INTENTION AND PREDICTORS TOWARD CERVICAL CANCER SCREENING AMONG WOMEN ATTENDING ANTIRETROVIRAL THERAPY SERVICES IN SIDAMA REGION, ETHIOPIA 2023.

MSc THESIS

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HAWASSA UNIVESITY, HAWASSA, ETHIOPIA

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INTENTION AND PREDICTORS TOWARD CERVICAL CANCER SCREENING AMONG WOMEN ATTENDING ANTIRETROVIRAL THERAPY SERVICES IN SIDAMA REGION, ETHIOPIA 2023: BASED ON THEORY OF PLANNED BEHAVIOR

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THESIS SUBMITTED TO THE SCHOOL OF GRADUATE STUDIES OF HAWASSA UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES SCHOOL OF NURSING

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IN PARTIAL FULFILLMENT OF REQUIREMENTS FOR A DEGREE OF

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CERTEFICATE OF APPROVAL SHEET

I am nursing student, who is studying adult health nursing, and I confirm that I will present and summit my original thesis titled ‘’ **Intention and predictors toward cervical cancer screening among women attending antiretroviral therapy services in Sidama region, Ethiopia 2023”**.

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This is to certify that the thesis entitled "**Intention and predictors toward cervical cancer screening among women attending antiretroviral therapy services in Sidama region, Ethiopia 2023"**. Submitted in partial fulfillment of the requirements for the degree of Masters with specialization in adult health, the Graduate Program of the School of Nursing, and has been carried out by Deribe Adisu, under our supervision, Id. No 0004/14. Therefore, we recommend that the student has fulfilled the requirements and, hence, can submit the thesis to the department.

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We, the undersigned, members of the Board of Examiners of the final open defense by Deribe Adisu have read and evaluated his thesis **Intention and predictors toward cervical cancer screening among women attending antiretroviral therapy services in Sidama region, Ethiopia 2023"**..'' and examined the candidate. This is, therefore, to certify the thesis has been accepted in partial fulfillment of the requirements for the degree.

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Final approval and acceptance of the thesis is contingent on the submission of the final copy of the thesis to the School of Graduate Studies (SGS) via the School Graduate Committee (SGC) of the candidate's department.

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DECLARATION

I declare and affirm that this thesis is my own work by signing below. In the preparation, data collection, data analysis, and conclusion of this thesis, I adhered to all ethical standards of scholarship. All scholarly material incorporated in the thesis has been acknowledged through citation. In the production of this thesis, every attempt has been made to avoid plagiarism. This thesis is submitted in partial fulfillment of a graduate degree requirement at Hawassa University College of Medicine and Health Science School of Nursing, Department of Adult Health. I hereby certify that this thesis has not been submitted to any other institution for the award of any academic degree, diploma, or certificate. Brief quotes from this thesis may be used without special permission as long as the source is properly and completely acknowledged. A request for permission to use extensive portions of, or reproduction of, this thesis in whole or in part may be granted by the head of the department or all advisors of the thesis where the proposed use of the material, in his or her opinion, is in the interest of scholarship and publication. In all other cases, permission must be obtained from the thesis author. Principal Investigator:

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
CCS	Cervical cancer screening
DNA	Deoxyribonucleic Acid
HIV	Human Immune Deficiency Virus
HPV	Human Papilloma Virus
ICC	Invasive cervical cancer
PBC	Perceived behavior control
TPB	Theory of Planned Behavior
WHO	World Health Organization
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection with Lugo's Iodine

ABSTRACT

Background: Cervical cancer continues to be a serious public health problem in developing countries. In Ethiopia, the proportion of women with human immunodeficiency virus (HIV) who receive cervical cancer screening services remains low. To promote screening behavior, it is important to understand the predictors of women's intention to receive cervical cancer screening.
Objective: To assess intention and predictors toward cervical cancer screening among women attending antiretroviral therapy services in the Sidama region, Ethiopia, 2023.
Methods: An institutional-based mixed-method study was conducted from June 6 to July 4, 2023. Using systematic random sampling, a total of 422 women on antiretroviral therapy services were involved in the study, whereas a purposively selected 10 women were included in an in-depth interview. Data collection tools adapted from Theory of planned behavior for both qualitative and quantitative measure. Quantitative data was collected by Kobo Collector and analyzed using SPSS version 25**.** Linear regression analyses were done to identify statistically significant independent variables with the intention of cervical cancer screening. The qualitative data were analyzed using ATLAS.ti7 through thematic analysis. The study obtained ethical approval from Hawassa University of college of medicine and health science.
Result: A total of 415 patients participated in this study with making a response rate of 98%. The mean age of respondents was 35.96±8.79 years. Theory of planned behaviors variables explained 72.2% of the variance in intention to receive cervical cancer screening among women on antiretroviral therapy. The mean score of intention was 3.92±0.92. About three-fourths 314 (72.5%) of the participants who scored above the mean were intended to be screened for cervical cancer in the next three months. Attitude towards cervical cancer screening ($\beta=0.456$, $p<0.05$), social influence ($\beta=0.207$, $p<0.05$), perceived easiness and difficulty towards intention to screen cervical cancer ($\beta=0.156$, $p<0.05$), past screening experience ($\beta=0.110$, $p<0.05$), and comorbidities ($\beta=0.065$, $p<0.05$) were significant predictors of intention to receive screening for cervical cancer. Qualitative findings revealed that a negative attitude towards screening, community disapproval, and cervical cancer treatment costs were barriers to cervical cancer screening intention.
Conclusion: Nearly three-fourth of women was found to have the intention to receive cervical cancer screening. Attitude towards screening, social influence, perceived easiness and difficulty of the intention to screen, past screening experience, and comorbidities were factors affecting women's intention to screen cervical cancer. So, we recommend interventions aimed at enhancing HIV-positive women's cervical cancer screening behavior by targeting attitudinal change and creating positive social pressure toward screening. Further research is recommended using a prospective cohort study design to see how much intention is transformed into behavior.
Keywords: Cervical cancer and screening, HIV/ADIS, Theory of Planned Behavior, Ethiopia.

1. INTRODUCTION

1.1. Background

Cancer of the cervix, which connects the lower section of the uterus to the vagina, is known as cervical cancer (Cooper et al., 2014). the widespread infection with high-risk strains of the exceedingly prevalent sexually transmitted oncovirus known as the human papolomavirus (HPV) is the primary cause of nearly all cervical cancer cases (99%) (Jameson et al., 2018, Sung et al., 2021, Gebrie, 2022). Women with HIV are six times more likely to develop cervical cancer cases than the general population (Stelzle et al., 2021).

Cervical cancer screening is the testing of all women at risk for cervical cancer to check for an early change in the cervix. Women must be screened because an HPV infection can go on for a long time without showing any signs or symptoms (Torode et al., 2021). Women can be screened for cervical cancer with a variety of tests and treatment options (Sawaya et al., 2019).

The World Health Organization (WHO) suggests that in low-income countries, visual inspection with acetic acid (VIA) or cytology has been utilized as the main screening method for both HIV-positive and non-HIV-positive women (WHO, 2021). In Ethiopia, screening is recommended at HIV diagnosis, regardless of age, once sexually exposed, and every two years screening is integrated as part of normal care for HIV-positive women into national policy. It is advised to utilize visual screening techniques such as visual inspection with acetic acid and liguloid iodide(VIA and VILI) in settings with minimal resources (MOH, 2021).

WHO issued a global call in 2021 to prevent cervical cancer as a public health issue, with the HPV vaccine, cervical cancer screening, and disease management functioning as the primary preventative strategies (WHO, 2021). In low-resource countries, there is a shortage of effective HPV vaccination. Therefore, despite HPV vaccination, the importance of cervical cancer screening in women who are HIV-positive for secondary prevention remains (Usman et al., 2022). Programs for cervical cancer screening have decreased cervical cancer incidence and death rates and raised public awareness of the need to prevent the disease. By putting more emphasis on screening, one can expect to live longer and enjoy a higher standard of living (Aimagambetova et al., 2021, Bedell et al., 2020).

The theory of planned behavior is a theory that predicts and understands particular behaviors in a particular context. This theory holds that behavioral intention determines behavior. Behavioral intention is controlled by behavioral attitude, subjective norms, and perceived behavior control (PBC). At the same time, PBC can also directly affect behavior. It is the combination of attitude, subjective norm, and perceived behavioral control that results in the formation of the intention to carry out a behavior. Finally, intention is the possibility that an individual will participate in a behavior, and it immediately precedes the behavior (Ajzen, 1991).

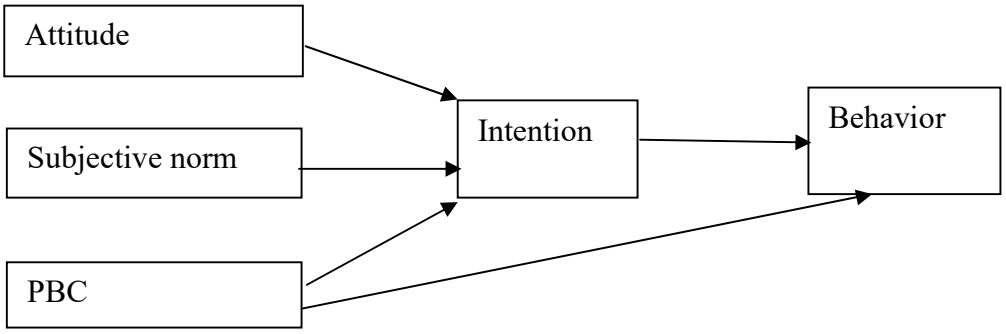

Figure 1: Theory of Planned Behavior (TPB) model.

1.2. Statement of Problem

Globally, in 2018, there were over 570,000 new instances of cervical cancer and 311,000 deaths due to the condition. Cervical cancer continues to be a serious public health issue that primarily affects middle-aged women in underdeveloped nations (WHO, 2021). Women with HIV are significantly burdened by invasive cervical cancer, and African women are mostly affected compared to other continents (Rohner et al., 2020, Stelzle et al., 2021). The burden of cervical cancer linked to HIV is shifting more and more toward younger women as the HIV prevalence in sub-Saharan Africa grows(Ibrahim Khalil et al., 2022). In Ethiopia, cervical cancer is a significant public health issue for females, and more people are seeking treatment for it. Nearly half (46.7%) of women with gynecological cancer who visited an oncology facility had cervical cancer (Hailu et al., 2020). Long-term cervical cancer burdens are significantly reduced by early screening, HPV vaccination, and declining HIV prevalence (van Schalkwyk et al., 2021).

In America, 44% had a pap smear test among women with HIV (Barnes et al., 2018). The mean annual cervical cancer screening coverage among Eastern Europe women with HIV is 49.4% (Tisler et al., 2021). In low- and middle-income countries, cervical cancer screening results range from 0.7% to 88% of women with HIV participating in cervical cancer screenings at least once during their lifetime (Kasraeian et al., 2020). According to a systematic review and meta-analysis, Africa has a 41% uptake of cervical cancer screening among HIV-positive women (Bogale et al., 2021). In Ethiopia, cervical cancer screening uptake among HIV-positive women is 18.17%, which is lower than the recommended coverage of the target group by the national guideline (80%) (Dessalegn Mekonnen, 2020).

The burden due to low and delayed screening was a poor prognosis, a delay diagnosis, an advanced stage of human papillomavirus infection, and a lack of therapy and treatment effectiveness that are common in low-income countries. Cervical cancer screening is required among individuals with HIV to prevent and treat the disease early because it affects women with HIV at a higher rate than the general population (Hull et al., 2020).

Cervical cancer screening is affected by patient factors, health issues, and contextual issues. Patient factors include attitude toward cervical cancer screening, lack of knowledge about cancer, the benefits of screening, and the importance of therapy. Health issues include an

inconsistent appointment system, a lack of equipment, and poor patient-centered communication abilities. Contextual issues: distance from facilities, public transportation, and work obligations (Dessalegn Mekonnen, 2020, Lin et al., 2022, Solomon et al., 2019, Matenge and Mash, 2018, Ebu, 2018).

