to engage in preventive actions like cervical cancer screening service uptake (30).

There was no mean score difference for perceived susceptibility and cues for action between women who had ever screened for cervical cancer and women who had never screened. This is inconsistent with the Health Belief Model which hypothesizes that actors feel more susceptible than non-actors, for example; a woman must believe there is a possibility of getting cervical cancer before she will be interested in obtaining screening service for cervical cancer (30).

In this study, four variables namely; occupation of the participants, perceived self-efficacy, perceived threat and perceived net benefit were found as predictors of cervical cancer screening practice among HIV positive women.

We found that, the chance of cervical cancer screening was about 6 and 3 times higher for those participants who worked as government employed (AOR 5.505 95% CI: 2.628, 11.532) and self-employed (AOR 3.047 95% CI: 1.298, 7.151) compared to unemployed. This is likely because employed women have their own source of income, so that they can consider their health issues as priority. It might also be due to lack of finances for transport to a health facility which was reasoned as not to utilize health services might not be a problem since employed women has both the power and agency to take the screening service than unemployed. In addition it could be explained as employed women have more exposure to information and have different sources from which they

can gather information unlike unemployed women. This finding is consistent with a study done in Malawi among women who visited health centers (61).

A unit increases in total score of perceived self-efficacy towards cervical cancer screening increased the odds of practicing cervical cancer screening by 24.20% (AOR 1.242, 95% CI: 1.128, 1.368). This highlights the importance of belief or confidence of a woman on her ability to successfully execute the behavior required (cervical cancer screening service uptake) to prevent herself from cervical cancer. This was supported by the health belief model which stated that perceived self-efficacy is one of the predictor of cervical cancer screening practice and suggests that increasing women's perceived self-efficacy has the potential to increase the likelihood that HIV infected women will utilize screening service(30).

The finding was comparable with a systematic review conducted in Nigeria which revealed that confidence in one's ability to uptake cervical cancer screening was responsible for women reported to have ever attended screening(55). But it was inconsistent with the study conducted in HIV ambulatory clinics, Florida among HIV-positive women which showed that perceived self-efficacy was not significantly associated with CCS practice (45), this variation might be due to the difference in sampling, and socio-demographic characteristics.

The current study showed that a unit increase in total score of perceived threat toward cervical cancer increased the chance of practicing cervical cancer screening by 8.60% (AOR 1.086, 95%CI: 1.052, 1.120). Possibly this could be explained by the assumption of the health belief model, that a women is more likely to screen if she believes herself to be susceptible to cervical cancer and also considers the problem as serious, thus their health actions were motivated in relation to the degree of threat(30).

Additionally this was due to the facts that, the perceived threat lead HIV-positive women to perceive the impact of cervical cancer as devastating as HIV/AIDS, which might increase uptake of screening. Previous studies done in both developing and developed countries found the same finding which showed, perception of susceptibility to cervical cancer and perception of seriousness of cervical cancer to predict cervical cancer screening behavior (26, 45, 58, 62, 64).

The other variable which was positively associated with cervical cancer screening practice was perceived net benefit; a unit increase in total score of perceived net benefit increased the odds of

practicing cervical cancer screening by 18.10% (AOR 1.181, 95%CI: 1.222, 1.243). This highlights that, the perceived benefit (benefits derived from cervical cancer screening) among HIV positive women outweigh the perceived barriers which tends to hinder HIV-positive women's ability to engage in cervical cancer screening. Possibly this might be HIV positive women had more contact with health care providers who were the main source of information about cervical cancer screening for the study participants, either due to regularly attending ART service or being prone to frequent hospitalization which might increase their perceived benefit towards CCs.

The finding goes in line with the concept of the health belief model which stated that individuals are likely to utilize the screening service if they belief that the benefit of being screened to prevent cervical cancer outweighs the cost of not being screened (30) and the study done in Botswana among women served by Mahalapye District Hospital which showed that when the ever screened for cervical cancer and the never screened for cervical cancer were compared, it found that there was significant association between perceived benefits of doing cervical cancer screening and uptake of cervical cancer screening (63).

Unlike the concept of HBM and other studies conducted previously Knowledge and cues to action were not identified as predictors of cervical cancer screening in the current study.

In the current study knowledge on cervical cancer and its screening were not significantly associated with cervical cancer screening practice. This result showed that women may have knowledge about cervical cancer and cervical screening without taking up screening due to factors like accessibility, acceptability, affordability, quality of screening and treatment services. This finding goes in line with the concept stated on books' of health education and behavioral science which emphasizing that knowledge does not always translate into behavior change (30).

This result was incomparable with the results of studies conducted in different parts Ethiopia which reported that knowledge about cervical cancer and its screening was related for the uptake of cervical cancer screening (26, 27, 58, 73). Even though the association between knowledge and behavior change is not always clear (30), this variation might be due to the difference in the study population, sampling, theoretical framework and study design.

Cues to action are not independent predictors for cervical cancer screening practice in the current study. Even though cues will enable HIV-positive women to have adequate information about

screening, it does not necessarily mean cues influence screening behavior. For instance, it may enable them to know where to go for the test and what the test entails but irrespective of having cues for action other distal factors like accessibility and acceptability of the service, affordability and quality of screening and treatment services might affect the real practice (root cause analysis) (30). The finding was inconsistent with the study conducted in Ghana among HIV-positive women which reported cues about screening could improve cervical cancer screening practice and promote the health of high risk women (64).This difference could be due to the difference in research design, theoretical basis that guided the studies and operationalization of concepts across the studies.

6.1Strength and Limitations of the study

Strength

The study was conducted in a well-designed ART program in a hospital and health center setting and covered nearly all that were sampled for this study with a very low non-response rate of 1.5%. Confirmatory factor analysis and internal consistency of the tool was checked, which intern increased the quality of the estimates. The data was collected by trained and experienced ART providers at the facility increasing the quality of data collection and also maintained confidentiality of participant's sero-positive status.

Limitations

This study however should be interpreted in the light of its limitations. Firstly, cross-sectional nature of the study may prevent us interpreting the findings from a cause and effect relationship (reverse-causality), the study was also based on participant self-report through interviews. This might be resulted in social desirability bias. Second, the data collectors were Health care providers of the study participants; this might result interviewer (information) bias. Though we conducted the study in ART clinic where a good number of HIV positive women are accessed, We did not involve HIV-infected women who were not in care at ART clinic that were also at increased risk for acquiring HPV and developing cervical cancer. Perceived barrier construct of the HBM merely focused on cognitive domain which fails to identify the actual barrier and also the HBM does not indicate clear operationalization instructions in linking perceived susceptibility and severity to threat and no formula was developed for over all behavioral evaluation (30). These pitfalls of the model might have affected how the current study findings were generated.

7. Conclusion and Recommendations

7.1 Conclusion

The findings of the current study have an important implication for public health intervention aimed at cervical cancer and its screening for HIV positive women.

The cervical cancer screening level in this study among HIV-positive women was lower than that of the recommended coverage of the target group by the national guideline, needs to be improved through creating awareness and educating HIV-positive women about availability of cervical cancer screening and usefulness of doing cervical cancer screening. But this screening level reveals recent increase uptake in cervical cancer screening when compared to other studies conducted in Ethiopia before. This implies that if the current expansion and introduction of routine cervical cancer screening free of charge service in government health institutions continue and this program if sustained might greatly improve cervical cancer screening uptake in Ethiopia in the coming years.

Health care providers were the main source of information about cervical cancer and its screening and the main reason for being screened, so health care providers must emphasize keeping up with patient care guidelines and providing patient-centered education as ways to ensure the best health outcomes but taking into consideration that 1 in 4 of the study participants were not formally educated, this means it might need strong pictorials to bring across the messages.

The findings of this study suggested that perceived self-efficacy, perceived threat and perceived net-benefit were the predictors of cervical cancer screening practice. This implies that Educational programs geared towards increasing perceived threat to CC, perceived self-efficacy and net-benefit toward CCS can significantly improve the uptake of cervical cancer screening.

7.2Recommendations

The low screening level identified in this study indicated that much work needs to be done by responsible bodies such as Health facilities (health care providers), Governmental and non-governmental organizations working on female cancer and researchers in order to achieve the national standard screening coverage. The following recommendations have been pointed out to the respective partners:

Health facilities/health care providers:

- Perceived threat, self-efficacy and net benefit should be emphasized on health education and counseling program as it was found to improve uptake of cervical cancer screening.

For Governmental and Non-governmental organization working on female cancer:

- During SBCC material production, it will be good to consider individual based SBCC materials aimed at changing women's perception to promote cervical cancer screening among HIV positive women, as the finding of this study showed that, perceived threat, self-efficacy and net benefit were related to the chance of increasing cervical cancer screening practice but the type of SBCC material which will be developed need further study.

For researchers:

- We recommended further study to explore the rationale behind the contradicting findings of this study with the health belief model facts related with knowledge and cues to action, as those variables were not significantly associated to improve uptake of cervical cancer screening.
- We recommended mixed type of research and application of other behavioral models which incorporate predictors other than cognitive related to overcome the limitation of this study.

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9. Annexes

Annex one: Mean, median and mode score for each of Health Belief Model constructs

Constructs of HBM	Mean	Median	Mode
Perceived susceptibility	18.48	19	19
Perceived severity	33.65	34	34
perceived benefit	23.75	24	24
perceived barrier	56.43	56	56
perceived self-efficacy	20.23	20	20
Cues for action	6.68	7	7

Annex two: Leven's test for homogniety of variance

Constructs of HBM	Levene's test
perceived susceptibility	0.459
perceived severity	0.056
perceived benefit	0.465
perceived barrier	0.330
perceived self-efficacy	0.428
perceived cues for action	0.290

Annex three: Correlation (singularity or perfect correlation)

Ranges from 0.307 - 0.698

Constructs	P.sus	P.sev	P.ben	P.bar	P.seffc	Cues
Sus	1					
Sev	0.307*	1				
Ben	0.328*	0.526*	1			
Bar	0.361*	0.335*	0.357*	1		
seffc	0.331*	0.408*	0.313*	0.546*	1	
Cues	0.698*	0.461*	0.401*	0.491*	0.487*	1

*** Correlation significant at 0.01, Sus: susceptibility, Sev: severity, Ben: benefit, Bar: barrier, Effc: self-efficacy, Cues: cues to action**

Annex four: One-way-Annova

Perception vs socio-demo character

<table>
<tr><th>Factors</th><th colspan="2">P-value</th></tr>
<tr><td>Age</td><td colspan="2" rowspan="5">>0.05</td></tr>
<tr><td>Education</td></tr>
<tr><td>Income</td></tr>
<tr><td>Parity</td></tr>
<tr><td>Marital status</td></tr>
<tr><td>Occupation</td><td rowspan="4">P-value (<0.05)</td><td>Post-hoc test</td></tr>
<tr><td>Unemployed</td><td>>0.05</td></tr>
<tr><td>Self employed</td><td><0.05</td></tr>
<tr><td>Government employed</td><td><0.05</td></tr>
</table>

Annex five: Factor loading (>0.4) of selected items at each component and cronbach-alpha if item deleted value (n=475).