. The screening is significantly affected by attitudes, subjective norms, perceived behavioral control, and intentions. The delay in screening uptake was also decreased by making participants formulate implementation intentions and write up an action plan stating when, where, and how they would schedule an appointment. The likelihood of regret, which was also taken into consideration, along with action planning and perceived behavioral control, appears to have a significant effect on screening uptake (Dsouza et al., 2021).

Magnitude of intention among HIV-positive women in china, 61.5% intended to be screened in the future (Lin et al., 2022), and in Ghana, 82% of them intend to get screened for cervical cancer (Ebu, 2018)

WHO recommended self-sample collection as a method that is acceptable to women and seen as secretive, private, and time-saving to improve cervical cancer screening rates. Participants describe the procedure as being female-friendly, painless, and rapid (WHO, 2021). Within Ethiopia, to increase cervical cancer detection and treatment, the majority of healthcare facilities provide VIA and cryotherapy in addition to counseling on cervical cancer screening and HIV relationships (MOH, 2021).

Even with ongoing counseling and a free screening program, the rate of cervical cancer screening among HIV-positive women in Ethiopia is low (Dessalegn Mekonnen, 2020). Many studies in Ethiopia have looked at knowledge, attitude, and practice, as well as associated factors (Assefa et al., 2019, Desta et al., 2022, Gebrekirstos et al., 2022, Ruddies et al., 2020). However, none have looked at the intention and predictors of cervical cancer screening among HIV-positive women. Intention drives behavior; therefore, this study aimed to understand participants' intentions toward cervical cancer screening to identify determinants of cervical cancer screening behavior using the theory of planned behavior, which provides a more comprehensive picture of human intention, feeling, and conduct, and the TPB is better at describing cervical cancer screening intentions (Dsouza et al., 2021).

1.3. Significance of the study

In Ethiopia, HIV-positive women are particularly worried about cervical cancer. Cervical cancer screening tests have developed into a workable alternative treatment option in recent years. Women's knowledge, beliefs, social influence, and external controls on the usage of the service were thought to be significant elements that drove women to have an intention to promote screening practices. This study's goal is to close research gaps because there hasn't been much research done in this field in Ethiopia.

At various levels, cancer-related governmental and non-governmental organizations (NGOs), as well as healthcare professionals, can use the identified predictors of cervical cancer screening intention and barriers to screening to develop suitable theory-based interventions. It can assist in the development of practical health education and promotion initiatives in the Ethiopian environment that address key assumptions about perceptions of behavioral control, subjective norms, and attitudes toward cervical cancer screening. It also makes it simpler for women to access extra services that might be helpful and data that will act as a starting point for further research.

2. OBJECTIVE

2.1. General objective

- To assess the magnitude of intention and predictors towards cervical cancer screening among women attending ART services in Sidama Region, Ethiopia, in 2023, based on the theory of planned behavior

2.2. Specific objective

- To determine the magnitude of intention towards cervical cancer screening among women attending ART services in the Sidama Region, Ethiopia, in 2023
- To identify predictors of intention to use cervical cancer screening among women attending ART services in Sidama Region, Ethiopia, in 2023.

2.3. Research question

1. What is the magnitude of intention toward cervical cancer screening among women attending ART services in the Sidama region?
2. What are the predictors of intention to receive cervical cancer screening among women attending ART services in the Sidama region?

3. LITERATURE REVIEW

3.1. Intention to screen for cervical cancer

A cross-sectional survey conducted in China revealed that among 213 HIV-positive women, 61.5% intended to be screened in the future (Lin et al., 2022). According to descriptive cross-sectional research on 660 HIV-positive women in Ghana, 82% of them intend to get screened for cervical cancer (Ebu, 2018). In a study conducted in Uganda, 98.8% of HIV-positive women intended to bring in their HPV-self-collected samples for cervical cancer screening (Mitchell et al., 2017).

Based on the theory of planned behavior, a community-based cross-sectional study found that 38.51% of commercial sex workers in Gondar Town intended to undergo cervical cancer screenings, and HIV-positive women were more likely to do so (Eshetu et al., 2022). Another cross-sectional study done based on the theory of planned behavior in Bahir Dar city was 55%, Debre Birhan was 45.3%, and Gomma district of Jimma town was 57.3% (Alemnew et al., 2020, Getahun et al., 2020, Wollancho et al., 2020).

3.2. Predictors towards the intention to screen for cervical cancer

3.2.1. Socio-demographic variables affect the intention to screen for cervical cancer.

Socio-demographic factors have the biggest impact on the decision to get a cervical cancer screening.

In a community-based cross-sectional study in England, China, and Tanzania, younger women, from less poor areas, had a lower educational status and had no children were more likely to say they intended to go to screening (Wilding et al., 2022, Zhang et al., 2019, New-Aaron et al., 2020).

In a study carried out in Uganda among HIV-positive women, the intention to screen for cervical cancer was predicted by education level. The intention to screen was 2.67 times (95% CI, 1.61-4.42) more probable in HIV-positive women with low levels of education than in those with no formal education. Higher levels of education were 3.16 times (95% CI, 1.42-7.02) more likely than those with no formal education to have the intention to screen (Ebu, 2018).

3.2.2. Past screening experience related to intention to screen for cervical cancer

A community-based cross-sectional study done in England and China assessed the intention to screen for cervical cancer and the prior screening experiences of people with whom they had positive relationships (Wilding et al., 2022, Bai et al., 2018).

Studies in Bahir Dar, Gondar Town, and southern Ethiopia's Yirgalem town that used the theory of planned behavior among women who were attending maternal and child health services showed a positive relationship between the intention to utilize cervical cancer screening and prior screening experiences (Eshetu et al., 2022, Alemnew et al., 2020, Abamecha et al., 2019).

3.2.3. Knowledge related to the intention to screen for cervical

Promoting cervical cancer screening behavior among women with HIV was made possible by a Chinese study that found that HIV-positive women who were more knowledgeable about the procedure (OR = 2.373, 95% CI = 1.593–3.534, p = 0.000) were more likely to intend to undergo cervical cancer screening (Lin et al., 2022, Zhang et al., 2019).

3.2.4. Attitude, subjective norm, and perceived behavioral factors associated with screening for cervical

In a community-based cross-sectional study of low-income women in the United States and an online study conducted in the United Kingdom, attitudes and subjective norms were significantly related to their intention to screen for cervical cancer (Asare et al., 2022, Fielden and Holch, 2022).

In Ethiopia, using the theory of planned behavior, according to a community-based cross-sectional study done in Bahir Dar, Debre Birhan City, the Jimma Gomma district, and an institutional-based cross-sectional study done in Southern Ethiopia's Yirgalem town among women attending maternal and child health services, perceived behavioral control, subjective norms, and attitudes toward cervical cancer screening were all predictive of the women's intention to screen for cervical cancer (Getahun et al., 2020, Wollancho et al., 2020, Abamecha et al., 2019, Eshetu et al., 2022, Alemnew et al., 2020).

3.3 Conceptual framework

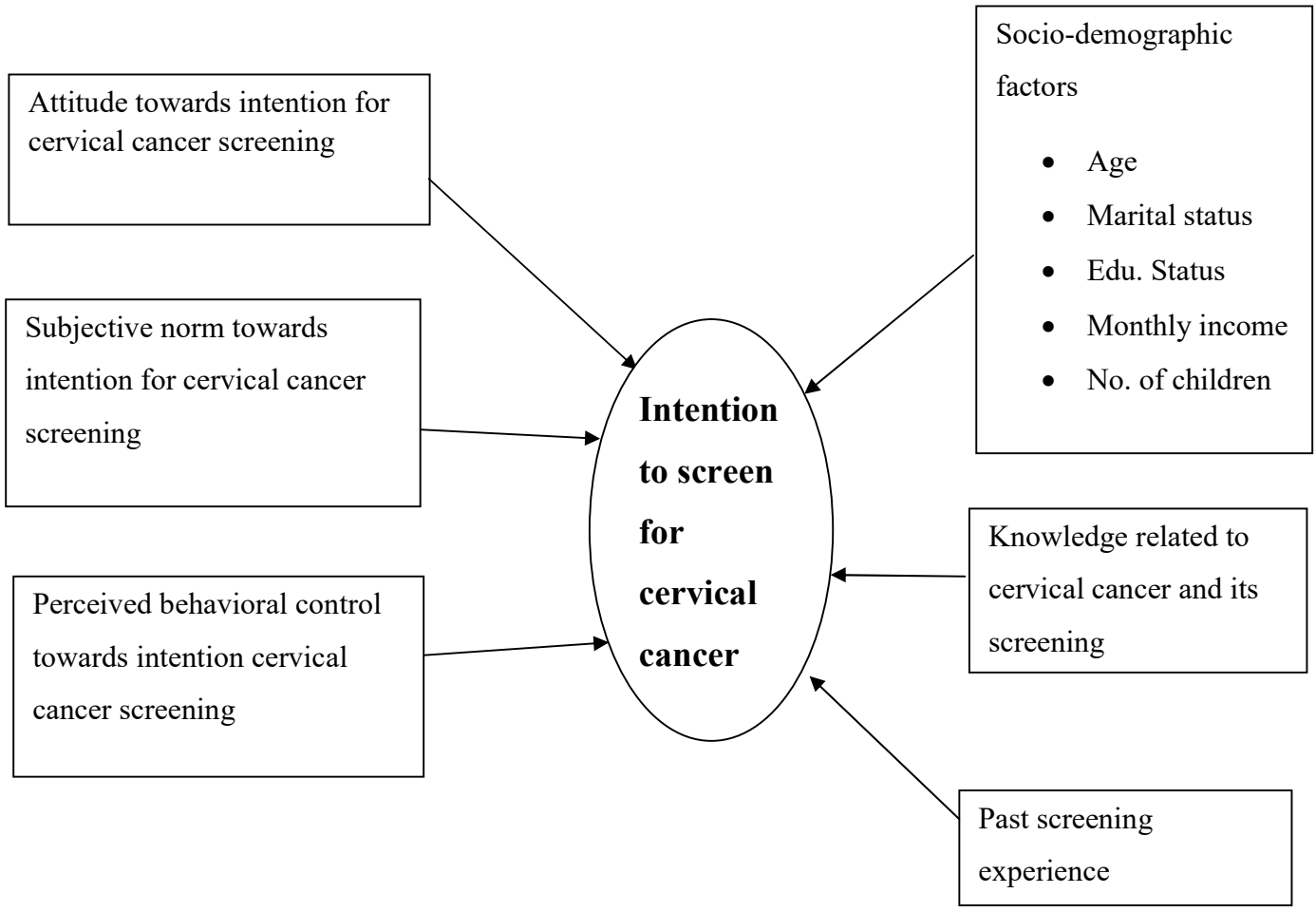

Figure 2: Conceptual framework adapted from the Theory of Planned Behavior (TPB) model (Ajzen, 2006).

4. METHODS AND MATERIALS

4.1. Study design, area and period

An institutional-based mixed-method study design (mixed quantitative and qualitative data) was employed. The study was conducted in health facilities that currently have ART service in Sidama Regional State, Southern Ethiopia, from June 6 to July 4, 2023. The region has 24 ART service centers, including one comprehensive specialized hospital known as Hawassa University Comprehensive Specialized Teaching Hospital. More than 10,000 HIV-positive men and women in the region are on ART, with 60% of them being female and more than 80% being age-eligible (FOCAL, 2023).