Sn.	Items	Component					
		Perceived susceptibility	Perceived severity	Perceived benefit	Perceived barrier	Perceived self-efficacy	Cronbach-alpha if item deleted
Sus1	It is likely that I will get cervical cancer in the future	0.836					0.833
Sus2	Older women are more at risk of cervical cancer than younger women	0.831					0.843
Sus3	Every woman of child bearing age is at risk of cervical cancer	0.794					0.843
Sus4	Cervical cancer is more common to women who are HIV positive	0.751					0.849
Sus5	I think that women with multiple sexual	0.712					0.849
Sev1	The thought of cervical cancer scares me		0.875				0.934
Sev2	When I think about cervical cancer, my heart beats faster		0.864				0.931
Sev3(R)	Cervical cancer is not as serious as other types of cancers		0.837				0.925
Sev4	If I got cervical cancer, it would be more serious than HIV negative's women		0.835				0.927
Sev5(R)	I feel I would not live longer five years if I		0.830				0.925
Sev6	I believe that cervical cancer can be cured easily		0.812				0.925
Sev7	If I had cervical cancer my whole life would change		0.796				0.924
Sev8(R)	Death resulting from		0.718				0.929

	cervical cancer is rare						
Sev9	**Cervical cancer would threaten a relationship with my husband or partner**		**0.671**				**0.933**
Ben1	**I think that having early cervical cancer screening will decrease complications of cervical cancer**			**0.855**			**0.588**
Ben2	**Having regular cervical cancer screening will help to find changes in the cervix before they turn into cancer**			**0.819**			**0.590**
Ben3	**If cervical changes are found early from cervical cancer screening, they are easily curable.**			**0.781**			**0.575**
Ben4	**I think that cervical cancer screening can reduce the chance of**			**0.734**			**0.586**
Ben5	**Cervical cancer screening can**			**0.588**			**0.587**
Ben6	**I would not be so anxious about cervical**			**0.561**			**0.611**
Bar1	**Cervical cancer screening is embarrassing to me**				**0.830**		**0.772**
Bar2	**Having cervical cancer screening is too painful**				**0.808**		**0.730**
Bar3	**If a young unmarried woman does cervical cancer screening, everyone will think that she is having sex**				**0.804**		**0.736**
Bar4	**Getting cervical cancer screening increase anxiety about liability of having cervical cancer**				**0.793**		**0.742**
Bar5(R)	**If there is cervical cancer development in my destiny, having cervical cancer screening cannot prevent it**				**0.780**		**0.722**
Bar6	**If a woman has not had sex, cervical cancer screening will**				**0.727**		**0.719**

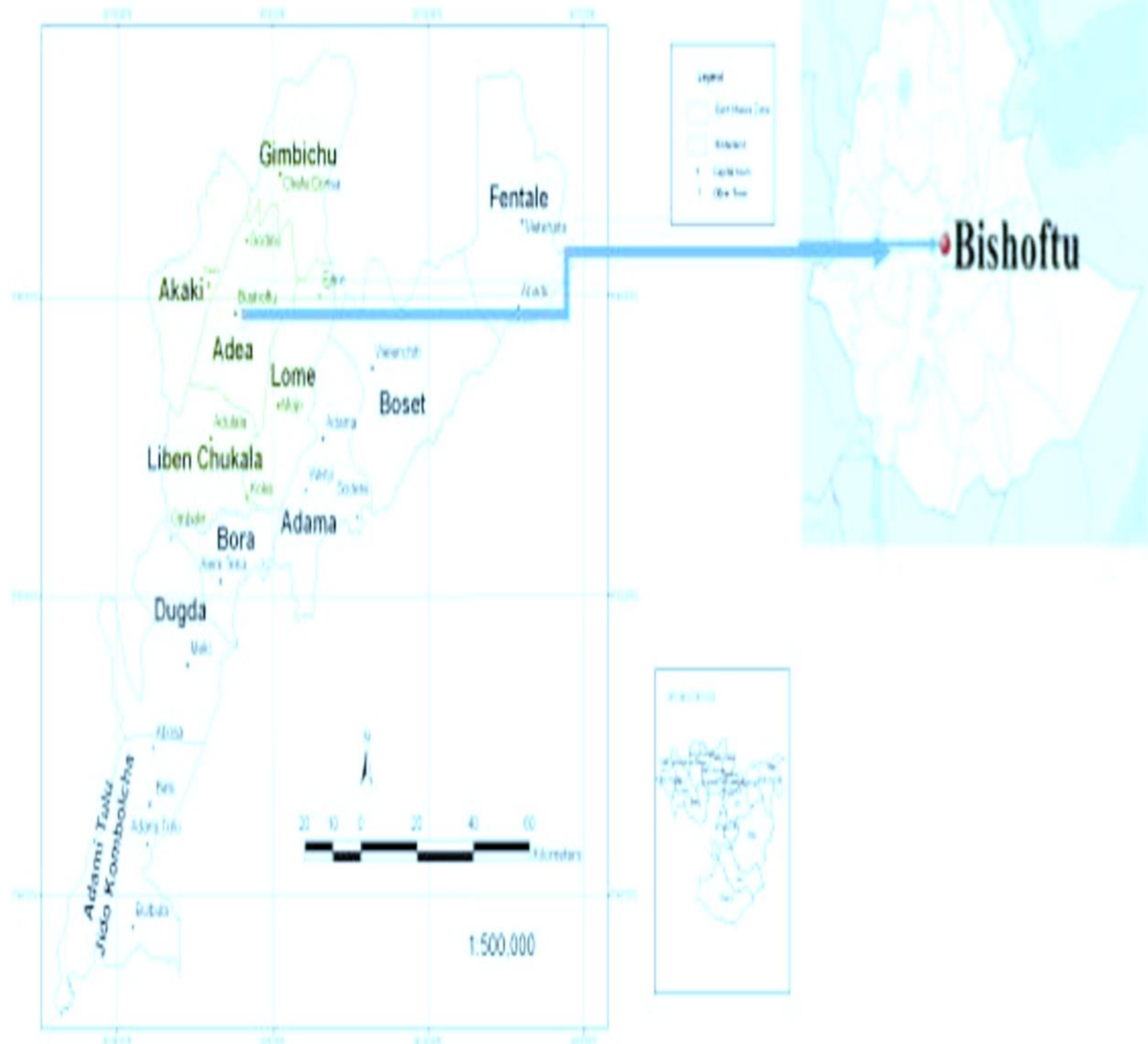
	take away her virginity						
Bar7	Only women who have had children need to do cervical cancer screening.				0.717		0.771
Bar8(R)	My husband or partner will not allow me to do cervical cancer screening				0.707		0.690
Bar9	Lack of female screeners in health facilities will discourage women from having cervical cancer screening				0.678		0.574
Bar10(R)	Attitudes/care of health workers can discourage from going for cervical cancer screening.				0.654		0.579
Bar11(R)	There is no health center close to my house to have cervical cancer screening				0.601		0.580
Bar12	Having cervical cancer screening takes too much time				0.555		0.606
Bar13	I will never have cervical cancer screening if I have to pay for it				0.535		0.605
Bar14	I would be ashamed to show my private parts to have cervical cancer screening				0.459		0..572
Bar15	I am afraid to expose my private parts to have cervical cancer screening because is not acceptable by my religion				0.434		0.568
Effc1	I know where to get the service of cervical cancer screening					0.834	0.850
Effc2	I am confident that I can schedule regular					0.823	0.812
Effc3	I can talk to people in my life to have					0.793	0.810
Effc4	I can find a way to pay for having					0.780	0.837
Effc5	I am sure of that I can go to health facility to get screened if I want to get it					0.572	0.802

Sn	Items	Cues for action		Cronbach-alpha if item deleted
Cues1	**Have you ever known**	**1. No**	**2.Yes**	**0.592**
Cues2	**Do you have family**	**1. No**	**2.Yes**	**0.553**
Cues3	**Have you ever heard through media or read**	**1. No**	**2.Yes**	**0.664**
Cues4	**Has your physician ever talked to you about cervical cancer screening?**	**1. No**	**2.Yes**	**0.690**

Sus: susceptibility, Sev: severity, Ben: benefit, Bar: barrier, Effc: self-efficacy, Cues: cues to action (R): reversed score

Annex six: Confirmatory factor analysis (CFA) for the constructs of HBM with CCS, (n=475)

S.no	Model fit	Value	Regression weights (Estimates)	P-value
1	**GFI**	0.998	CCS ← Self-efficacy	0.000
2	**CFI**	0.996	CCS ←Susceptibility	0.002
3	**CMIN/df**	1.770	CCS ←Severity	0.000
4	**RMSEA**	0.04	CCS ←Barrier	0.000
5	**X^2**	3.539	CCS ←Benefit	0.000
6	**Df**	2	CCS ←Cues	0.000
7	**Probability level(P)**	0.170	-	-



Annex seven: Map of Bishoftu and the surrounding Towns (66).

Annex eight: Study Information sheet

Greetings! My name is............I am here on behalf of Kalkidan Solomon student of public health at Addis Ababa University. She is conducting a research on predictors of cervical cancer screening practice among HIV positive women attending adult ART clinics in Bishoftu for the partial fulfillment of second degree, because it is essential to identify what are the possible predictors for cervical cancer screening practice for implementing possible and important intervention to overcome the problem. You are chosen to participate in this study. The choice is made randomly. Before you decide whether to participate or not in this study, I would like to explain to you the objective of the study, any risks, benefits, procedure and what is expected from you.

Objective of the study: the study will assess predictors of cervical cancer screening practice among HIV positive women.

Procedure: The study involves a face-to-face interview with the data collector that will ask you a set of questions using a structured questionnaire. After signing the consent form, the Data collector will then ask you the relevant questions and your responses will be written on the questionnaire. The interview will take about 40 minutes.

Benefit of the study: There is no direct benefit to study participants but the result of the study will be disseminated to concerned bodies including Bishoftu hospital, Bishoftu health bureau, Oromia health bureau, Addis Ababa University and others, Ministry of health and different non-governmental organization working on cervical cancer in order to take action on the problem related with cervical cancer screening service utilization.

Risk (harm) of the study: There is no harm in participating in this study but part of your time (average of 40 minutes) will be consumed to answer the questions.

Rights of participants: completely free to take part or not in this study. If you decide that you do not want to be part of the study, this will not be held against you and you will not be disadvantaged in any way. You are also free to withdraw from the study at any time if you feel that you cannot proceed. You can ask any question which is not clear for you.

Confidentiality: All information you give me will be strictly confidential and will be kept safe and secure place. Your name should not appear anywhere on the questionnaire to ensure anonymity. Only the principal investigator will know the details and will discard it after completing analysis.

Would you want to take part in the study?

1- No (say thank you) 2- Yes (take informed consent)

Annex nine: Informed consent

The objective, benefits, harms, procedures and confidentially of the study has been read and explained to me in the language I comprehend. I further understand that, taking part in this study and withdraw from participating in any time without having reason is purely voluntary.
I agree to participate in this study.

Participant:
Sign (signature or thumb print).............................Date........................

Annex ten: Questionnaire/English version

General information		
Questions	**Response & Coding Categories**	**Skip**
Date of data collection	dd/mm/yy	
Code of data collectors		
Code of the facility		
Code of the questionnaire		
Total ART client in the facility		
Patient ID		
WHO clinical disease stage of the patient		
Patient CD4 count		

Section I Socio-demographic Characteristics			
SN	**Questions**	**Response & Coding Categories**	**Skip**
101	How old are you?(Complete in years)	……………………..	
102	Where is your permanent residence?	1. Bishoftu 2. Out of Bishoftu	
103	What is your ethnicity?	1. Oromo 2. Amhara 3. Tigirie 4. Gurage 5. Other, specify………..	
104	What is your current marital status	1. Single 2. Married 3. Divorced 4. Widowed	
105	What is your religion	1. Orthodox 2. Muslim 3. Protestant 5. Other, Specify………….	
106	What is your current educational Status	1. Unable to read and write 2. Able to read and write but not formally educated 3. If formally educated, what is the highest education level you have aatained……………..	
107	What is your current occupational status?	1. Government employee 2. Non-governmental employee 3. Merchant 4. Farmer 5. Daily laborer 6. Student 7.Unemployed 8. Other, specify …………	
108	What is your monthly total house hold income?	…………..ETB	
109	What is your husband educational status currently?	1. Illiterate 2. Read and write but no formal education 3. If formally educated, what is the last grade completed……………..	

110	What is your husband occupation currently?	1. Government employee 2. Non-governmental employee 3. Merchant 4. Farmer 5. Daily laborer 6. Student 7.Unemployed 8. Other, specify ……………	
111	How many live births have you had?	1.One 2. Two 3.Three 4.More than three	
112	When was your HIV diagnosis?	……………….(year or duration)	
113	When was you started follow up in ART care……?	…………………(year or duration)	
Section II Knowledge of the study participants on cervical cancer and cervical cancer screening			
SN	Questions	Response & Coding Categories	Skip
201	What is the cause of cervical cancer?	1. Bacteria 2. Fungus 3. Virus 4. Hereditary/from family 5. I do not know 6. Other, specify…………………..	
202	What are the symptoms of cervical cancer?	1. Vaginal bleeding 2. Foul vaginal discharge 3. Pelvic or back pain 4. Post coital bleeding 5. I do not know 6. Other, specify……………….	
203	What are the risk factors to cervical cancer?	1. Age 2. Early onset of sexual intercourse 3. Having multiple sexual partners 4. Family history of cervical cancer 5. Cigarette smoking 6. I do not know 7. Other, specify………………..	
204	Is cervical cancer preventable disease?	1. Yes 2. No → 3. I do not know	Go to Q.206
205	How can we prevent cervical cancer?	1. Avoid multiple sexual partners 2. Avoid early onset sexual intercourse 3. Quit smoking 4. Through vaccination 5. Through screening services 6. Other, specify…………….	
206	Is cervical cancer curable (treatable)?	1. Yes 2. No → 3. I do not know	Go to Q. 208
207	What things make cervical cancer curable once diagnosed?	1. Seeking treatment at early stage 2. Seeking treatment at late stage 3. Seeking treatment at early or late stage 4. Other, specify………	
208	Do you know any screening procedures to detect cervical cancer?	1. Yes 2. No → 3. I do not know	Go to Q.210

209	Which cervical cancer screening methods do you know?	1. VIA 2. Pap smear 3. HPV test 4. Other, specify…………….	
210	What is the aim of cervical cancer screening?	1. To prevent cervical cancer 2. To early detection of cervical cancer 3. To treat cervical cancer 4. Other, specify……………..	
211	When a woman should have screening?	1. When menstruation starts 2. As soon as sexually active 3. At the age of 30 4. When starts having children 5. After menopause 6. Do not know 7. Other, specify…………..	
212	When HIV positive woman should have screening?	1. When menstruation starts 2. As soon as sexually active 3. At the age of 30 4. When start having children 5. After menopause 6. I do not know 7. Other, specify …………….	
213	How frequent, screening should be done for cervical cancer? Once every year.....................1 Once every three years........2 Once every 5 years................3 Do not know………...……99	1. Once every year 2. Once every three years 3. Once every 5 years 4. I do not know 5. Other, specify…….	
214	How frequent, cervical cancer screening should be done for HIV positive women?	1. Once every year 2. Once every two year 3. Once every three years 4. Once every 5 years 5. I do not know 6. Others specify………	

Section III Study participants source of information about cervical cancer and cervical cancer screening

SN	Questions	Response & Coding Categories	Skip
301	Have you ever heard about cervical cancer?	1. Yes 2. No →	Go to Q.401
302	From where did you hear about cervical cancer for the last time?	1. Media (Television, Radio, Magazine, Brochures) 2. Health professional 3. School 4. Family 5. Friends 6. Other, specify……….	
303	Have you ever heard about cervical cancer screening	1. Yes 2. No →	Go to Q.401
304	From where did you heard about cervical cancer screening methods for the last time?	1. Media 2. Health professionals 3. School 4. Family 5. Friends 6. Other, specify……	

Section IV Cervical cancer screening practice			
SN	**Questions**	**Response & Coding Categories**	**Skip**
401	**Have you ever had cervical cancer screening?**	**1. Yes** **2. No →**	**Go to Q.406**
402	**Why did you screen?**	**1. Health professional's advise/ recommendation** **2. Media(Television/ radio/ magazines/ brochures)** **3. Relative/ friend recommendation** **4. It's a standard/routine care at clinic** **5. Other, specify……….**	
403	**Have you screened for cervical cancer after you were diagnosed with HIV/AIDS?**	**1. Yes** **2. No →**	**Go to Q.405**
404	**How many times have you screened after you were diagnosed with HIV/AIDS?**	**……………………**	
405	**When was the last time you screened for cervical cancer?**	**1. within the past three years** **2. within the past five years** **3. More than five years** **4. Other, Specify…….**	
406	**Why did not you screen**	**1. It is expensive** **2. Never to think of it** **3. It is painful** **4. I am healthy** **5. Do not know about it** **6. Partner attitude** **7. Fear of positive result** **8. Religion factors** **9. Other, Specify………….**	

V. Perceived susceptibility to cervical cancer						
SN	**Questions**	**Response and coding categories**				
		Strongly disagree	**Disagree**	**Not-sure/ I don'tknow**	**Agree**	**Strongly agree**
501	**It is likely that I will get cervical cancer in the future**	**1**	**2**	**3**	**4**	**5**
502	**Older women are more at risk of cervical cancer than younger women**	**1**	**2**	**3**	**4**	**5**
503	**Every woman of child bearing age is at risk of cervical cancer**	**1**	**2**	**3**	**4**	**5**
504	**Cervical cancer is more common to women who are HIV positive**	**1**	**2**	**3**	**4**	**5**
505	**I think that women with multiple sexual partners are more prone to cervical cancer**	**1**	**2**	**3**	**4**	**5**

vi. perceived seriousness(severity) to cervical cancer						
SN	**Questions**	**Response and coding categories**				
		Strongly disagree	**Disagree**	**Not-sure/ I don't know**	**Agree**	**Strongly agree**
601	**The thought of cervical cancer scares me**	**1**	**2**	**3**	**4**	**5**
602	**When I think about cervical cancer, my heart beats faster**	**1**	**2**	**3**	**4**	**5**
603	**Cervical cancer is not as serious as other types**	**1**	**2**	**3**	**4**	**5**

	of cancers					
604	**If I got cervical cancer, it would be more serious than HIV negative's women**	**1**	**2**	**3**	**4**	**5**
605	**I feel I would not live longer five years if I got cervical cancer**	**1**	**2**	**3**	**4**	**5**
606	**I believe that cervical cancer can be cured easily**	**1**	**2**	**3**	**4**	**5**
607	**If I had cervical cancer my whole life would change**	**1**	**2**	**3**	**4**	**5**
608	**Death resulting from cervical cancer is rare**	**1**	**2**	**3**	**4**	**5**
609	**Cervical cancer would threaten a relationship with my husband or partner**	**1**	**2**	**3**	**4**	**5**
VII. Perceived benefits of doing of cervical cancer screening						
SN	**Questions**	**Response and coding categories**				
		Strongly disagree	**Disagree**	**Not-sure/ I don't know**	**Agree**	**Strongly agree**
701	**I think that having early cervical cancer screening will decrease complications of cervical cancer**	**1**	**2**	**3**	**4**	**5**
702	**Having regular cervical cancer screening will help to find changes in the cervix before they turn into cancer**	**1**	**2**	**3**	**4**	**5**
703	**If cervical changes are found early from cervical cancer screening, they are easily curable.**	**1**	**2**	**3**	**4**	**5**
704	**I think that cervical cancer screening can reduce the chance of having advanced cervical cancer in HIV positive women**	**1**	**2**	**3**	**4**	**5**
705	**Cervical cancer screening can decrease cervical cancer associated death in HIV positive women**	**1**	**2**	**3**	**4**	**5**
706	**I would not be so anxious about cervical cancer if I got regular screening**	**1**	**2**	**3**	**4**	**5**
VIII. Perceived barriers to cervical cancer screening						
SN	**Questions**	**Response and coding categories**				
		Strongly disagree	**Disagree**	**Not-sure/ I don't know**	**Agree**	**Strongly agree**
801	**Cervical cancer screening is embarrassing to me**	**1**	**2**	**3**	**4**	**5**
802	**Having cervical cancer screening is too painful**	**1**	**2**	**3**	**4**	**5**
803	**If a young unmarried woman does cervical cancer screening, everyone will think that she is having sex**	**1**	**2**	**3**	**4**	**5**
804	**Getting cervical cancer screening increase anxiety about liability of having cervical cancer**	**1**	**2**	**3**	**4**	**5**
805	**If there is cervical cancer development in my destiny, having cervical cancer screening cannot prevent it**	**1**	**2**	**3**	**4**	**5**
806	**If a woman has not had sex, cervical cancer screening will take away her virginity**	**1**	**2**	**3**	**4**	**5**
807	**Only women who have had children need to do cervical cancer screening.**	**1**	**2**	**3**	**4**	**5**
808	**My husband or partner will not allow me to do cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
809	**Lack of female screeners in health facilities will**	**1**	**2**	**3**	**4**	**5**

	discourage women from having cervical cancer screening					
810	**Attitudes/care of health workers can discourage from going for cervical cancer screening.**	**1**	**2**	**3**	**4**	**5**
811	**There is no health center close to my house to have cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
812	**Having cervical cancer screening takes too much time**	**1**	**2**	**3**	**4**	**5**
813	**I will never have cervical cancer screening if I have to pay for it**	**1**	**2**	**3**	**4**	**5**
814	**I would be ashamed to show my private parts to have cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
815	**I am afraid to expose my private parts to have cervical cancer screening because is not acceptable by my religion**	**1**	**2**	**3**	**4**	**5**