4.2. Population

4.2.1. Source of population

All women between the ages of 18 and 59 who are on ART in the Sidama region

4.2.2. Study population

All randomly selected women aged 18–59 who are on ART in Sidama region's selected ART service center during the data collection period

4.3 Inclusion and Exclusion Criteria

4.3.1. Inclusion criteria

All women aged 18–59 with HIV who are on ART in a selected ART service center in the Sidama region

4.3.2. Exclusion criteria

Women who have undergone total hysterectomy (removal of the complete uterus), now have confirmed cervical cancer, who are not exposed to sexual intercourse, have acute or severe mental problems, and are critically ill

4.4. Sampling

4.4.1. Sample size determination for quantitative

The sample size calculation is based on a single population proportion formula as follows:

$$n = \frac{(z\frac{\alpha}{2})^2 p(1-p)}{d^2} = \frac{(1.96)^2(0.5)(0.5)}{0.05^2} = 384$$

Then, considering the 10% non-response rate, n = 384*10%+384 = 422.

Their fire, total sample size for this study was 422.

Where:

n = Sample size required for the study

Zα/2 = 1.96, standardized normal distribution curve value for the 95% confidence interval

p = 0.5, because no study was conducted on the first and second objectives, the population proportion, and p-value, were taken at 50%.

d = 0.05 degree of margin of error

4.4.2. Sampling technique and sampling procedure

For quantitative purposes, there are 24 ART service centers in the Sidama region. From these ART service centers, seven were selected randomly using a simple random sampling technique (lottery method), and the total sample size was allocated to the selected ART service center in proportion to the number of clients. Then, from each ART service center, study subjects were selected by a systematic random sampling technique. Randomly selected ART service centers for study are Hawassa Compressive Specialized Hospital (HUCSH), Adare General Hospital (AGH), Yirgalem General Hospital (YG), Aleta Wondo Primary Hospital (AWPH), Yirba Primary Hospital (YPH), Wondogenet Kela health center (WKHC), and Millennium health center (MHC).

Proportional allocation $n = \frac{n \times Nj}{N}$

- nj =is the sample size of the jth ART service center.
- Nj =is the population size of the jth ART service center.
- n = n1+ n2+n3+n4... is the total sample size (422).
- N=N1+N2+N3+N4... is the total population size (3,946).

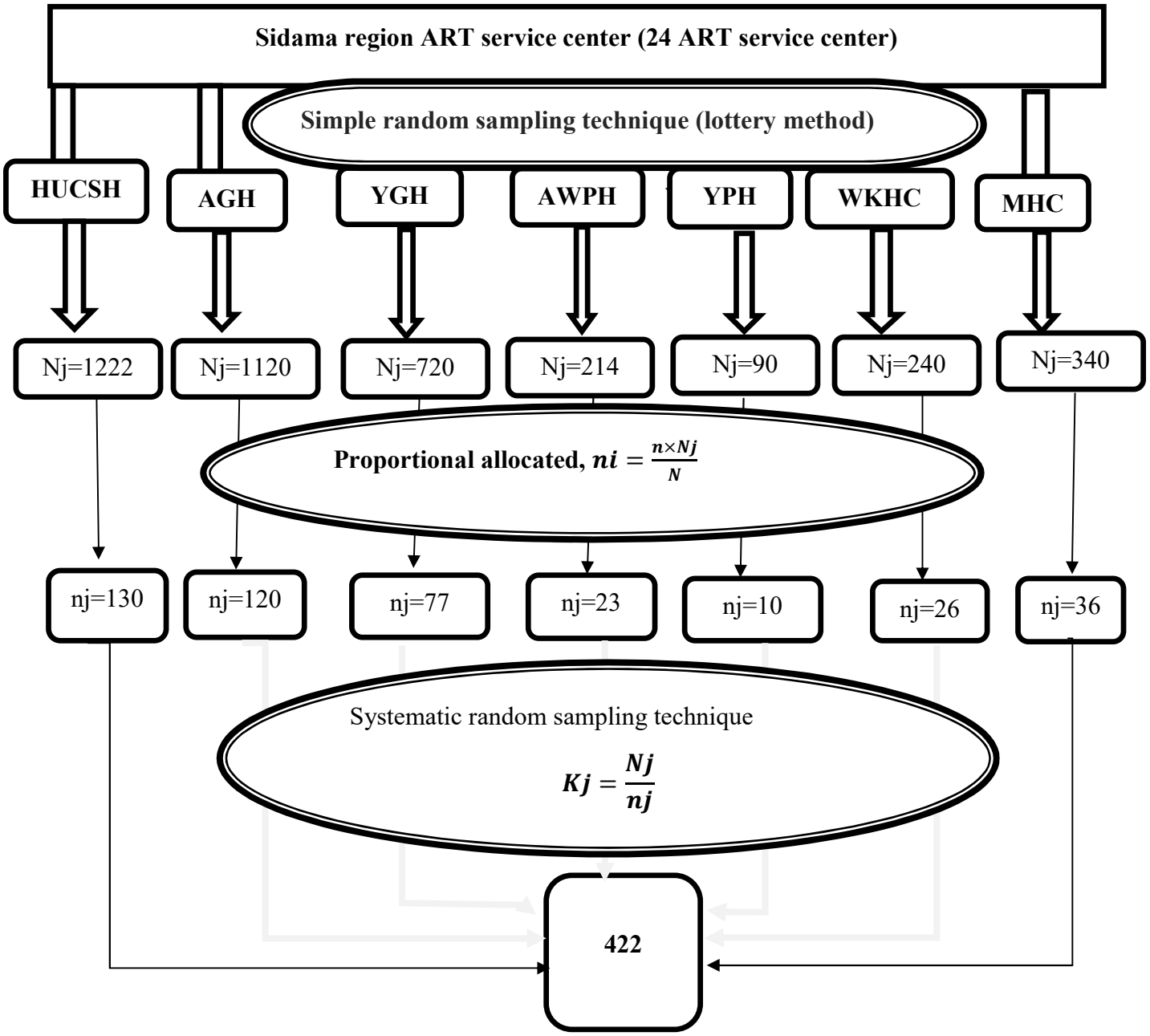

Figure 3: Sampling technique and procedure for quantitative study

For qualitative data, samples were taken from the selected ART service center for study. Purposive sampling was used to select the patients who participated in the key informant interview by compiling a list of individuals who had not participated in the quantitative study, and those chosen for the study were 5 adherence supporters and 5 community workers, which means that they promote HIV testing and cervical cancer screening at the health institution and community level, respectively.

4.5. Variables of the Study

4.5.1. Dependent variable

- Intention toward cervical cancer screening

4.5.2. Independent variable

- Socio-demographic characteristics include age, educational status, marital status, occupation, monthly income, and number of children.
- Clinical factors: WHO stage of HIV/AIDS, time on ART, and Medical Comorbidities
- Family history of cervical cancer
- Experience with cervical cancer screening
- Knowledge about cervical cancer and screening
- Theory of planned behavior constructs: attitude, subjective norm, and perceived behavioral control.

4.6. Data collection and analysis

4.6.1. Data collection tools and procedure

The structured questionnaire was prepared in English and adapted from the theory of planned behavior (Ajzen, 2006) and relevant pieces of literature (Alemnew et al., 2020, Getahun et al., 2020, Wollancho et al., 2020). The questionnaire was translated into *Amharic* and *Sidamu afoo* (the local languages) and then translated back to English to ensure consistency. The *Amharic* and *Sidamu Afoo* versions were used for data collection. The questioners contains socio-demographic characteristics, knowledge about cervical cancer and it's screening, past behavior, comorbidities, family history, WHO stage of HII/AIDS, time on ART, women's intention to screen for cervical cancer, attitude towards cervical cancer screening, subjective norms, and perceived behavioral control on intention to cervical cancer screening.

Intention

Intention to use CCS was measured by using four items. Responses will range from 'very unlikely' (1) to 'very likely' (5). The composite mean score is determined by summing up all the items (Ajzen, 2006).

Attitude

Direct attitude towards the use of CCS was measured using two Likert scale items, measuring the benefit or outcome of using CCS services in the next 3 months. Two items were used to measure behavioral belief, and the evaluation of CCS belief was measured by asking respondents to evaluate one salient consequence accruing from using CCS services. Then, composite mean scores of attitude summed up all items of direct and indirect attitude (Ajzen, 2006).

Subjective norm

Two Likert scale items were used to measure the direct subjective norm. To assess indirect subjective norms towards CCS, participants were asked four Likert scale items. finally; the composite scores of the subjective norm sum up the item's scores (Ajzen, 2006).

Perceived behavioral control

A direct measure of PBC was measured by using two items. One control belief item was used to measure indirect PBC ranging from very unlikely to very likely scale and perceived power of control was measured using a one-item Likert scale ranging from 'strongly disagree' to 'strongly agree' scored on a 1 to 5 scale response format. Finally, the composite scores of PBC sum up the all item's scores. In all cases, the higher scores indicate a greater value for all who were measured using the TPB constructs to encourage the use of cervical cancer screening services (Ajzen, 2006).

Knowledge about cervical cancer and its screening

Knowledge about cervical cancer and screening was assessed using a 10-item response format about signs and symptoms, risk factors, methods of prevention, frequency of screening, and eligibility for screening. All items were scored as continuous variables and pulled together, where the mean score was computed for further analysis. Past behavior experience One item was used to ask respondents whether they have ever been screened for CCS by using a yes-or-no approach (Eshetu et al., 2022, Getahun et al., 2020).

Seven nurses working on antiretroviral therapy service (ART) units and two nurses from the chosen health institution collect the data and ensure its quality throughout the whole data collection process, respectively. The principal investigator coordinates the overall activity. Recruitment of study participants was taking place between June 6 and July 4, 2023.

Qualitative, a semi-structured questionnaire adapted for in-depth interviews (IDI) helped to generate evidence on women's attitudes, norms, and perceived behavioral control towards the intention to screen for cervical cancer (Ajzen, 2006). Data collectors utilized a semi-structured interview guide written in English and translated into the local languages (*Sidamu Afoo*) and *Amharic* to conduct in-depth interviews. The reasons to include adherence supporters and community workers are that they may know about screening, and they also know community problems because they are from the community and are receiving ART services. Additional females at different health institutions and in the community are expected to create awareness in the community and motivate and counsel women to go through screening. The principal

investigator conducted all the interviews in a private room and on average, the interview took 30 minutes. Information saturation was achieved after 8 interviews. However, an additional two females were interviewed to make sure the data saturation was high and no new information was obtained.

4.6.2. Data quality control

The questionnaire was pre-tested on 5% of the sample size at Leku General Hospital to avoid any confusion during the actual data collection period, and corrections were also made accordingly. The reliability test was done; Cronbach's alpha was 0.896, 0.923, 0.864, and 0.900 for intention, attitude, subjective norm, and perceived behavioral control questionnaires, respectively. The data collectors and supervisors were trained before actual data collection, and the principal investigator and supervisors closely supervised the data collector. During data collection, both supervisors and the data collectors checked the data for its completeness and missing information at each point. Furthermore, data was also checked during entry into the computer before analysis.

For qualitative: The interview was conducted in the local *Sidamu Afoo* and *Amharic* language in a quiet place. The interview was taped, and transcribed, the transcribed data was reviewed and cross-checked with the recorded data and then simultaneously translated into English.

4.6.3. Data processing and analysis

The quantitative data was collected by Kobo Collector using a Smart phone, and it was exported to SPSS version 25. Data cleaning, recoding, and checking for missing values were done. Linear regression assumptions were checked for normality, linearity, homoscedasticity, autocorrelation, multicollinearity, and outliers. The normality assumption was checked using skewness and kurtosis (0.85 and 0.46). However, skewness and kurtosis values between -2 and +2 and -7 and +7 are considered normal when the sample size is greater than 300 (Kim, 2013). Linearity was checked by using a scatter plot of the standard residual versus the predicted value from the regression analysis for multiple linear regressions. There was a linear relationship between the dependent and independent variables. A test of homoscedasticity using Cameron Trivedi's decomposition of the IM-test with the number of predictors was conducted, and it showed insignificance. The multicollinearity assumption was checked using tolerance and variance inflation factors and the values of all variables greater than 10% and less than 10 of tolerance and

VIF, respectively. The test assumption of autocorrelation using the Durbin-Watson value is 1.76, and the Durbin-Watson value is between 1.5 and 2.5, so there is no problem with auto-correlation. Outlier assumptions are checked using Cook's distance. It shows the absence of an outlier (Tranmer and Elliot, 2008). As a result, simple linear regression was employed to examine the association between each independent variable and the intention to screen for cervical cancer. Variables with a p-value less than 0.2 in simple linear regression were entered into multiple linear regressions. R-square was used to assess the variation in intention to receive cervical cancer screening explained by the theory of planed model. An unstandardized beta coefficient was used to interpret the effect of the independent variable on the intention to receive cervical cancer screening.

For qualitative data, the qualitative data was analyzed using ATLAS. ti version 7. First, the audio recording was fully transcribed into words and then translated into English. From the translated data, codes were created. Based on the pattern of the responses, a set of categories were identified, and each category was placed in its corresponding theme. Finally, the finding was discussed in triangulation with the quantitative result.

4.7. Operational definitions

Intention for cervical cancer screening: women plan to be screened in the next three months. The composite score ranges from four to twenty, and a high score indicates an intention to screen (Eshetu et al., 2022), (Getahun et al., 2020).

Attitude towards CCS: women's feelings and beliefs about cervical cancer screening were measured with four items having a five-point Likert scale for both direct and indirect attitudes. A high score indicates has attitude to screen cervical cancer (Eshetu et al., 2022, Getahun et al., 2020).

Subjective norms towards CCS: social influence or women's beliefs about whether most people approve or disapprove of cervical cancer screening. It was measured with six items on a five-point Likert scale. The higher score indicates a high social influence to screen cervical cancer (Eshetu et al., 2022, Getahun et al., 2020).

Perceived behavioral control towards CCS: perceived easiness and difficulty to be screened **or t**he woman's confidence or ability to screen—was measured with four items on a five-point

Likert scale, both indirect and direct. The higher score indicates a higher perceived ability of individuals to screen cervical cancer (Eshetu et al., 2022, Getahun et al., 2020).

Knowledge about cervical cancer and screening was categorized into two groups: good and poor. A value greater than or equal to the mean value is classified as good knowledge, while a value less than the mean value is classified as poor knowledge (Getahun et al., 2020).

Comorbidities: The question on comorbidities focused on six major chronic conditions: chronic liver disease, chronic kidney disease, chronic lung disease, diabetes, cancer, and cardiovascular disease, based on registration data. Comorbidities are defined as one or more chronic conditions from a list of six (Marcus et al., 2020).

4.8. Ethical Consideration

After approval of the proposal, ethical clearance was obtained from the institutional review board (IRB) of the Hawassa University of Health Science. Institutions participating in the study and the Sidama Region Health Bureau received official letters from the Department of Nursing. The Sidama Region Health Bureau was provided permission, and the study's participating facilities were sent an official letter. All study participants were asked for their written consent after being informed of the study's objectives and the method's lack of invasiveness. Respondents were assured of the confidentiality of the information and their anonymity (unnamed). Participants were allowed to understand more about the study and had the choice of participating or not.

4.9. Result dissemination plan

The findings of this study will be submitted to the School of Nursing at Hawassa University, the City of Hope in the United States, Martin Luther University in Wittenberg, Germany, and the Sidama Region Health Bureau to use them in the formation of a strategic and educational plan for the promotion of cervical cancer screening. Documents on the study's facilities will also be included in copies of the results. Also, attempts will be made to present at professional, local, national, and international meetings and publish in peer-reviewed national or international publications.

5. RESULTS

5.1. Socio-demographic characteristics of respondents

Out of 422 participants, 415 completed the interview with a response rate of 98%. The age of respondents ranged between 18 and 59 years, with a mean age of 35.96±8.79 years. Concerning the educational level of the respondents, 123 (29.7%) have a diploma or above. Regarding the marital status of the respondents majority, 206 (49.6) are married. Three hundred thirty (79.5%) of respondents have given birth once, as shown in Table 1.

Table 1: Socio-demographic characteristics of respondents for quantitative, Sidama Region ART Center, Ethiopia 2023 (n=415)

Variable	Categories	Frequencies	Percent
Educational status	No formal education	76	18.3
	Primary	109	26.3
	Secondary and pre	107	25.8
	Diploma	58	14
	Degree and above	65	15.7
Marital status	Single	68	16.4
	Married	206	49.6
	Widowed	89	21.4
	Divorced	52	12.5
Occupation	Governmental employed	101	24.3
	Self-employed	147	35.4
	Housewife	137	33
	Other	30	7.3
Monthly income	>1000	308	74.2
	500-1000	78	18.8
	<500	29	7
Do you have children	No	85	20.5
	Yes	330	79.5

5.2. Source of information, medical and family history, and screening experience

Three hundred eighty-four (92.3%) have heard about cervical cancer and its screening. Of the participants, 336 (84.8%) had heard from health professionals, and most women (74.5% were aware of the presence of precancerous lesion screening procedures. Among participants, 22 (5.3%) had a family history of cervical cancer. Forty-seven (11.3%) have comorbidities; 26 (6.3%) have DM; and most of them, 386 (93%) are WHO stage 1. The mean score of respondents on ART is 8.45±4.92 years, the minimum is 1, and the maximum is 27 years. Of the respondents, 224 (54%) had screening experience in the past, as shown in Table 2.

Table 2: source of information, family history, and experience about cervical cancer and screening of respondents, Sidama Region ART Center, Ethiopia 2023 (n=415)

Variable	Categories	Frequency	Percent
Heard about cervical CA screening	Yes	383	92.3
	No	32	7.70
Source of information	From health professional	307	74.0
	From radio and TV	44	10.6
	From school	16	3.90
	From family, friends, and neighbors	12	2.90
	From leader	4	1.00
Aware of the screening procedure	Yes	309	74.5
	No	106	25.5
Family history of the cervical ca	Yes	22	5.30
	No	393	94.7
Experience with cervical CA screening	Yes	224	54.0
	No	191	46.0
Comorbidities	Yes	47	11.3
	Chronic liver disease	12	2.90
	Chronic kidney disease	1	0.20
	Chronic lung disease	5	1.20
	DM	26	6.30
	Cancer	4	1.00
	Cardiovascular	10	2.40
	No	368	88.7
WHO stage of HIV	Stage 1	386	93.0
	Stage 2	24	5.80
	Stage 3	5	1.20

5.3. Knowledge about cervical cancer and its screening

Among the participants, 152 (36.9%), 136 (31.1%), and 151 (36.4%) knew about the signs and symptoms, risk factors, and prevention methods of cervical cancer, respectively, and 318 (76.6%) knew it could be cured with early screening. Regarding screening frequency, 234 (54.6%) of the participants knew screening was necessary every 2 years, and 65.3% knew who should be screened. For each knowledge item, scores were summed and the mean score was computed, 180 (43.4%) respondents answered above the mean and were considered to have good knowledge, as shown in Table 3.

Table 3: Knowledge of cervical cancer and screening of respondents, Sidama Region ART Center, Ethiopia 2023 (n=415)

Knowledge item		**Frequency**	**Percent**
Total score of knowledge	Good	180	43.4
	Poor	235	56.6
Sign and symptoms	Yes	152	36.9
	No	263	63.1
Risk factors	Yes	135	31.1
	No	280	68.9
Prevention	Yes	151	36.4
	No	264	63.6
Can cure the earliest age	Yes	318	76.6
	No	97	23.4
Who should screen	All exposed to sex	271	65.3
	All reproductive age	144	34.7
Frequency for screening	Every 2 years	234	56.4
	Other	181	43.6

5.4. Intention and TPB construct to cervical cancer screening descriptive score

The magnitude of intention is 314 (72.5%) with a 95% CI (68.2–76.8%), which means 72.5% is intended to screen in the next three months. The mean score of intention is 3.92±0.92, and attitude, subjective norm, and perceived behavioral control are 3.91±1.00, 4.03±0.923, and 3.89±0.97, respectively, as shown in Table 4.

Table 4: Intention and TPB construct descriptive score of respondents, Sidama Region ART Center, Ethiopia 2023 (n=415)

Component	N	Item	Min	Max	Mean	SD
Intention	415	4	4	20	3.92	0.92
Attitude	415	4	4	20	3.91	1.00
Subjective norm	415	6	6	30	4.03	0.92
PBC	415	4	4	20	3.89	0.97

5.5. Relation between intention and TPB constructs

Pearson correlation analysis was done to explore the relationship among the TPB constructs. All TPB contracts showed a positive and significant correlation with intention at a p-value of < 0.05. All TPB construct variables had positive and strong relations with each other, and all constructed strong and positive correlations with intention, as shown in Table 5.

Table 5: Relation between intention and TPB constructs of respondents, Sidama Region ART Center, Ethiopia 2023 (n=415)

Component	Intention	ATT	SN	PBC
Intention	1			
ATT	.839	1		
SN	.779	.828	1	
PBC	.777	.849	.830	1

5.6. Predictors of intention to screen cervical cancer

5.6.1. Quantitative finding

Simple linear regression was conducted to assess the association between intention and predictors. After checking the assumptions of the linear regression, socio-demographic factors (occupation, educational status, and number of children), knowledge, experience of cervical cancer screening, time on ART, comorbidities, and all TPB constructs were candidates for multiple linear regression at a p-value <0.2. In multiple linear regression, attitude, subjective norm, perceived behavioral control, experience of screening, and comorbidities were significant at a 5% level of significance with a 95% CI. Attitude (β=0.456) ($p<0.05$) was the main predictor of cervical cancer screening intention, followed by social influence (β =0.207) ($p<0.05$), perceived behavioral control (β=0.156) ($P<0.05$), past screening experience (β=0.110) ($P<0.05$), and comorbidities (β=0.065) ($P<0.05$).

With a unit increase in the score of the attitude, the intention to receive screening was increased by 0.418, and another variable was kept constant. Similarly, a unit increase in the score of subjective norms resulted in an intention increase of 0.207. With a one-unit increase in the score of the perceived behavioral control, the intention to receive screening was increased by 0.148, and another variable was kept constant. Compared to women who had experience of being screened for cancer, they increased their intention by 0.204 to receive screening compared to those who had no experience with cervical cancer screening. Similarly, compared to women who had no comorbidities, the intention to screen for cervical cancer increased by 0.188 among women with comorbidities, as shown in Table 6.

The variance of 72.2% of the change in intention could be attributed to the combined effect of the predictor's variable; however, 27.8% of the variance is explained by other factors not covered in this study. The difference between the r square and the adjusted R square is 0.7%, which is less than 5% and shows there was no sampling error. Overall model goodness of fitness was checked on the ANOVA table by sig value (p =.000), and the overall model was significant.

Table 6; Factors associated with intention to receive cervical cancer screening of respondents, Sidama Region ART Center, Ethiopia 2023*(n =415)*

Variable	Categories	Unstandardized β	Standardized β	p-value	95% CI of β
(Constant)		.888		.000	(.647, 1.129)
Attitude		**.418**	**.456**	**.000**	**(.301, .535)**
Subjective norm		**.207**	**.207**	**.002**	**(.077, .337)**
PBC		**.148**	**.156**	**.003**	**(.052, .243)**
Occupation	Other (ref)				
	Housewife	-.029	-.015	.684	(-.151-.092)
	Self employee	.029	.016	.634	(-.092-.151)
	Governmental	.037	.017	.577	(-.092, .165)
Educational	No formal (ref)				
status	Primary	.063	.030	.409	-.087-.212
	Secondary	.069	.033	.415	-.097-.234
	Diploma	-.064	-.024	.532	-.266-.138
	Degree & above	.130	.051	.223	-.080-.340
Comorbidities	No(ref)				
	Yes	**.188**	**.065**	**.016**	**(.035, .341)**
Knowledge	Poor (ref)				
	Good	-.074	-.040	.163	(-.178, .030)
Screening	No (ref)				
experience	Yes	**.204**	**.110**	**.000**	**(.095, .314)**
Time on ART		-.004	-.021	.436	(-.014, .006)
No of children		-.009	-.017	.551	(-.041, .022)

5.6.2. Qualitative finding

For the key informant interview, five adherence supporters and five community workers were enrolled and participated; their maximum and minimum age were 40 and 27 respectively and their time on ART was more than or equal to eight. Their educational status was primary school and above, as shown in Table 7.