IX. Perceived self-efficacy to practice cervical cancer screening						
SN	**Questions**	**Response and coding categories**				
		Strongly disagree	**Disagree**	**Not-sure/ I don't know**	**Agree**	**Strongly agree**
901	**I know where to get the service of cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
902	**I am confident that I can schedule regular appointment for cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
903	**I can talk to people in my life to have cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
904	**I can find a way to pay for having cervical cancer screening**	**1**	**2**	**3**	**4**	**5**
905	**I am sure of that I can go to health facility to get screened if I want to get it**	**1**	**2**	**3**	**4**	**5**

X. Cues for action			
SN	**Questions**	**Response and coding categories**	**Skip**
1001	**Have you ever known women who Screened to cervical cancer?**	**2. No** **3. Yes**	
1002	**Do you have family history of cervical cancer?**	**2. No** **3. Yes**	
1003	**Have you ever heard through media or read about cervical cancer ?**	**2. No** **3. Yes**	
1004	**Has your physician ever talked to you about cervical cancer screening?**	**2. No** **3. Yes**	

Adapted from 1993 CHBMS (56, 59) and published similar studies (24, 58, 63, 68)

ክፍል አንድ፡- የጥናት ማብራሪያ (መረጃ) ቅፅ

ጤና ይስጥልኝ! ስሜ ____________________ይባላል፡፡ እዚህ የተገኘሁት በአዲስ አበባ ዩኒቨርስቲ የህብረተሰብ ጤና ተማሪ በሆነችው ቃልኪዳን ሰለሞን ምትክ ነው፡፡ ተማሪዋ የማህፀን ጫፍ ካንሰር ስለማድረግ በተመለከተ በቢሾፍቱ ኤችአይቪ ኤድስ ህክምና መስጫ ክሊኒኮች ውስጥ ክትትል በማድረግ ላይ ያሉ ቫይረሱ በደማቸው ውስጥ የሚገኝ ሴቶች ላይ የሁለተኛ ዲግሪ ማሟያ ጥናት በማካሄድ ላይ ትገኛለች፡፡ ይህም የማህጸን ጫፍ ካንሰር ምርመራ ስለማድረግ ጠቋሚ ምልክቶች ምን እንደሆኑ ማወቁ ጠቃሚና ተግባራዊ ሊሆኑ የሚችሉ የመፍትሔ እርምጃዎችን ለመውሰድ ስለሚያስችል ነው፡፡ እርስዎ በዚህ ጥናት ላይ እንዲሳተፉ ተመርጠዋል፡፡ ምርጫው የተካሄደው በግምታዊ አመራረጥ ነው፡፡ በጥናቱ ውስጥ ለመሳተፍ ወይም ላለመሳተፍ ከመወሰነዎ በፊት የጥናቱን ዓላማ፣ ማንኛውም ችግሮች፣ ጥቅማጥቅሞች፣ ሒደትና ከእርስዎ የሚጠበቀው ምን እንደሆነ ልገልፅለዎት እወዳለሁ፡፡

የጥናቱ አላማ፡- የኤች አይ ቪ ቫይረስ በደማቸው ውስጥ የሚገኝ ሴቶች ላይ የማህፀን ጫፍ ካንሰር ምርመራ ስለማድረግ ወሳኝ የሆኑ ነገሮችን ማጥናት ነው፡፡

የጥናቱ ሒደት፡- ጥናቱ የሚከናወነው ፊት ለፊት በሚደረግ ቃለ-መጠይቅ ሲሆን ቃለ መጠይቅ አድራጊውም ጥያቄዎችን ከወረቀት እያየ የሚጠይቅዎት ይሆናል፡፡ እርስዎ እንደፈቀዱ በጥናቱ ለመሳተፍ መስማማትዎን በስምምነት ፎረሙ ላይ ከፈረሙ በኂላ ቃለ መጠይቅ አድራጊው ከመጠይቁ ላይ ጥያቄዎችን ተራ በተራ እያነሳ በመጠየቅ የሚሰጧቸውን ምልሾች በመጠይቁ ላይ የሚፅፍ ይሆናል፡፡ ቃለ-መጠይቁ አርባ ደቂቃዎች ያህል ሊወስድ ይችላል፡፡

የጥናቱ ጥቅማጥቅም፡- በጥናቱ በመሳተፍዎ የሚያገኙት ቀጥተኛ ጥቅማ ጥቅም የለም፡፡ ሆኖም ግን የጥናቱ ውጤት በማህፀን ጫፍ ካንሰር ላይ ለሚሰሩ ተቋማት ማለትም ለቢሾፍቱ ሆስፒታል፣ ለቢሾፍቱ ጤና ቢሮ፣ ለኦሮሚያ ጤና ቢሮ፣ አዲስ አበባ ዩኒቨርስቲ እና ሌሎች የጤና ጥበቃ ሚኒስቴርና መንግስታዊ ያልሆኑ ድርጅቶች የሚደርስ ሲሆን ይህም የማህፀን ጫፍ ካንሰር ምርመራ ስለማድረግ ጠቃሚ እርምጃዎችን እንዲወስዱ ያግዛቸዋል፡፡

የጥናቱ ጉዳት፡- በዚህ ጥናት ላይ በመሳተፍዎ ምንም አይነት ጉዳት የለም፡፡ ሆኖም ግን ጥያቄዎችን ለመመለስ አርባ ደቂቃ ያህል ልንወስድብዎት እንችላለን፡፡

የተሳታፊዎች መብት፡- በዚህ ጥናት ውስጥ ለመሳተፍ ወይም ላለመሳተፍ ሙሉ ነፃነት አለዎት፡፡ የጥናቱ አካል ለመሆን ካልፈለጉ በእርስዎ ላይ ምንም የሚያመጣው ጉዳት የሌለ ከመሆኑም በላይ ምንም አይነት ጥቅም የሚያሳጣዎም አይደለም፡፡ በጥናቱ ላይ መቀጠል የማይችሉበት ነገር ከገጠመዎት በየትኛውም ሰዓት አቋርጠው መውጣት ይችላሉ፡፡ እነደዚሁም ግልጽ ያልሆነልዎት ነገር ካለ በየትኛውም ሰዓት መጠየቅ ይችላሉ፡፡

ምስጢራዊነት፡- ለእኔ የሚሰጡኝ መረጃዎች ሁሉ በጥብቅ ምስጢር የሚጠበቁ ሲሆን በተጨማሪም በአስተማማኝና ደህንነቱ በተጠበቀ ስፍራ ይቀመጣሉ፡፡ ይህንኑም ለማረጋገጥ ሲባል ስምዎትም ሆነ ሌላ መለያዎ በየትኛውም የመጠይቁ ክፍል ላይ አይሰፍርም፡፡ ዋነኛው የጥናቱ አጥኚ ብቻ ዝርዝር መረጃዎችን የሚያውቅ ሲሆን ጥናቱ እንዳበቃም የሚሰረዝ ይሆናል፡፡

በዚህ ጥናት ላይ ለመካተት ፈቃድዎ ነውን?

አይ (አመሰግኖ መሰናበት) 2. አዎ (ወደ ስምምነት ሰነዱ ማለፍ)

ክፍል ሁለት፡ የስምምነት ቅፅ

የጥናቱ ዓላማ፣ ጥቅማጥቅም፣ ጉዳቶች፣ ሒደቶችና ሚስጥራዊነት በሚገባኝ ቋንቋ ተነቦልኝ ተረድቻለሁ። በተጨማሪም በጥናቱ መሳተፍ ሆነ ከጥናቱ በአስፈለገኝ ሰዓት መውጣት ሙሉ በሙሉ በእኔ ፈቃደኝነት ላይ የተመሰረተ መሆኑን ተረድቻለሁ።

በዚህ ጥናት ላይ ለመሳተፍ ተስማምቻለሁ።

ተሳታፊ፡

ፊርማ (ፊርማ ወይም የጣት አሻራ) _________________________ ቀን_______________

ለበለጠ መረጃ ወይም ማብራርያ ከፈለጉ የዚህ ጥናት ባለቤት በሚከተለው አድራሻ ማግኘት ይችላሉ።

ስም፡ ቃልኪዳን ሰለሞን

ስ.ቁጥር፡ +251912719551

ኢሜይል፡ kallkidansolomon@gmail.com

ለቀና ትብብርዎ በጣም አመሰግናለሁ!

ጠቅላላ መረጃ		
ጥያቄዎች	ምላሽና የኮድ መደብ	ይዝለሉት
መረጃ የተሰበሰበበት ቀን	ቀን/ወር/ዓ.ም	
የመረጃ ሰብሳቢው ኮድ		
የተቋሙ ኮድ		
የመጠይቁ ኮድ		
በተቋሙ የኤችአይቪ መድሀኒት ክትትል የሚያደርጉ ሰዎች ብዛት		
የኣለም ጤና ድርጅት የ ኤች ኣይ ቪ ኤድስ የበሽታ ደረጃ		
የሲዲ4 ቁጥር		

ክፍል አንድ ማህበራዊ እና የስነ- ህዝብ መረጃዎች			
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች	ይዝለሉት
101	እድሜዎ ስንት ነው? (በዓመት ይናገሩ)	……..…………	
102	ቋሚ የመኖሪያ አድራሻዎ የት ነው?	1. በከተማ 2. በገጠር 3. ከቢሾፍቱ ውጭ	
103	ብሔርዎ ምንድን ነው?	1. ኦሮሞ 2. አማራ 3. ትግሬ 4. ጉራጌ 5. ሌላ ይገለፅ……	
104	ወቅታዊ የጋብቻ ሁኔታዎ ምን ይመስላል?	1. ያላገባች 2. ያገባች 3. የተፋታች 4. የትዳር አጋሯን በሞት ያጣች 5. በጓደኝነት(ከትዳር ውጭ የሆነ)	
105	ሀይማኖትዎ ምንድን ነው?	1. ኦርቶዶክስ 2. ሙስሊም 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ ይገለፅ…….	
106	የትምህርት ሁኔታዎ ምን ይመስላል?	1. ያልተማረች 2. ማንበብና መፃፍ ሆኖ መደብኛ ትምህርት የሌላት 3. በመደበኛ ትምህርት ከተማሩ ያጠናቀቁት የትምህርት ደረጃ ስንተኛ ነው………	
107	በአሁኑ ሰዓት መደበኛ ስራዎ ምንድነው	1. የመንግስት ሰራተኛ 2. መንግስታዊ ያለሆነ ድርጅት ሰራተኛ 3. ነጋዴ 4. አርሶ አደር 5. የቀን ሰራተኛ 6. ተማሪ 7. ስራ ፈላጊ 8. ሌላ ይገለፅ …………	
108	ወርሃዊ ገቢዎ ምንያህል ነው?	______________ኢት ብር	

109	የባልዎ የትምህርት ደረጃ ምን ያህል ነው?(በትዳር ላይ ላሉት ብቻ)	1. ያልተማረ 2. ማንበብና መፃፍ ሆኖ መደብኛ ትምህርት የሌለው 3. በመደበኛ ትምህር ከተማሩ ያጠናቀቁት የትምህርት ደረጃ ስንተኛ ነው………	
110	የባልዎ ስራ በአሁኑ ጊዜ ምንድን ነው	1. የመንግስት ሰራተኛ 2. መንግስታዊ ያለሆነ ድርጅት ሰራተኛ 3. ነጋዴ 4. አርሶ አደር 5. የቀን ሰራተኛ 6. ተማሪ 7. ስራ ፈላጊ 8. ሌላ ይገለፅ …………	
111	ስንት ልጆች ወልደዋል	1. አንድ 2. ሁለት 3. ሶስት 4. ከሶስት በላይ	
112	የኤችአይቪ ምርመራ ያደረጉት መቼ ነው?	…… (ዓመት ወይም የቆይታ ጊዜ)	
113	የኤችአይቪ ኤድስ መድሀኒት ክትትል የጀመሩት መቼ ነው?	…… (ዓመት ወይም የቆይታ ጊዜ)	
ክፍል ሁለት፡ የጥናቱ ተሳታፊዎች የማህፀን ጫፍ ካንሰር እና የካንሰር ምርመራ እውቀት			
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች	ይዝለሉት
201	የማህፀን ጫፍ ካንሰር ምክንያቱ ምንድን ነው	1. ባክቴሪያ 2. ፈንገስ 3. ቫይረስ 4. በዘር የሚተላለፍ/ከቤተሰብ 5. በፀሐይ ላይ ሽንት በመሽናት 6. አላውቅም 7. ሌላ ይገለፅ ………….	
202	የማህፀን ጫፍ ካንሰር ምልክቶች ምን ምን ናቸው?	1. ከብልት/ከማህፀን ደም መፍሰስ 2. ከብልት ሽታ ያለው ፈሳሽ መፍሰስ 3. የዳሌ ወይም የጀርባ ህመም 4. ከወሲብ በኂላ ከብልት ደም መፍሰስ 5. አላውቅም 6. ሌላ ይገለፅ ……..	
203	ለማህፀን ጫፍ ካንሰር የሚያጋልጡ ምክንያቶች ምንድናቸው	1. በልጅነት ወሲብ መጀመር 2. በርካታ የወሲብ ጓደኞች መኖር 3. የቤተሰብ ማህፀን ጫፍ ካንሰር ታሪክ 4. ሲጋራ ማጨስ 5. አላውቅም 6. ሌላ ይገለፅ……..	
204	የማህፀን ጫፍ ካንሰርን መከላከል ይቻላል?	1. አዎ 2. አይደለም ⟶	ወደ ጥ.ቁጥር 206 ይሂዱ
205	የማህፀን ጫፍ	1. ከርካታ የወሲብ ጓደኞች ጋር ወሲብ አለመፈፀም	

	ካንሰርን እንዴት መከላከል ይቻላል?	2. በልጅነት ወሲብ አለመጀመር 3. ማጨስ ማቆም 4. በክትባት 5. የምርመራ አገልግሎትን በመፈልግ 6. ሌላ ይገለፅ ……..	
206	የማህፀን ጫፍ ካንሰርን ቀድሞ በማወቅ መታከምና መዳን የሚችሉት ነው?	1. አዎ 2. አይቻልም	ወደ ጥ.ቁጥር 208 ይሂዱ
207	የማህፀን ጫፍ ካንሰር መኖሩ በምርመራ ከታወቀ በምን ሊድን ይችላል	1. እንደታወቀ ህክምናውን መጀመር 2. ከዘገየ በኋላ ህክምና መጀመር 3. ወይ እንደታወቀ አሊያም ከዘገየ በኋላ ህክምና መጀመር 4. ልዩነት የለውም 5. ሌላ ይገለፅ ………..	
208	የማህፀን ጫፍ ካንሰርን ለማወቅ የሚደረጉ የምርመራ ሂደቶችን ያውቃሉ?	1. አዎ 2. አይ ⟶ 3. አላውቅም	ወደ ጥ.ቁጥር 210 ይሂዱ
209	ምን አይነት ማህፀን ጫፍ ካንሰር የምርመራ መንገዶችን ያውቃሉ?	1. ቪአይኤ 2. ፓፕ ስሜር 3. የኤችፒቪ ምርመራ 4. ሌላ ይገለፅ ……	
210	የማህፀን ጫፍ ካንሰር ምርመራ ዓላማው ምንድን ነው?	1. የማህጸን ጫፍ ካንሰርን ለመከላከል 2. ገና ሲጀመር ለመለየት 3. የማህፀን ጫፍ ካንሰርን ለማከም 4. ሌላ ይገለፅ ……..	
211	አንድ ሴት የማህፀን ጫፍካንሰር ምርመራ ማድረግ የሚገባት መቼ ነው	1. የወር አበባ እንደጀመረች 2. ወሲብ እንደጀመረች 3. እድሜዋ 30 ሲሞላ 4. ልጆችን መውለድ ስትጀምር 5. ከማረጥ በኋላ 6. አላውቅም 7. ሌላ ይገለፅ ……	
212	ኤችአይቪ ቫይረስ በደማቸው ውስጥ የሚገኝ ሴቶች የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ የሚጠበቅባቸው መቼ ነው	1. የወር አበባ እንደጀመረች 2. ለወሲብ ዝግጁ ስትሆን 3. እድሜዋ 30 ሲሞላ 4. ልጆችን መውለድ ስትጀምር 5. ከማረጥ በኋላ 6. አላውቅም 7. ሌላ ይገለፅ ……	
213	የማህፀን ጫፍ ካንሰር ምርመራ በየስንት ጊዜ መካሄድ አለበት?	1. በእያንዳንዱ ዓመት አንዴ 2. በየሶስት ዓመቱ አንዴ 3. በየአምስት አመቱ አንዴ 4. አላውቅም 5. ሌላ ይገለፅ ………	

214	ኤችአይቪ ቫይረስ በደሟ የሚገኝ ሴት የማህፀን ጫፍ ካንሰር ምርመራው በየስንት ጊዜ ማድረግ ይጠበቅባታል?	1. በየአመቱ አንዴ 2. በየሁለት ዓመቱ አንዴ 3. በየሶስት ዓመቱ አንዴ 4. በየአምስት አመቱ አንዴ 5. አላውቅም 6. ሌላ ይገለጽ …….	
ክፍል ሶስት፡ የጥናቱ ተሳታፊዎች ስለማህፀን ጫፍ ካንሰር እና ምርመራ የመረጃ ምንጫቸው			
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች	ይዝለሉት
301	ስለ ማህፀን ጫፍ ካንሰር ሰምተው ያውቃሉ?	1. አዎ 2. አይ ⟶	ወደ ጥ.ቁ 401 ይሂዱ
302	ስለማህፀን ጫፍ ካንሰር ለመጨረሻ ጊዜ የሰሙት ከየት ነው?	1. ከመገናኛ ብዙሃን 2. ከጤና ባለሙያዎች 3. ከትምህርት ቤት 4. ከቤተሰብ 5. ከጓደኞች 6. ሌላ ይገለፅ ……	
303	ስለ ማህፀን ጫፍ ካንሰር ምርመራ ሰምተው ያውቃሉ?	1. አዎ 2. አይ ⟶	ወደ ጥ.ቁ 401 ይሂዱ
304	ስለማህፀን ጫፍ ካንሰር ምርመራ መንገዶችለመጨረሻ ጊዜ የሰሙት ከየት ነው?	1. ከመገናኛ ብዙሃን 2. ከጤና ባለሙያዎች 3. ከትምህርት ቤት 4. ከቤተሰብ 5. ከጓደኞች 6. ሌላ ይገለፅ ……	
ክፍል አራት፡ የማህፀን ጫፍ ካንሰር ምርመራ ስለማድረግ			
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች	ይዝለሉት
401	ከዚህ በፊት የማህፀን ጫፍ ካንሰር ምርመራ አድርገው ያውቃሉ?	1. አዎ 2. አይ ⟶	ወደ ጥ.ቁ 406 ይሂዱ
402	ለምንድን ነው የተመረመሩት?	1. በዶ/ሩ አስተያየት 2. ቴሌቪዥን/ሬዲዮ/መጽሔት/በራሪ ወረቀቶች 3. በዘመዶች/በጓደኞች አስተያየት 4. በክሊኒኩ በሚሰጠው ስታንዳርድ መሰረት 5. ሌላ ይገለፅ ……..	
403	ኤችአይቪ በደምዎ ውስጥ መኖሩን ካወቁ በኋላ ምርመራ አድርገዋል?	1. አዎ 2. አይ ⟶	ወደ ጥ.ቁ 405 ይሂዱ
404	ኤችአይቪ በደምዎ ውስጥ መኖሩን ካወቁ በኋላ ሰንት ጊዜ	……………………	