Table 7: Demographic factor of in-depth interviewer, Sidama Region ART Center, Ethiopia 2023 (n=10)

Participant	Job	Educational status	Age	Time on ART
IDI01	Adherence supporter	Secondary and preparatory	35	15
IDI02	Adherence supporter	Secondary and preparatory	40	22
IDI03	Adherence supporter	Primary	40	19
IDI04	Adherence supporter	Primary	30	12
IDI05	Adherence supporter	Secondary and preparatory	28	10
IDI06	Social worker	Primary	27	8
IDI07	Social worker	Primary	31	11
IDI08	Social worker	Secondary and preparatory	35	15
IDI09	Social worker	Secondary and preparatory	30	16
IDI10	Social worker	Secondary and preparatory	29	13

Accordingly, the main themes that emerged as the key predictors or barriers to women's intention to receive cervical cancer screening were women's attitudes, subjective norms, and perceived behavioral controls, as shown in Table 8.

Attitude

Attitude is one of the factors that can affect screening intention, and the TPB model also puts it as a predictor. This belief is common among many people. In this in-depth interview, women say they don't like screening because screening methods do not go with our culture, hurt the uterus, and people discriminate.

"*Opening the uterus does not go with our culture; this thing does not agree with us. It would be better if the other screening method came to us in another way or another screening method different from visual inspection with acetic acid*." - *(IDI05)*

"The metal hurts the uterus. When I was touched, my uterus was feeling pain. Screening tools frighten me or anyone else; I think there is something to cut out. - (IDI04)

"Someone recognized me. If I have the disease, they will separate me, and I feel hurt or sad when I hear unexpected results. - (IDI01)

"I have never been in a relationship. My husband has been dead for a long time. So, I think there is no need for screening. - (IDI06)"

Subjective norm

Screening intention can relate to social influence, for example, housebound, college, and other relatives. Women say opening the uterus is not good other than husbands, cervical cancer treatments are expensive, and hearing about additional diseases may hurt.

"There are some of my colleagues; why would you be on screen? It's been years since you had sexual intercourse. - (IDI10)

"They tell me that, being HIV positive, you feel hurt when you hear about additional diseases. I have a friend, and they tell me that I shouldn't screen and you shouldn't screen. If we have, how can we treat it? That's how I want to die without asking anyone for medical help. - (IDI09)

*"There are people who say, why should you open the womb? It is not good to open the womb, or that it is "**Haram**" to show it to someone other than your husband. It would be better if the other screening method came to us in another way." (IDI02)*

Perceived behavioral control

The woman's confidence in screening is a factor in her intention to receive cervical cancer screening. Women do not want a screening due to treatment costs, seeing the suffering of other women and the negligence of health professionals during screening.

"I will hasten my death because I do not have money for treatment or because the treatment is expensive; I would rather die than have my children starve. - (IDI08)

"If treatments were free, I would get tested for cervical cancer, and I didn't like screening because they have been seen, they have suffered a lot, and they have not received treatment because it is expensive. – (IDI06)

"Health professionals talk on the phone while we are on the couch; the uterus is open and the door and window are not closed, and when the air enters the uterus, it causes stomach rumbling and pain, and if the examination place is different, it encourages me to do the screen. - (IDI03)

Table: 8 Coding, categories, and theme of respondents, Sidama Region ART Center, Ethiopia 2023 (n=10)

Theme	Categories	Subcategories or code
Attitude	Attitude toward screening intention	Get treatment early
		To prevent
		Importance procedure
		To know myself
	Attitude towards not screening intention	Culture related
		Instrument related
		Stigma
Subjective norm	Influencer to screen	Family
		My colleagues
		Health care provider
		Peer to peer
	Influencers not to screen	Awareness related
		Another opinion
		No, no one…
PBC	Facilitate to screen	Facility
		Free charge
		HIV
		Symptom
		Severity
	Not facilitate screen	Medical cost
		Privacy issue

6. DISCUSSION

This study aimed to assess the intention to receive cervical cancer screening services and its predictors among women on ART in the Sidama region. The mean intention to receive the screening was 3.92±0.923, or about three-fourths (72.5%) intended to screen for cervical cancer. Attitude, subjective norm, perceived behavioral control, past screening experience, and comorbidities were the predictors of intention for cervical cancer screening. In the qualitative study, negative attitudes, social influence, and cervical cancer treatment cost were barriers to the intention to screen.

In this study, the magnitude of intention to receive cervical cancer screening was found to be 72.5%. This means about three-fourths 314 (72.5%) of the participants who scored above the mean were intended to be screened cervical cancer in the next three months. This finding was higher than a study done in China (62%) (Lin et al., 2022). This discrepancy might be due to the difference in how the intention was measured. In the current study, intention is measured by four items; however, the study done in China used a single yes or no question to measure intention. This is also higher than studies done in Ethiopia, Bahir Dar (55%) (Alemnew et al., 2020), Debre Birhan (45.3%) (Getahun et al., 2020), and Jimma 57.3% (Wollancho et al., 2020). This might be due to the different target populations. In all the studies listed above, their target populations were the general population and maternal and child health service users, but in this study, our target population was HIV-positive women. HIV-positive women have higher intentions than other population groups because they visit health facilities more often than other populations (Eshetu et al., 2022). The other difference might be the period (nowadays, it is given more emphasis on cervical cancer screening) (WHO, 2021). This finding is lower than a study done in Ghana among HIV-positive women (82%) (Ebu, 2018). The difference might be sample size, study setting, and intention measurement or analysis model used. In this study, the sample size is 422, and in Ghana, it is 660. To assess intention, a 5-likert scale, which means neutral is an option, is present, but in Ghana, they do not use a neutral or 4-likert scale. This finding is also lower than in a study conducted in Uganda, 98.8% of HIV-positive women (Mitchell et al., 2017). This might be due to the sample collection method; in Uganda, the self-sample collection method is used for screening, whereas in this study, it is VIA. WHO also recommended self-sample collection as a method that is acceptable to women and seen as secretive and private to

improve cervical cancer screening (WHO, 2021). In qualitative findings, most women say "We will screen for cervical cancer if screening methods other than VIA".

Attitude is the main predictor of intention to receive cervical cancer screening. This is in line with different studies conducted on low-income women in the United States and an online study conducted in the United Kingdom (Asare et al., 2022, Fielden and Holch, 2022), and in Gondar (Eshetu et al., 2022); Bahir Dar (Alemnew et al., 2020); Jimma (Wollancho et al., 2020). An in-depth interview shows that the influence of attitude on the intention to receive screening was explained by fear of the procedure and cultural unacceptability. The study participants elucidated that women's belief in screening the use of a speculum would be painful and not go with our culture of opening the uterus. This means that respondents, who believe that cervical cancer screening can detect the disease at an early stage, reduce the risk of getting cervical cancer, and to get treatment at an early stage were more likely to have had a favorable attitude and then more intended to receive cervical cancer screening (Wollancho et al., 2020). Inconsistent with studies done among African-American women and Latinas (Le and Holt, 2018, Roncancio et al., 2015).

Subjective norm was predictor of intention to receive cervical cancer screening. This study is in line with studies done on low-income women in the United States and among Latinas (Asare et al., 2022, Fielden and Holch, 2022), among African-American women (Le and Holt, 2018), and in Gondar (Eshetu et al., 2022), which found a high level of subjective norm significantly predicts intention to screen for cervical cancer. In the qualitative finding, hence, families, friends, and colleagues play an important role in women's decision to seek health care as they are the main source of advice and information. Further, the participants indicated that support and encouragement from family and colleagues would influence women's intention to screen. This implies that leaders, families, friends, relatives, and healthcare providers have the power to influence women's decisions. Interventions should focus on the target population, including those who have the power to influence other's decisions, such as health professionals, families, relatives, friends, and leaders (Eshetu et al., 2022).

In this study, perceived behavioral control was a significant predictor of intention to receive cervical cancer screening. This was in line with previous studies in different settings (Eshetu et al., 2022, Alemnew et al., 2020, Abamecha et al., 2019). The qualitative finding suggested the importance of PBC women's intentions; it is worth considering improving women's sense of

control and confidence through free treatment in public health facilities and working on privacy issues. The participant complains that treatment costs for cervical cancer are expensive. Women have suffered a lot; they have not received treatment because it is expensive

Past screening experience with cervical cancer screening was also another predictor. Women with previous cervical cancer screening experience had more intention to screen for cervical cancer than women who had no experience. This might be because women with previous exposure to screening were already aware of the benefits of the procedure and free from unnecessary gossip or rumors in the community. This finding is supported by studies conducted in England and China (Wilding et al., 2022, Bai et al., 2018), Bahir Dar (Alemnew et al., 2020), and Yirgalem (Abamecha et al., 2019).

This study also found that comorbidity was one of the other factors in the women's intention to receive cervical cancer screening. Women with comorbidities had more intention to receive cervical cancer screening as compared to women without comorbidities. This might be because women with comorbidities had regular follow-ups and a high chance of contacting a healthcare provider. This leads to exposure to counseling and awareness about cervical cancer and its screening. Nowadays, there is a recommendation to screen for cervical cancer in the chronic outpatient department for each woman with comorbidities (MOH, 2021). This is contrary to a systematic review and meta-analysis study conducted in the USA that found that women with comorbidities were less likely to practice cervical cancer screening (Diaz et al., 2017).

This study revealed that socio-demographic factors and knowledge did not predict women's intentions to screen. This might be due to the mediating effect of the theory of planned behavior's primary constructs (attitude, subjective norm, and PBC). The theory of planned behaviors suggests that "socio-demographic factors, the nature of particular behaviors, and situational variables can affect intention only if they influence the attitude and normative components" (Ajzen, 2002).

6.1. Strengths and Limitations of this study

This study identified different factors associated with intention to screen for cervical cancer among those taking ART services in the Sidama region and showed that the TPB constructs have a significant impact on intention. The use of mixed quantitative and qualitative data makes this study stronger and contributes to evidence-based practice and the study was done in a multi-center or at the regional level. On the other hand, social desirability bias cannot be ruled out, as some respondents may give a response positively, but as much as possible, enumerators explain to study participants to provide genuine information. Additionally, it did not measure actual behavior to be predicted based on the TPB constructs, which show how much intention could be transformed into actual behaviors.

7. CONCLUSION AND RECOMMENDATION

7.1. Conclusion

In this study, the intention to receive cervical cancer screening was 72.5%. The theory of planned behavior constructs a high variance in intention to receive cervical cancer screening. We found that the intention to be screened for cervical cancer was affected by attitude, subjective norm, PBC, past screening experience, and comorbidities. Attitude was the strongest predictor of intention to screen for cervical cancer. Women perceived that a negative attitude towards screening, people's influence, and the women's lack of confidence in screening were major barriers to their intention to receive cervical cancer screening. This calls for the need to improve women's attitudes by involving influential people and raising awareness in the community about disease and screening services through health professionals and influential people. Moreover, behavioral change communication focusing on the constructs of the theory of planned behavior is important.