	ምርመራ አድርገዋል?		
405	የማህፀን ጫፍ ካንሰር ምርመራ ለመጨረሻ ጊዜ ያካሄዱት መቼ ነው?	1. ባለፉት ሶስት ዓመታት 2. ባለፉት አምስት ዓመታት 3. ከአምስት ዓመት በላይ 4. ሌላ ይገለፅ………………	
406	[illegible]?	1.[illegible] 2.[illegible] 3 .[illegible] 4.[illegible] 5.[illegible] 6.[illegible] 7.[illegible] 8.[illegible]	

ክፍል አምስት፡ ስለማህፀን ጫፍ ካንሰር ተጋላጭነት ያለ ግንዛቤ

ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች				
		በፍፁም አልስማማም	አልስማም	እርግጠኛ አይደለሁም/አላውቅም	እስማማለሁ	በጣም እስማማለሁ
501	የማህፀን ጫፍ ካንሰር የያዘኝ ይመስለኛል	1	2	3	4	5
502	ከወጣት ሴቶች ይልቅ ጠና ያሉ ሴቶች በማህፀን ጫፍ ካንሰር ለመያዝ የበለጠ የተጋለጡ ናቸው	1	2	3	4	5
503	ማንኛዋም ልጅ በመውለድ እድሜ ክልል ውስጥ ያለች ሴት ለማህፀን ጫፍ ካንሰር የተጋለጠች ናት	1	2	3	4	5
504	የማህፀን ጫፍ ካንሰር ኤችአይቪ ቫይረስ በደማቸው በሚገኝ ሴቶች ላይ በይበልጥ ይከሰታል	1	2	3	4	5
505	እርግዝና በተደጋገመ ቁጥር ለማህፀን ጫፍ ካንሰር የመጋለት እድል ይጨምራል	1	2	3	4	5

ክፍል ስድስት፡ ስለማህፀን ጫፍ ካንሰር ከባድነት ወይም የመዳን እድል ላይ ያለ ግንዛቤ

ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች				
		በፍፁም አልስማማም	አልስማም	እርግጠኛ አይደለሁም/አላውቅም	እስማማለሁ	በጣም እስማማለሁ
601	ስለማህፀን ጫፍ ካንሰር ማሰብ ያስፈራኛል	1	2	3	4	5
602	የማህፀን ጫፍ ካንሰር ቢያመኝ ኤችአይቪ ከሌለባት ሴት ይልቅ እኔ ላይ ይከብድብኛል	1	2	3	4	5
603	የማህፀን ጫፍ ካንሰር እንደ	1	2	3	4	5

	ሌሎች የካንሰር አይነቶች ከባድ አይደለም					
604	ለማህፀን ጫፍ ካንሰር ህመም ውጤታማ ህክምና አለ	1	2	3	4	5
605	የማህፀን ጫፍ ካንሰር ካመመኝ ከ5ዓመት በላይ በህይወት አልቆይም	1	2	3	4	5
606	የማህፀን ጫፍ ካንሰር በቀላሉ ይድናል	1	2	3	4	5
607	ማህፀን ጫፍ ካንሰር መታመም መሃንነትን ያስከትላል	1	2	3	4	5
608	በማህፀን ጫፍ ካንሰር ምክንያት የሚያጋጥም የሞት አደጋ እምብዛም ነው	1	2	3	4	5
609	የማህፀን ጫፍ ካንሰር ህመሜ ከባሌ ጋር ያለንን ግንኙነት አደጋ ውስጥ ይከተዋል	1	2	3	4	5
ክፍል ሰባት: የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ የሚያስገኛቸው ጥቅሞች						
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች				
		በፍፁም አልስማማም	አልስማም	እርግጠኛ አይደለሁም/አላውቅም	እስማማለሁ	በጣም አስማማለሁ
701	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ በካንሰሩ ምክንያት የሚያጋጥመውን ውስብስብ ችግር ይቀንሳል	1	2	3	4	5
702	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ በማህፀን ውስጥ የሚካሄደውን ለውጥ ካንሰር ከመሆኑ በፊት ለማወቅ ያስችላል	1	2	3	4	5
703	በማህፀን ጫፍ ካንሰር ምርመራ ጊዜ የማህፀን ለውጡ በጊዜ ሲገኝ በቀላሉ መዳን ይችላል	1	2	3	4	5
704	ኤችአይቪ ቫይረስ በደሟ የሚገኝ ሴት የማህፀን ጫፍ ካንሰር ምርመራ ሲደረግላት የተባባሰ የማህፀን ጫፍ ካንሰር የመያዝ እድሏን ይቀንሳል	1	2	3	4	5
705	የማህፀን ጫፍ ካንሰር ምርመራ ኤችአይቪ ቫይረስ በደማቸው በሚገኝ ሴቶች ላይ ሲካሄድ ከማህፀን ጫፍ ካንሰር ጋር የተያያዘ የሞት አደጋን ይቀንሳል	1	2	3	4	5
706	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ በማህፀን ጫፍ ካንሰር ምክንያት አልባ	1	2	3	4	5

	ጭንቀት ይቀንሳል					
ክፍል ስምንት፡ የማህፀን ጫፍ ካንሰር ምርምራ ለማድረግ እንቅፋት የሚሆኑ ችግሮች						
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች				
		በፍፁም አልስማማም	አልስማም	እርግጠኛ አይደለሁም/አላውቅም	እስማማለሁ	በጣም እስማማለሁ
801	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ በጣም ያሳፍራል	1	2	3	4	5
802	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ በጣም ያሳምማል	1	2	3	4	5
803	ወጣት ያላገባች ሴት የማህፀን ጫፍ ምርመራ ብታደርግ ሁሉም ሰው ወሲብ እንደምትፈጽም ያስባል	1	2	3	4	5
804	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ ወደ ፊት ማህፀን ጫፍ ካንሰር ያጋጥመኛል የሚል ጭንቀትን ይጨምራል	1	2	3	4	5
805	የማህፀን ጫፍ ካንሰር እጣ-ፋንታ ነው ስለዚህ አስቀድሞ ምርመራ ማድረግ ከማህፀን ጫፍ ካንሰር አያድንም	1	2	3	4	5
806	ወሲብ ፈፅማ የማታውቅ ሴት የማህፀን ጫፍ ካንሰር ምርምራ ብታደርግ ድንግልናዋ ይጠፋል	1	2	3	4	5
807	ልጆች የወለደች ሴት ብቻ የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ ያስፈልጋታል	1	2	3	4	5
808	ጓደኛዬ የማህፀን ጫፍ ካንሰር ምርመራ እንዳደርግ አይፈልግም	1	2	3	4	5
809	በጤና ባለሙያዎች ዘንድ ያለው አመለካከት የማህፀን ጫፍ ካንሰር ምርመራ ለማድረግ አያበረታታም	1	2	3	4	5
810	ስለ ማህፀን ጫፍ ካንሰር ምርመራ ሂደቶች የመረጃ እጥረት መኖሩ የማህፀን ጫፍ ካንሰር ምርመራ እንዳይካሄድ እንቅፋት ነው	1	2	3	4	5
811	በቅርብ በሚገኘው የጤና ተቋም ውስጥ የማህፀን ጫፍ ካንሰር ምርመራ አገልግሎት አለመኖሩ የማህፀን ጫፍ ካንሰር ምርመራ ለማድረግ እንቅፋት ነው	1	2	3	4	5

812	የማህፀን ጫፍ ካንሰር ምርመራ ማድረግ ረጅም ጊዜ ይፈጃል	1	2	3	4	5
813	የማህፀን ጫፍ ካንሰር ምርመራ በጣም ውድ ነው	1	2	3	4	5
814	የመራቢያ አካሌን ለማህፀን ጫፍ ካንሰር ምርመራ እንዳላጋልጥ ሐይማኖቴ ይከለክለኛል	1	2	3	4	5
815	የመራቢያ አካሌን ለማህፀን ጫፍ ካንሰር ምርመራ እንዳላጋልጥ ባህሌ ይከለክለኛል	1	2	3	4	5
ክፍል ዘጠኝ፡ የማህጸን ጫፍ ካንሰር ምርመራ ለማድረግ ስላለው ፍላጎት የሚያሳዩ ጥያቄዎች						
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች				
		በፍፁም አልስማማም	አልስማም	እርግጠኛ አይደለሁም/አላውቅም	እስማማለሁ	በጣም እስማማለሁ
901	ለማህፀን ጫፍ ካንሰር በይበልጥ የሚያጋልጡ ምክንያቶችን አውቃለሁ	1	2	3	4	5
902	የማህፀን ጫፍ ካንሰር ምርመራ አገልግሎት የት እንደሚሰጥ አውቃለሁ	1	2	3	4	5
903	የማህፀን ጫፍ ካንሰር ምርመራ አገልግሎትን መጠቀም በጣም ቀላል ነው	1	2	3	4	5
904	የማህጸን ጫፍ ካንሰር ምርምራ ለማድረግ ሙከራ ካደረኩኝ ማድረግ እንደምችል እርግጠኛ ነኝ	1	2	3	4	5
905	የማህፀን ጫፍ ካንሰር ምርመራውን ለማድረግ ከፈለኩኝ ወደ ጤና ተቋሙ እንደምሄድ እርግጠኛ ነኝ	1	2	3	4	5
ክፍል አስር፡ ምርመራ ለማድረግ የሚገፋፉ ነገሮች						
ተቁ	ጥያቄዎች	መልሶችና የኮድ መደቦች				ይዝለሉት
1001	የማህፀን ጫፍ ካንሰር ስላለባት ሴት ሰምተው/አይተው ያውቃሉ	1. አዎ 2. አይ				
1002	ከቤተሰብዎ መካከል የማህፀን ጫፍ ካንሰር ችግር ያለበት ሰው ታሪክ ሰምተው ያውቃሉ	1. አዎ 2. አይ				
1003	ስለ ማህፀን ጫፍ ካንሰር ሁኔታ በመገናኛ ብዙሃን ሰምተው ወይም አንብበው ያውቃሉ	1. አዎ 2. አይ				
1004	ስለ ማህፀን ጫፍ ካንሰር ሁኔታ ከጤና ባለሙያዎች ሰምተው ያውቃሉ	1. አዎ 2. አይ				

Miltoo tokkoffaa ፡ gabatee odeeffannoo qo’annichaa

Nagayaaa! Maqaan koo__________jedhama. Asittii kan argame barattu yuniveristi addis ababati barattu public health kan taattee qalkidan Solomon baka bu’eetan. Barattun tun malatoolee canseri fixee gadaamessaa muldhisan ilaalateen dubartoota kilinika qoranno HIV AIDSI Bishoftu kessatti jiran kan HIV posotivi ta’n irattii qorannoo ademsifamu ilaalate qo’ano ulaagaa digrii lammaffa ishe hojechaa jirtii.sabbni isaatis malatoolen kunnin yoo bekaman tarkaanfilee faayidaa qabaniifii salphaatti hojittii jijiramu danda’an fudhachuuf waan nama gargaarufi.isiinis qo’anoo kana irraatti aka hirmaatan sera filanno tilmaamaatin filatamtanirtu. Qo’anno kana kessatti hirmaachuf yookin hirmaachu dhissuuf murteessu kessanin dura kaayyoo qo’anichaa, rakkolee jiran , fayidaalee, ademsa qo’anoo fi wanta isiin iraa eegamu sinif ibsun barbada.