7.2. Recommendation

The study identifies predictors of intention to receive screening, which can improve to increase cervical cancer screening. Attitude, subjective norm, and PBC were determinants of intention with high variance; therefore,

- ✓ The Sidama Regional Health Bureau should give high attention to intervention programs designed to improve screening for cervical cancer.
- ✓ Health institutions should focus on disseminating information and creating awareness among women and influential people about cervical cancer risks and screening. Moreover, promote regular screenings through social media or mainstream media like radio and TV.
- ✓ For the researcher, further research was recommended using a prospective cohort study design to see how much intention is transformed into cervical cancer screening behavior to overcome the limitations of the study.

REFERENCES

ABAMECHA, F., TENA, A. & KIROS, G. 2019. Psychographic predictors of intention to use cervical cancer screening services among women attending maternal and child health services in Southern Ethiopia: the theory of planned behavior (TPB) perspective. *BMC public health,* 19**,** 1-9.

AIMAGAMBETOVA, G., CHAN, C. K., UKYBASSOVA, T., IMANKULOVA, B., BALYKOV, A., KONGRTAY, K. & AZIZAN, A. 2021. Cervical cancer screening and prevention in Kazakhstan and Central Asia. *Journal of Medical Screening,* 28**,** 48-50.

AJZEN, I. 1991. The theory of planned behavior. *Organizational behavior and human decision processes,* 50**,** 179-211.

AJZEN, I. 2002. Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior 1. *Journal of applied social psychology,* 32**,** 665-683.

AJZEN, I. 2006. Constructing a theory of planned behavior questionnaire. Amherst, MA.

ALEMNEW, W., DEBALKIE, G. & AZALE, T. 2020. Intention to Screen for Cervical Cancer Among Child Bearing Age Women in Bahir Dar City, North-West Ethiopia: Using Theory of Planned Behavior. *Int J Womens Health,* 12**,** 1215-1222.

ARBYN, M., WEIDERPASS, E., BRUNI, L., DE SANJOSÉ, S., SARAIYA, M., FERLAY, J. & BRAY, F. 2020. Estimates of incidence and mortality of cervical cancer in 2018: a worldwide analysis. *The Lancet Global Health,* 8**,** e191-e203.

ASARE, M., LANNING, B. A., MONTEALEGRE, J. R., AKOWUAH, E., ADUNLIN, G. & ROSE, T. 2022. Determinants of Low-Income Women's Participation in Self-Collected Samples for Cervical Cancer Detection: Application of the Theory of Planned Behavior. *Community Health Equity Research & Policy***,** 0272684X221090060.

ASSEFA, A. A., ASTAWESEGN, F. H. & ESHETU, B. 2019. Cervical cancer screening service utilization and associated factors among HIV positive women attending adult ART clinic in public health facilities, Hawassa town, Ethiopia: a cross-sectional study. *BMC health services research,* 19**,** 1-11.

BAI, Y., LIU, Q., CHEN, X., GAO, Y., GONG, H., TAN, X., ZHANG, M., TUO, J., ZHANG, Y. & XIANG, Q. 2018. Protection motivation theory in predicting intention to receive cervical cancer screening in rural Chinese women. *Psycho-oncology,* 27**,** 442-449.

BARNES, A., BETTS, A. C., BORTON, E. K., SANDERS, J. M., PRUITT, S. L., WERNER, C., ANDRES, B., CAROLEE, D., BALASUBRAMANIAN, B. A. & INRIG, S. J. 2018. Cervical cancer screening among HIV infected women in an urban, US safety-net healthcare system. *AIDS (London, England),* 32**,** 1861.

BEDELL, S. L., GOLDSTEIN, L. S., GOLDSTEIN, A. R. & GOLDSTEIN, A. T. 2020. Cervical cancer screening: past, present, and future. *Sexual medicine reviews,* 8**,** 28-37.

BOGALE, A. L., TEKLEHAYMANOT, T., HAIDAR ALI, J. & KASSIE, G. M. 2021. Knowledge, attitude, and practice of cervical cancer screening among women infected with HIV in Africa: Systematic review and meta-analysis. *PLoS One,* 16**,** e0249960.

COOPER, C. P., GELB, C. A., RODRIGUEZ, J. & HAWKINS, N. A. 2014. Promoting gynecologic cancer awareness at a critical juncture—Where women and providers meet. *Journal of cancer education,* 29**,** 247-251.

DESSALEGN MEKONNEN, B. 2020. Cervical cancer screening uptake and associated factors among HIV-positive women in Ethiopia: a systematic review and meta-analysis. *Advances in Preventive Medicine,* 2020.

DESTA, A. A., ENDALE, Z. M. & AKLIL, M. B. 2022. Cervical cancer screening utilization and associated factors among women of 30–65 years in Girar Jarsoo district North Shoa, Ethiopia, 2021. *Clinical Epidemiology and Global Health,* 15**,** 101048.

DIAZ, A., KANG, J., MOORE, S. P., BAADE, P., LANGBECKER, D., CONDON, J. R. & VALERY, P. C. 2017. Association between comorbidity and participation in breast and cervical cancer screening: A systematic review and meta-analysis. *Cancer Epidemiol,* 47**,** 7-19.

DSOUZA, J. P., VAN DEN BROUCKE, S., PATTANSHETTY, S. & DHOORE, W. 2021. The application of health behavior theories to promote cervical cancer screening uptake. *Public Health Nurs,* 38**,** 1039-1079.

EBU, N. I. 2018. Socio-demographic characteristics influencing cervical cancer screening intention of HIV-positive women in the central region of Ghana. *Gynecologic oncology research and practice,* 5**,** 1-7.

ESHETU, H. B., SHITU, K. & HANDEBO, S. 2022. Predictors of intention to receive cervical cancer screening among commercial sex workers in Gondar city, northwest Ethiopia: application of the theory of planned behavior. *BMC Women's Health,* 22**,** 462.

FIELDEN, N. & HOLCH, P. 2022. Exploring the Influence of Social Media Influencers on Intention to Attend Cervical Screening in the UK: Utilising the Theory of Planned Behaviour. *Cancer Control,* 29**,** 10732748221079480.

FOCAL, S. A. 2023. prevalence of HIV and it's service in Sidama region Hawassa.

GEBREKIRSTOS, L. G., GEBREMEDHIN, M. H., TAFESSE, T. T., TURA, T. S., GELESO, M. G. & WUBE, T. B. 2022. Determinants of Cervical Cancer Screening Service Utilization Among HIV-Positive Women Aged 25 Years and Above Attending Adult ART Clinics in Southern Tigray, Ethiopia. *Cancer Control,* 29**,** 10732748221126944.

GEBRIE, A. 2022. Disease progression role as well as the diagnostic and prognostic value of microRNA-21 in patients with cervical cancer: A systematic review and meta-analysis. *Plos one,* 17**,** e0268480.

GETAHUN, T., KABA, M. & DERSEH, B. T. 2020. Intention to Screen for Cervical Cancer in Debre Berhan Town, Amhara Regional State, Ethiopia: Application of Theory of Planned Behavior. *J Cancer Epidemiol,* 2020**,** 3024578.

HAILU, H. E., MONDUL, A. M., ROZEK, L. S. & GELETA, T. 2020. Descriptive Epidemiology of breast and gynecological cancers among patients attending Saint Paul's Hospital Millennium Medical College, Ethiopia. *PloS one,* 15**,** e0230625.

HULL, R., MBELE, M., MAKHAFOLA, T., HICKS, C., WANG, S. M., REIS, R. M., MEHROTRA, R., MKHIZE-KWITSHANA, Z., KIBIKI, G. & BATES, D. O. 2020. Cervical cancer in low and middle-income countries. *Oncology letters,* 20**,** 2058-2074.

IBRAHIM KHALIL, A., MPUNGA, T., WEI, F., BAUSSANO, I., DE MARTEL, C., BRAY, F., STELZLE, D., DRYDEN-PETERSON, S., JAQUET, A. & HORNER, M. J. 2022. The age-specific burden of cervical cancer associated with HIV: a global analysis with a focus on sub-Saharan Africa. *International Journal of Cancer,* 150**,** 761-772.

JAMESON, J. L., KASPER, D. L., FAUCI, A. S., HAUSER, S. L., LONGO, D. L. & LOSCALZO, J. 2018. *Harrison's principles of internal medicine*, McGraw-hill education.

KASRAEIAN, M., HESSAMI, K., VAFAEI, H., ASADI, N., FOROUGHINIA, L., ROOZMEH, S. & BAZRFASHAN, K. 2020. Patients' self-reported factors influencing cervical cancer screening uptake among HIV-positive women in low-and middle-income countries: An integrative review. *Gynecologic Oncology Reports,* 33**,** 100596.

KIM, H. Y. 2013. Statistical notes for clinical researchers: assessing normal distribution (2) using skewness and kurtosis. *Restor Dent Endod,* 38**,** 52-4.

LE, D. & HOLT, C. L. 2018. CervixCheck: A Spiritually-Based Text Messaging Intervention to Promote Cervical Cancer Awareness and Pap Test Screening Intention among African-American Women. *J Health Commun,* 23**,** 842-853.

LIN, S., CHEN, W. T., GU, C., CHENG, H. L., WANG, H. & TANG, S. 2022. Knowledge, perception of HIV symptom severity and cervical cancer screening behavior among women living with HIV in China. *European Journal of Cancer Care,* 31**,** e13542.

MARCUS, J. L., LEYDEN, W., ALEXEEFF, S., ANDERSON, A., HECHTER, R., HU, H., LAM, J., TOWNER, W., YUAN, Q. & HORBERG, M. 2020. Comparison of overall and comorbidity-free life expectancy between insured adults with and without HIV infection, 2000-2016. JAMA Netw Open. 2020; 3 (6): e207954.

MATENGE, T. G. & MASH, B. 2018. Barriers to accessing cervical cancer screening among HIV positive women in Kgatleng district, Botswana: a qualitative study. *PLoS One,* 13**,** e0205425.

MITCHELL, S. M., PEDERSEN, H. N., ENG STIME, E., SEKIKUBO, M., MOSES, E., MWESIGWA, D., BIRYABAREMA, C., CHRISTILAW, J., BYAMUGISHA, J. K. & MONEY, D. M. 2017. Self-collection based HPV testing for cervical cancer screening among women living with HIV in Uganda: a descriptive analysis of knowledge, intentions to screen and factors associated with HPV positivity. *BMC Women's Health,* 17**,** 1-10.

MOH 2021. Guideline for Cervical Cancer Prevention and Control in Ethiopia. *Federal Democratic Republic of Ethiopia Ministry of Health***,** 62.

NEW-AARON, M., MEZA, J. L., GOEDERT, M. H., KIBUSI, S. M., MKHOI, M. L., MAYENGO, C. D., CHARLES, J., SHABANA, S., MUSIL, K. M. & CHENEY, A. 2020. Cervical cancer screening among women receiving antiretroviral therapy in a resource-limited environment. *Asian Pacific Journal of Cancer Prevention: APJCP,* 21**,** 2035.

ROHNER, E., BÜTIKOFER, L., SCHMIDLIN, K., SENGAYI, M., MASKEW, M., GIDDY, J., TAGHAVI, K., MOORE, R. D., GOEDERT, J. J. & GILL, M. J. 2020. Cervical cancer

risk in women living with HIV across four continents: a multicohort study. *International journal of cancer,* 146**,** 601-609.

RONCANCIO, A. M., WARD, K. K., SANCHEZ, I. A., CANO, M. A., BYRD, T. L., VERNON, S. W., FERNANDEZ-ESQUER, M. E. & FERNANDEZ, M. E. 2015. Using the Theory of Planned Behavior to Understand Cervical Cancer Screening Among Latinas. *Health Educ Behav,* 42**,** 621-6.

RUDDIES, F., GIZAW, M., TEKA, B., THIES, S., WIENKE, A., KAUFMANN, A. M., ABEBE, T., ADDISSIE, A. & KANTELHARDT, E. J. 2020. Cervical cancer screening in rural Ethiopia: a cross-sectional knowledge, attitude, and practice study. *BMC cancer,* 20**,** 1-10.