Kaayyoo qo’anicha :-qorannoon mallattolee cansari fixee gadaamesaa muldhisan akkammittii aka raawataman qo’achu.

Adeemsa :-qo’anichi kan gegeffamu gafif deebii odeffannoo sasaabdoota waliin fulafulatti godhamuun. Odeeffannoo sasaabaan gaffii qindaa’aa waraqaa gaaffii iraa isin gaafachuu danda’a. xalayaa walii galticha erga malateesitani boodaa wantota gaffiichaan wal qabataa ta’an kan isin gaafatan yomuu ta’u debbin isin debistanis gaffii jalattii ni galmaa’a. gaafif deebiin daqiqa 40 fudhachu danda’a.

Faayidaalee qo’anicha:- qo’anicha irratti hirmaachuu kessanif faayidaan kallattin issin argatan hin jiru. Haata’u male bu’aan qo’anoo kanaa Hospitaala bishoftuuf,biiroo egumsa fayyaa bishoftuuf, biiroo egumsa fayyaa oromiyaatiif, yuniverisiti addis ababaatif,ministeera egumsa fayyaa federaalaa fi waajiraalee mitimottummaa kaansarii fiixee gadaamessaa irattii hojjetanif waan dhiyaatuuf tarkaanfii faayidaa qabbessaa aka fudhatan isaan gargaara.

Midhaa qo’anichaa:- qo’anicha waan hirmaataniif midhaan isin irra gahu hinjiru .haata’u male yeroo kessan iraa daqiqaa 40 gaaficha debiisuf ni oola.

Mirga hirmaatotaa:- qo’anno kana irratti hirmaachuuf yookin dhiisuuf mirga guutuu qabdu. Hirmaachu dhiisuu kessannif midhaan isin irra gahuus ta’e faayidaan issin dhabdan hinjiru. Erga hirmaachuu jalqabdan boodas yoota’e yeruma hirmaachuu aka hin dandenye bartanitti dhaabuu dandessu. Gaaffin kammiyuu ifa yoo hin taanne gaafachuu ni dandeesssuu.

Iccittu mma odeefannoo:- odeeffannon na harka gahan hundi iccitii cimaadhan kan egaman yoo ta’u dabalataanis eddo amansisaatti kuufaman. Kana mirkaneessuuf jecha maqaan kessan baka kammiyyu iratti hin galmaa’u. odeefanicha gadi fageenyaan kan beekku abba qo’anichaa qofa yoo ta’u akkuma qo’anichi dhumen kan haqamu ta’a.

Qo’annoo kana irratti hirmaachuu ni barbaaddu?

1. Hin barbaadu (galatoomaa) 2. Eyyen (gara waligaltichaati senaa)

Miltoo lammafaa: sanadii waaligaltee

Kaayyoon qo'anichaa akasumas faayidaaleen, midhaalen ,adeemsi qo'anoo fi iccittumaan odeffanichaa afaan naaf galuun naaf dubbifamee hubadhera. Kana malees qo'anicha irratti hirmaachuufi yeroon baarbaadeetii kesssaa bahuun fedhii kiyaan akka hundaa'u hubadhera.
Qo'anoo kana irratti hirmaachuuf murteesen jira.

Hirmaataa:

Mallattoo(mallattoo ykn ashaaraa qubaa)________________guyyaa____________

Miltoo sadaffaa : gaafii afaan oromo

Odeefaanno walligalaa		
Gaafiiwwan	Deebii fi kodii ramaddii	Bira darbi
Guyyaa odeeffanoon itti sasaabamu	dd/mm/yy	
koodii odeeffannoo sasaabdootaa		
Koodii dhaabattichaa		
Koodii waraqaa gaafii		
Baayina ART dhaabatichaa fayyadamtootaa		
Waraqaa eenyummaa dhukkubsattuu		
Sadarkaa dhibeewwanii dhukkubsataa dhaabbata fayyaa addunyaatiin		
Lakkoofsa CD4 dhukkubsattuu		

kutaa I odeeffaanoo hawaassumaa			
TL	Gafiiwaan	Deebii fi kodii ramaddii	Bira darbi
101	Umuriin kee meqaaa?(wagaan deebisii)	……………………..	
102	Eddoon jireenyaa dhaabataa kee esaa?	magaalaa baadiyyaa Bishoftuudhan ala	
103	Sabni kee maalii?	1. Oromo 2. Amaaraa 3. Tigre 4. Guraage 5. kan biraa, ibsi………..	
104	Haala maatii	1. hin herumne 2. herume 3. wal hike 4. najalaa du'e	
105	Amantiin kee maalii?	1. Ortodoksii 2. Muslima 3. Protestanti 4. kaatoliki 5. kan biraa, ibsi………….	
106	Sadarkaan barumsaa kee ammaa maalii?	1. kan hin baranne 2. barressuf dubbissu garuu barumsa ammayyaa hin barannee	

		3. barumsa ammayyaa yoo ta’e kutaa yeroo dhumaa barate barreessii……………..	
107	Yeroo amma maal hojeetaa?	1. hojii mottummaa 2. hojii miti motumaa 3. daldalaa 4. qotee bulaa 5. hojii humnaa 6. barattuu 7.hoji dhabeyyii 8.kan biraa , ibsii …………	
108	Ji’aan qarshii hamam argataa?	birrii………….	
109	Sadarkaan barumsaa abbaa manaa ketii maal innii?	1 kan hin baranne 2. barressuf dubbissu garuu barumsa ammayyaa hin barannee 3. barumsa ammayyaa yoo ta’e kutaa yeroo dhumaa barate barreessii……………..	
110	Abban manaa kee maal hojeeta?	1. hojii mottummaa 2. hojii miti motumaa 3. daldalaa 4. qotee bulaa 5. hojii humnaa 6. baratаa 7.hoji dhabeyyii 8.kan biraa , ibsii …………	
111	Ijoolee lubbun jiran meqa qabda?	1.toko 2. lama 3.sadi 4.sadin oli	
112	HIV n aka qabamtee yoom bartee?	Waggaa ……………….dura	
113	ART fayyadamuu yoom egalte?	waggaa…………………dura	
kutaa II bekumsa hirmaattonni kanseri fixee gadaamesaa fi calallii isaa irratti qaban			
TL	Gaafiwan	Debii fi koodii ramaddii	Bira
201	Kaanserin fixee gadaamesaa maaliin dhufaa?	Bakteriyaa Fangasii Virasii Sanyidhan dadarba Aduu kessattii fincaa’un Hin beku Kan biraa ,ibsi…………………..	

202	Mallatooleen Kaanserin fixee gadaamesaa maal isaan?	Dhiguu qaama salaa Dhangala'oo foolii qabuu qaama saalaa kessa bahu Waraansa mudhii ykn dugda Dhiguu qaama salaa walqunamtii boodaa hinbeekuu kanbiraa, ibsi………………	
203	Wantoonni kaansri fixee gadaamesaatiif nama saaxilan maal isaan?	Walqunnamtii saalaa daa'imumaan jalqabamu Hiriyoota qunamtii saalaa baayee qabaachuu Seenaan warra kessa kan dhibee kana qabu jiraachuu Sijara xuuxu Hin beekuu Kan biraa, ibsii………………..	
204	kaansri fixee gadaamesaa ittissuun ni danda'amaa?	Eyeen hindandaamu →	Gara gaafii 206 deemi
205	kaansri fixee gadaamesaa akkammitti ittissuu dandenya?	Hiriyota qunamti salaa bay'ee dhissuu Qunnamtii saalaa daa'immummaan jalqabamu dhissuu Sijaaraa xuxu dhisuu Talaallii fudhachu Tajaajila calalli argachuu Kan biraa , ibsi……………	
206	kaansri fixee gadaamesaa yoo dafee bekame ni wal'anama	Eyeen hin wal'anamu →	Gara gaaffii 208
207	kaansri fixee gadaamesaa jirachun erga beekamee booda aka fayyu kan godhuu maalinni?	Dafani wal'anamu Turani wal'anamu Dafani ykn Turani wal'anamu Garaagarummaa hin qabu Kan biraa, ibsi………	
208	Akkataa yookiin sadarkaa calallii kaansri fixee gadaamesaa bektaa?	Eyeen miti → Hin beeku	Gara gaafii 210
209	Mala calalii kaansri fixee gadaamesaa maalfaa beektaa?	VIA Pap smear HPV test Kan biraa , ibsi……………	
210	Kaayyoon calalii kaansri fixee gadaamesaa maali?	kaansri fixee gadaamesaa ittissuf kaansri fixee gadaamesaa akajiru dursani beekuf	

		kaansri fixee gadaamesaa wal'aanuf kanbiraa ,ibsi……………..	
211	Dubartitin yoom calalamu qabdi?	Yeroo laguun dhufu Wal qunamtii sallaa yoo jalqaban Yoo umrii 30 ta'an Da'insa yoo jalqaban Lagu argu yoo dhisan Hin beekuu kanbiraa ,ibsi……………..	
212	Dubartooni HIV qaban yoom calalamu qaban?	Yeroo laguun dhufu Wal qunamtii sallaa yoo jalqaban Yoo umrii 30 ta'an Da'insa yoo jalqaban Lagu argu yoo dhisan Hin beekuu kanbiraa ,ibsi……………..	
213	Calalin addaan fageenya yeroo hamamii kessattii godhamu qaba?	waggaattii yerroo toko waggaa saddittii yerroo tokko waggaa sshanittii yeroo toko hin beekuu kanbiraa, ibsi……………..	
214	Calalin dubartoota HIV qabanif adaan fageenya yeroo hamamii kessattii godhamu qaba?	waggaattii yerroo toko wagaa lamattii yeroo toko waggaa saddittii yerroo tokko waggaa sshanittii yeroo toko hin beekuu kanbiraa, ibsi……………..	