SAWAYA, G. F., SMITH-MCCUNE, K. & KUPPERMANN, M. 2019. Cervical cancer screening: more choices in 2019. *Jama,* 321**,** 2018-2019.

SOLOMON, K., TAMIRE, M. & KABA, M. 2019. Predictors of cervical cancer screening practice among HIV positive women attending adult anti-retroviral treatment clinics in Bishoftu town, Ethiopia: the application of a health belief model. *BMC cancer,* 19**,** 1-11.

STELZLE, D., TANAKA, L. F., LEE, K. K., KHALIL, A. I., BAUSSANO, I., SHAH, A. S., MCALLISTER, D. A., GOTTLIEB, S. L., KLUG, S. J. & WINKLER, A. S. 2021. Estimates of the global burden of cervical cancer associated with HIV. *The Lancet Global Health,* 9**,** e161-e169.

SUNG, H., FERLAY, J., SIEGEL, R. L., LAVERSANNE, M., SOERJOMATARAM, I., JEMAL, A. & BRAY, F. 2021. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians,* 71**,** 209-249.

TISLER, A., OJAVEE, S. E., VEERUS, P., SOODLA, P. & UUSKÜLA, A. 2021. Cervical cancer screening patterns among HIV-positive women in Estonia: a population-based retrospective cohort study. *BMC cancer,* 21**,** 1-9.

TORODE, J., KITHAKA, B., CHOWDHURY, R., SIMELELA, N., CRUZ, J. L. & TSU, V. D. 2021. National action towards a world free of cervical cancer for all women. *Preventive medicine,* 144**,** 106313.

TRANMER, M. & ELLIOT, M. 2008. Multiple linear regression. *The Cathie Marsh Centre for Census and Survey Research (CCSR),* 5**,** 1-5.

USMAN, I. M., CHAMA, S. N., AIGBOGUN, E. O., KABANYORO, A., KASOZI, K. I., USMAN, C. O., DIAZ, M. E. F., NDYAMUHAKYI, E., ONONGHA, C. & OCHIENG, J. J. 2022. Knowledge, Attitude, and Practice Toward Cervical Cancer Screening Among Female University Students in Ishaka Western Uganda.

VAN SCHALKWYK, C., MOODLEY, J., WELTE, A. & JOHNSON, L. F. 2021. Modeling the impact of prevention strategies on cervical cancer incidence in South Africa. *International Journal of Cancer,* 149**,** 1564-1575.

WHO 2021. WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention: web annex A: syntheses of evidence.

WILDING, S., PRUDENZI, A., CONNER, M. & O'CONNOR, D. B. 2022. Do reasoned action approach variables mediate relationships between demographics and cervical cancer screening intentions or behavior? An online study of women from the UK. *Social Science & Medicine,* 313**,** 115354.

WOLLANCHO, W., AMDISSA, D., BAMBORO, S., WASIHUN, Y., TAREKE, K. G. & GIZAW, A. T. 2020. Determining behavioral intention and its predictors towards cervical cancer screening among women in Gomma district, Jimma, Ethiopia: Application of the theory of planned behavior. *PLoS One,* 15**,** e0238472.

ZHANG, J., SHA, Z., GU, Y., Li, Y., YANG, Q., ZHU, Y. & HE, Y. 2019. Predicting behavioral intentions related to cervical cancer screening using a three-level model for the TPB and SCT in Nanjing, China. *International journal of environmental research and public health,* 16**,** 3575.

ANNEX

Annex I: Information Sheet

Hawassa University, faculty of the Health Science School of Nursing

Study on intention and predictors towards cervical cancer screening among women attending ART services in the Sidama region, Ethiopia Using the theory of planned behavior, 2023

Good morning/afternoon! My name is... and I am going to interview with you on behalf of **Ms. Deribe Adisu,** a postgraduate student at Hawassa University, institute of Health Faculty of the School of Nursing. I would like to ask questions related to cervical cancer screening service utilization intention and its predictors.

This study is designed to investigate what women know about cervical cancer and cervical cancer screening. It would also like to determine women's attitudes, subjective norms, and perceived behavioral control toward the intention to use cervical cancer screening.

The study will summarize your thoughts on the issues raised, and the intention is to use the data to come up with a better plan for how to provide this service for women.

Honesty is needed to make this information useful in identifying the strengths and weaknesses of the current system and addressing them.

The interview may take between 20 and 30 minutes, and you are requested to answer the question as honestly as you can. I assure you that whatever information you provide will only be used for this research and will not be made available to anyone, and your name is not mentioned in the form.

I appreciate you very much for your willingness and support to respond to the interview. I also assure you that the interview process will not bring any harm to you or your family. Your participation is voluntary. If you choose not to answer a particular question, that is your right. You are also permitted to withdraw at any time from the study when you feel uncomfortable with it.

Therefore, to participate in this study, you must:

- Agree
- Not Agree

Annex II: Consent Form for Participants

Address of the principal investigator: Deribe Adisu Ararso

Cell phone: +251 928733047; email: **dereahn47@gmail.com**

In signing this document, I am giving my consent to participate in the study titled Intention and predictors towards cervical cancer screening among attending ART services in the Sidama region, using the theory of planned behavior, 2023.

I have been informed about the purpose of the study. I understand that participation in this study is entirely voluntary. I have been told that my answers to the questions will not be given to anyone else, and no reports of this study will ever identify me in any way. I have also been informed that my participation, non-participation, or refusal to answer questions will not affect me. I understood that participation in this study does not involve risks.

I understood that Deribe Adisu is the contact person if I have questions about the study or my rights as a study participant.

Respondent's signature _____

If not, skip to the next participant.

Date of interview: _____ Time started: _____ Time finished: _____

Interviewer Name: _____ Signature: _____ Date: _____

Supervisor's name

Results of the interview questionnaire

1. Completed
2. Refused
3. Partially completed

Annex III: Questionnaire; English Version

This questionnaire is designed to assess intentions and predictors toward cervical cancer screening among women attending ART clinics in the Sidama Region

Code _____ Date of filling /____/____/_____ DD/MM/YY

Part 1: Socio-demographic characteristics

1.1	Age	
1.2	Marital status	1. single 2. Married 3. widowed 4. Separated
1.3	Occupation	1. other 2. 2 government employees 2. Self-employee 3. Housewife
1.4	Monthly income	
1.5	Educational status	1. no formal education 2. primary education 3. Secondary and preparatory 4. Diploma 5. Degree and above
1.6	No. of children	

Part 2: Knowledge related to cervical cancer and screening

2.1	Have you heard about cervical cancer?	1. Yes 2. No
2.2	Where did you first hear about cervical cancer?	1. From Radio or TV 2. From health workers 3. From Schools 4. From Family, friends, and neighbors

		5. From leader
2.3	What are the symptoms of cervical cancer?	1. Vaginal bleeding 2. Vaginal foul smelling 3. Postcoital bleeding 4. Pain during sex 5. I do not know
2. 4	What are the risk factors for cervical cancer?	1. HIV positive women 2. Having multiple sexual partners 3. Acquiring HPV 4. Sex at an early age less than 15 years 5. Cigarette smoking 6. Exposed to sexually transmitted infection 7. Using birth control pills for a long time 8. I do not know
2.5	How can a person prevent getting cancer of the cervix?	1. Being faithful to sexual partners 2. Avoid sex at an early age <15 years 3. No smoking 4. Through HPV vaccine 5. Regular screening 6. Safe sex 7. I do not know
2.6	Can cervical cancer of the cervix be cured in its earliest stages?	1. Yes, 2. No
2.7	Are you aware that, there is screening procedures to detect premalignant cervical lesion?	1. Yes, 2. No
2.8	Where did you hear first about cervical cancer screening	1. Radio/TV 2. Health worker 3. Schools 4. From family, friends, and neighbors 5. From leaders

2.9	For HIV-positive women: who should be screened	1. All exposed to sexual intercourse 2. All reproductive-age women
2.10	For HIV positive women: How frequently dose women received cervical cancer screening	1. Every 5 years 2. Every 3 years 3. Every 2 years 4. In a lifetime's time

Part 3: Past screening experience and family history

3.1	Have you ever been screened for CC before?	1. Yes, 2. No
3.2	Is there anyone in your family who has cervical cancer?	1. Yes, 2. No

Part 4: Clinical factors

4.1	WHO stage of HIV/AIDS	
4.2	how long on ART (year)	
4.3	Comorbidities	**1. Yes; 2. No**
4.4	Which is a chronic disease?	1. chronic liver disease 2. chronic kidney disease 3. chronic lung disease 4. diabetes, 5. cancer, and 6. cardiovascular disease

Part 5: Intention to Cervical Cancer Screening

4,1	How likely is it that you will need CCS services in the next 3 months?	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
4.2	In the coming 3 months, how likely is it that you will be screened for CC?	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
4.3	In the next 3 months, how likely is it that you will look for and request CCS services?	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
4.4	How likely is it that you will think to screen for cervical cancer in the next 3 months?	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely

Part 6: Direct attitude measures

6.1. You use cervical cancer screening for the next three months.

Bad	1	2	3	4	5	Good
Unpleasant	1	2	3	4	4	Pleasant

Part 7: Indirect attitude measures

A = behavioral beliefs, and B = evaluation of outcome.

7.1A	Screening for cervical cancer will help you get early treatment and prevent deaths related to cervical cancer.	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree
7.1B	For you to get early treatment and prevent yourself from dying from cervical cancer	1. Strongly disagree 2. Disagree 3. Neutral 4. Agree 5. Strongly agree

Part 8: Direct subjective norms

s.no	Item	**SD**	**D**	**N**	**A**	**SA**
8.1	Most people who are important to you will approve of your using CCS services in the next 3 months.					
8.2	Most people who are important to you think that you should use CCS services in the next 3 months.					

Part 9: indirect subjective Norms measurement

A = normative beliefs B = motivation to comply

9.1A	Your health care provider approves your cervical precancer screening	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
9.1B	When it comes to matters of health, I want to do what my caregiver should do	1. Not very much 2. Not much 3. Neutral 4. Much

		5. Very much
9.2A	Most women and leaders in public forums approve of your cervical cancer screening	1. Very likely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
9.2B	Doing what most women and leaders' approval of cervical pre-cancer screening is important to you	1. Not very much 2. Not much 3. Neutral 4. Much 5. Very much

Part 10: direct perceived behavioral control measurement

10.1. You are confident that you can use CCS services in the next three months.

False 1 2 3 4 5 True

10.2. You are using CCS services for the next three months, according to me.

Disagree 1 2 3 4 5 Agree

Part 11: Indirect Perceived Behavioral Control Measurement

A = control belief B = perceived power

11. A	You expect that you will have CCS service in the next three months.	1. Very unlikely 2. Unlikely 3. Neutral 4. Likely 5. Very likely
11. B	Having CCS would enable you for the next three months.	1. strongly Disagree 2. Disagree 3. Neutral 4. Agree 5. strongly agree

Questions for in-depth interview study

1. What do you think as the advantages of your screening for cervical cancer for the next three months and how?
2. What do you think as the disadvantages of your screening for cervical cancer for the next three months and how?
3. Please list the individuals or groups who would approve of or think you should screen for cervical cancer for the next three months what do they say?
4. Please list the individuals or groups who would disapprove or think you should not screen for cervical cancer for the next three months and what do they say?
5. Please list any factors or circumstances that would make it easy or enable you to screen for cervical cancer for the next three months and how.
6. Please list any factors or circumstances that would make it difficult or prevent you from being screened for cervical cancer for the next three months and how.

Annex 50: Amharic version questionnaire

ለጥናትተሳታፊዎችስለጥናቱየቀረበመረጃ

ሰሃዋሳዩኒቨርሲቲ፣የነርሲንግሳይንስትምህርትቤትፋክልቲ.