kutaa III madda odeeffannoo hirmaattoonnii kaanserii fixee gadaameessaa fi callallii isaa irratti qaban			
TL	Gaafiwan	Debii fi koodii ramaddii	Bira darbi
301	Waa'ee kaanseri fixee gadaamesaa dhagesse bektaa?	Eyeen Miti →	Gara gaafii 401
302	Yeroo dhuumaaf waa'ee kaanseri fixee gadaamesaa essaa dhagesseee ?	Mediya Hojjettota fayyaa Mana barumsaa Maatii koo Hiriyoota koo Kan biraa, ibsi……….	
303	Wa'ee calallii kanserii fixee gadaamessaa	Eyeen miti →	Gara gaafii 401

	dhagesse bektaa?		
304	Yeroo dhumaatiif wa'ee calallii kanserii fixee gadaamessaa essaa dhagesseee?	Mediya Hojjettota fayyaa Mana barumsaa Maatii koo Hiriyoota koo Kan biraa, ibsi……….	
Kutaa IV gocha calalli kanseri fixee gadaamessaa			
TL	Gafiiwwan	Debii fii koodii rammaddii	Bira darbi
401	Kaanseri fixee gadaamessaatiif calalamtee bektaa?	Eyeen Miti →	Gara gaafii 406
402	Maaliif calalamtee?	Doktoratu na ajajee Televizhini / radio/gazexaa / brochuri Fira/ hiriyaatu natti hime Gorsitoota kilinikii Sera hojii kilinikaa waan ta'eef Kan biraa, ibsi……….	
403	Erga dhukkuba HIV Eedsiif ilalamtee booda kaanseri fixee gadaamessaatiif calalamtetta?	Eyeen Miti →	Gara gaafii 405
404	Erga HIV/AIDS qabamu kee bartee yeroo meeqa calalamtee?	……………………	
405	Yeroo dhumaatiif yoom kaanseri fixee gadaamessaatiif calalamtee?	Wagootan sadan darban keessaa? Wagootan shanan darban keessaa? Waggaa shannii ol te'e Kan biraa, ibsii	
406	Kaanseri fixee gadaamessaatiif maaliif hin calalamne?	1. Gatiinsaa mi'aa dha 2. Gonkumaa hin yaadnee 3. Nama dhukkuba 4. Fayyaa waanan ta'eef 5. Waa'eesaa hin beeku 6. Ilaalcha maatii 7. Sodaa dhukkubicha qabaachuu beekuu 8. Rakkoo amantaa	

		9. Kan biraa….	

Kutaa V.Gaafiiwwan saaxilammumma kaanserri fiixee gadaamessa madaalan						
TL	Gaafiiwwan	Debiifii koodii ramaddii				
		Tasumaayyu wali hingalu	Wali hin galu	hinmurteessiinee	Wali gale	Sirriittii wali gale
501	Kaanserii fixee gadaamessaatiin qabamu ni mala	1	2	3	4	5
502	Shamaroota irraa Dubartoota maangudootu kaanseri kanaaf saaxilama	1	2	3	4	5
503	Dubartoonni umri daumsa kessaa jiran hundumtuu saaxilamtoota	1	2	3	4	5
504	Dubartoota HIV/AIDS dhan qabamanitu saaxilama	1	2	3	4	5
505	Walqunnamtii qaama saalaa nama baay'ee waaliin gochuun carraa kaanserii fixee gadameesaan qabamu ni guddisa	1	2	3	4	5

Kutaa VI. Gaaffiwwan cimminna dhibee kaanserii fixee gadaamessaa madaalan						
TL	Gaafiiwwan	Debii fii kodii ramaddii				
		Tasumayyu wali hin galu	Wali hin galu	Hin murteesine	Wali gale	Sirritti walii gale
601	Yaadni kaaanserii fixee gadaamessaa jedhu na sodaachisa	1	2	3	4	5
602	Yoo kanseri kun na qabe dubartoota HIV/AIDS hin qabamne caalaa natti cima jedheen sodaadha	1	2	3	4	5
603	Kaaanseriin fixee	1	2	3	4	5

	gadaamessaa aka kaan saroota kaanni cimaa mittii					
604	Wal'aanni kaanserii kana sirrittii fayyissu jira	1	2	3	4	5
605	Yoo naqabe waggaa shan caalaa hin jiradhu jedheen	1	2	3	4	5
606	Kaaanseriin fixee gadaamessaa salphumatti fayyaa	1	2	3	4	5
607	Kaanserii kana qabaachun maseenummaaf nama saaxila	1	2	3	4	5
608	Hammi du'a kanserichaa iraaa dhufu xiqoo dha.	1	2	3	4	5
609	Kaaseriin kuun wallitti dhufeenya abbaa manaa koo walliin qabu ni jeqaa	1	2	3	4	5
Kutaa VII. Gaaffiiwwaan faayidaa calalin kanseri fixe gadaamesaa qabu madaalu						
TL	Gaafiiwan	Debii fi kodii ramaddii				
		Tasumaayyu wali hin galu	Wali hin galu	Hin murtessinne	Wali gale	Sirritti wali gale
701	Ariitiin calalli kanseri fixee gadaamessa gochuun walxaxinsa dhibichaa ni hir'isa	1	2	3	4	5
702	Calallin kanseri fixee gadaamessa jijirama fixe gadaamessaa kanseri ta'un dura ni mil'isa	1	2	3	4	5
703	Jijiramni fiixee gadaamesaa calali irraa yoo argamee salphumati ni fayyaa	1	2	3	4	5
704	Calalli kanseri fixee gadaamessa dubartoota HIV/AIDS qabamanif	1	2	3	4	5
705	Calalli kanseri fixee gadaamessa dubartoota HIV/AIDS qabamanif	1	2	3	4	5
706	Calallin kanseri fixee gadaamessa dhiphina sammu kanserichaan wal	1	2	3	4	5
Kutaa VIII. Gaafiiwan wantoota calali kaanseri fiixee gadaamessa guchu dhowwan madaalan						

TL	Gaafiiwwan	Debii fi koodii rammaddii				
		Tasummaayyu wallii hin galu	Wali hingalu	Hin murteesine	Wali gale	Sirritti wallii gale
801	Calalli kanseri fixee gadaamessa gochun baay'ee nama qaaneessaa.	1	2	3	4	5
802	Calalli kanseri fixee gadaamessa gochun nama dhukkuba.	1	2	3	4	5
803	Dubartin hin herumne Calalli kanseri fixee gadaamessa yoo gootee namoonni akka walqunnamttii saalaa jalqabdeetti yaadan	1	2	3	4	5
804	Calalli kanseri fixee gadaamessa gochun baay'ee yaaddoo qabamina jedhu ni dabala	1	2	3	4	5
805	kanseri fixee gadaamessa carraa jireenyaatii kanaaaffuu Calalli gochun hin ittissuu.	1	2	3	4	5
806	Dubri Calalli kanseri fixee gadaamessa yoo gootee dubrumaa ishee balleessaa	1	2	3	4	5
807	Calalli kanseri fixee gadaamessa gochun warra daa'ima qabqnif qofa barbaachisa	1	2	3	4	5
808	Abban manaa koo Calalli kanseri fixee gadaamessa akan taasissuu hin barbaaduu.	1	2	3	4	5
809	Hir'ini Hojettota dubartoota Calalli kanseri fixee gadaamessa godhan waan jiruf nammoni hin calalamne	1	2	3	4	5
810	Ilaalchi hojetoni Calalli kanseri fixee gadaamessa nuuf qaban calalamu nu dhowa	1	2	3	4	5
811	Tajaajilli Calalli kanseri fixee gadaamessa	1	2	3	4	5

	dhiheenyatti argamu dhabuun akka calali hin taasisne gufuu nuti ta'e					
812	Calalli kanseri fixee gadaamessa gochun yeroo baay'ee fudhata.	1	2	3	4	5
813	Gattin Calalli kanseri fixee gadaamessa gochuf bahu gudda dha.	1	2	3	4	5
814	Qaama saalaakoo calallif muldhissuf amantin koo naaf hin eyeemuu.	1	2	3	4	5
815	Qaama saalaakoo calallif muldhissuu nan saalfadha/na qaanessa.	1	2	3	4	5

Kuttaa IX. Gaaffilee ofitti amanamummaa calali kanseri fixee gadaameessaaf gochu muldhissan						
TL	Gaafiiwwan	Debii fii koodii ramaddii				
		Tasumayyu wali hin galu	Wali hin galu	Hin murteessinne	Wali gale	Sirritti wali gale
901	Bakka tajajilli itti fixee gadameessa ilalaman kennamu nan beeka	1	2	3	4	5
902	Calallii fixee gadamessaa gochuutiif beellama itti	1	2	3	4	5
903	Bara jireenya koo keessatti namni caalallii fixee gadameessaa akka taasisu ittan hima	1	2	3	4	5
904	Karaan ittiin kanfalee ilaalamu nan barabaada	1	2	3	4	5
905	Calalamu osson barbaadee gara dhabata fayya akan demu shakki hin qabu	1	2	3	4	5

Kutaa X. gochaa yaadachisu			
TL	Gaafiiwan	Debii fii koodii ramaddii	Bira darbi
1001	Waa'ee dubartii calalii kanseri fixee gadaamessa gootee dhagessee/ilaaltee bektaa?	Eyeen Miti	
1002	Seenaa maattii kanseri fixee gadaamessa qabda?	Eyeen Miti	
1003	Wa'ee kanseri fixee gadaamessa midiyaadhaan dhagessee ykn dubbistee bektaa?	Eyeen Miti	
1004	Doktariin kee waa'ee calallii fixee gadameessaa sitti himee beekaa?	Eyeen Miti	

Approval

I, the undersigned, MPH student declare that this thesis is my original work in partial fulfillment of the requirement for the Master of Public Health in Health promotion and education.

Name of the student: Kalkidan Solomon

Date.____________________ Signature _________________

Approval of the primary advisor and examining board

This thesis work has been submitted with our approval as university advisor and examining board.

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Name of internal examiner: Mr. Muluken Gizaw

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