በ ART አገልግሎቶች sidama ክልል፣ ኢትዮጵያውስጥበሚሳተፉሴቶችመካከልየማህጸንበርካንሰርምርመራላይጥናትእናትንበያ.የታቀደባህሪ ንጽንሰ-ሀሳብበመጠቀም፣ 2023

እንደምንአደርክ / ሽ/ስሜ ..... እናምበሃዋሳዩኒቨርሲቲየድህረምረቃተማሪየሆነውንሚስተርደርቢአድሱበመወከልከእርስዎጋርቃለም ልልስአደርጋለሁ, የነርሲንግትምህርትቤትየጤናፋክልቲተቋም. ከህክምናካንሰርምርመራአገልግሎትአጠቃቀምዓላማእናትንበያዎቹጋርየተዛመዱጥያቄዎችንመጠየቅ እፈልጋለሁ.

ይህጥናትሴቶችስለየማኅጸንበርካንሰርእናስለየማኅጸንምርመራምንእንደሚያውቁለመመርመርታስቦየ ተሰራነው. እንዲሁምየማኅጸንበርምርመራንለመጠቀምየታሰበውንእናየሴቶችአመለካከትን፣የርዕሰ-ጉዳይደንቡንእናየተገነዘበውንየባህሪቁጥጥርመወሰንይፈልጋል.

ጥናቱበተነሱትጉዳዮችላይሀሳቦችዎንጠቅለልአድርጎያቀርባልእናምዓላማውይህንንአገልግሎትለሴቶ ችእንዴትመስጠትእንደሚቻልየተሻለዕቅድለማውጣትእናአገልግሎትለመስጠትነው.

የአሁኑንስርዓትጥንካሬ / ድክመትለመለየትእናእነሱንለመፍታትይህንንመረጃጠቃሚለማድረግየርሶሐቀኝነትያስፈልጋል.

በቃለመጠይቁእርስዎበተቻለዎትመጠንበሐቀኝነትእንዲመልሱከተጠየቁከ 20 እስከ 30 ደቂቃዎችሊወስድይችላል.
እርስዎየሚሰጡትመረጃሁሉለዚህምርምርዓላማብቻጥቅምላይየሚውልእናለማንምየማይገኝእናስም ህበቅጹውስጥእንደማይጠቀስአረጋግጣለሁ.

በቃለመጠይቁምላሽለመስጠትፈቃደኛነትዎእናድጋፍዎበጣምአደንቃለሁ.
የቃለመጠይቁሂደትለእርስዎእናለቤተሰብዎምንምጉዳትእንደማያመጣእርግጠኛነኝ.
የእርስዎተሳትፎበፈቃደኝነትነው. ለአንድየተወሰነጥያቄላለመመለስከመረጡያየእርስዎመብትነው.
እርስዎምምኞትየማይሰማዎትሆኖሲሰማዎትከጥናቱበማንኛውንምጊዜእንዲወጡተፈቅዶልዎታል

ስለዚህበዚህጥናትውስጥለመሳተፍ-:

•እስማማለሁ

•አልስማማም

የአጥኝዉአድራሻ:

ደርቤአድሱአራርሶ

የሞባይልስልክ: 251 92873047, ኢ-ሜል dereahn47@gmail.com

የተሳታፊዉየፍቃደኝነትቅጽ

ይህንንሰነድበመፈረም፣በሲዳማክልልዉስጥየ ART አገልግሎቶችንበመከታተልላይየማጎጸንበርካንሰርቅድመምርመራለማካሄድበተደረገውጥናትላይለመ ሳተፍፈቃደኛነኝ,

ስለጥናቱዓላማተነግሮኛል. በዚህጥናትውስጥመሳተፍሙሉበሙሉበፈቃደኝነትመሆኑንተረድቻለሁ. ለጥያቄዎቹየሰጠሁትመልስለሌላለማንምእንደማይሰጥተነግሮኛልእናምየዚህጥናትዘገባዎችበምንም መንገድእኔንአይለዩኝም. የእኔተሳትፎወይምተሳትፎ-አልባነትወይምለጥያቄዎችመልስለመስጠትፈቃደኛአለመሆኔበእኔላይምንምተጽዕኖእንደማይኖረው ተነግሮኛል. በዚህጥናትውስጥመሳተፍአደጋዎችንእንደማያካትትተረድቻለሁ.

ስለጥናቱወይምስለእኔእንደየጥናትተሳታፊጥያቄካሰብኩደርበአዲሱየማነጋግረዉሰውመሆኑንተረድቻ ለሁ.

የመላሽሰጪፊርማ_____

የቃለመጠይቅቀን: _____ የተጀመረበትጊዜ _____ የተጠናቀቀበትጊዜ _____

የቃለ-መጠይቅአቅራቢዉስም_____ቀን _____ ፊርማ_____

የተቆጣጣሪውስም _____ ቀን_____ ፊርማ _____

የቃለመጠይቅውጤቶች

1.ተጠናቅቋል

2.በከፊልተጠናቅቋል

3.ውድቅተደርጓል

መጠይቅ

ይህመጠይቅበሲዳማክልልውስጥበ ART ክሊኒክበሚሳተፉሴቶችመካከልየማህጸንበርካንሰርቅድመምርመራለማድረግዓላማንእናትንበያዎችንለ መገምገምየተቀየሰነው

ኮድ _____ የሚሞላበትቀን / _____ቀን / ወር / ዓ.ም

ክፍል 1-ማህበራዊ-ስነ-ሕዝብባህሪዎች

1.1	ዕድሜ	_____
1.2	የጋብቻሁኔታ	1. ያላገባ 2. ያገባ 3. የሞተባት4. ተለያይቷል
1.3	የሥራሁኔታ	1. የመንግስትሠራተኛ2. የግልስራ3. የቤትእመቤት
1.4	ወርሃዊገቢ	----------
1.5	የትምህርትሁኔታ	1. ያልተማረ 2. የመጀመሪያደረጃ 3. ሁለተኛደረጃ 4. ዲፕሎማ 5. ዲግሪእናከዛበላይ.
1.6	የልጆችቁጥር	_____

ክፍል 2:ካንሰርህክምናእናምርመራጋርየተዛመደእውቀት

2.1	ከዚህበፊትስለማኅጸንበርካንሰርሰምተዉያዉቃሉ?	
2.2	ስለማኅጸንበርካንሰርለመጀመሪያጊዜየሰሙትየትነበር?	1 2 3

		4 5
2.3	የማኅጸንበርካንሰርምልክቶችምንድንናቸው?	1 2 3 4 5
2. 4	ለማኅጸንበርካንሰርየሚያጋልጡምክንያቶችምንድናቸው?	1 በ 2 3 4 ዓ 5 6 7 8
2.5	አንድሰውየማኅጸንበርካንሰርእንዳይከሰትእንዴትይከላከላል?	1 2 ዓ 3 4 5 6 7
2.6	የማኅጸንበርካንሰርበመጀመሪያዎቹደረጃዎችሊድንይችላል?	
2.7	የማኅጸንበርካንሰርከፍተኛደረጃከመድረሱበፊትየማጣሪያምርመራወችመኖራቸውንያውቃሉ?	
2.8	ስለየማኅጸንበርካንሰርምርመራበመጀመሪያጊዜከየትሰሙ?	1 2 3 4 5
2.9	ኤችአይ ቪ ቫይረስበደማቸውውስጥያለባቸውየማኅጸንበርካንሰርቅድመምርመራማንመመርመርአለበትብለውያስባሉ?	1 2
2.10	ኤችአይ ቪ ቫይረስበደማቸውውስጥያለባቸውሴቶችየማኅጸንበርካንሰርምርመራበዬስንትጊዜውማድረግአለባቸው?	1 2 3 4

ክፍል 3 ያለፈውተሞክሮእናየቤተሰብታሪክ

3.1	ከዚህበፊትየማኅጸንበርካንሰርምርመራአድርገውያውቃሉ?	1. አዎ	2. አላውቅም
3.2	ከቤተሰብዎአባላትውስጥየማኅጸንበርካንሰርያለበትሰውአለ?	1. አዎ	2. የለም

ክፍል 4 ክሊኒካዊምክንያቶች

4.1	WHO የኤችአይቪ / ኤድስደረጃ	
4.2	በ ART (ዓመት) ላይለምንያህልጊዜቆዩ?	
4.3	ሌሎችተጉዋዳኝበሽታዎችአለብዎት?	1. አዎ 2. አይ
4.4	ካለብዎትየትኛው	1. ሥርየሰደደየጉበትበሽታ 2. ሥርየሰደደየኩላሊትበሽታ 3. ሥርየሰደደየሳንባበሽታ 4. የስኳርበሽታ, 5. ካንሰር፣ 6. የልብናየደምቧንቧበሽታ.

ክፍል 5: የማኅጸንበርካንሰርምርመራየማድረግዓላማ

5.1	በሚቀጥሉት 3 ወራቶችውስጥየማህፀንበርካንሰርቅድመምርመራለማድረግመፈለግዎምንያህልሊሆንይቻላል?
5.2	በሚቀጥሉት 3 ወራቶችውስጥየማህፀንበርካንሰርቅድመምርመራማድረግምንያህልሊሆንይችላል

5.3	በሚቀጥሉት ወራቶችውስጥየማህፀንበርካንሰርቅድመምርመራለማድረግመጠየቅእናህክምናስፍራንመጎብኘትምንያህልሊሆን
5.4	በሚቀጥሉት 3 ወራቶችውስጥየማህፀንበርካንሰርቅድመምርመራለማድረግያለዎትፍላጎትምንያህልሊሆንይች

ክፍል 6:ስለማህፀንበርካንሰርቅድመምርመራበተመለከተቀጥተኛአመለካከትየሚለካቃለመጠይቅ.

1.1 ለሚቀጥሉትሶስትወራትየማህፀንበርካንሰርቅድመምርመራመጠቀምዎንእንዴትያያሉ?

መጥፎ በጠምደስየማይ ል	1 1	2 2	3 3	4 4	5 4	ጥሩ አስደሳች

ክፍል 7:ስለማህፀንጫፍካንሰርቅድመምርመራበተመለከተበተዘዋዋሪአመለካከትየሚለካቃለመጠይቅ

A=የባህሪእምነቶች **B = የውጤቶችግምገማ**

7.1A	የማኅጸንበርካንሰርቅድመምርመራማድረግቀደምብሎህክምናእንዲያገኙእናከካንሰርጋርየተዛመደሞትንለመከላ

7.1B	ቀደምብለውህክምናማግኘትከማኅጸንበርካንሰርጋርበተያያዘሞትንይቀንሳል

ክፍል 8 ቀጥተኛየሆነግለሰባዊየተለመዱደንቦች

ቁ.	የጥያቄአይነት	በ.አ	አ	ድ.አ	እ
8.1	ለእርስዎአስፈላጊየሆኑብዙሰዎችበ 3 ወራትውስጥየማኅጸንበርካንሰርምርመራአገልግሎቶችንእንዲጠቀሙያደርጋሉ				
8.2	ለእርስዎአስፈላጊየሆኑብዙሰዎችበሚቀጥሉት 3 ወራትውስጥየማኅጸንበርካንሰርምርመራአገልግሎቶችንመጠቀምአለብዎትብለውያስባሉ.				

ክፍል6: ቀጥተኛያልሆነግለሰባዊየተለመዱደንቦችመለኪያ

A= መደበኛእምነቶች B =ለማክበርተነሳሽነት

9.1A	የጤናባለሙያዎችየማኅጸንበርካንሰርቅድመ-ምርመራዎንያፀድቃል/ ያበረታታሉ	

		በ
9.1B	ወደጤናተቁማትስመጣ፣እኔማድረግያለብኝንየጤናባለሙያችንትዕዛዝመተግበርእፈልጋለሁ	
9.2A	በሕዝብመድረኮችውስጥያሉብዙሴቶችእናመሪዎችየማኅጸንበርካንሰርምርመራዎንያፀድቃሉ/ያበረታታሉ	5.
9.2B	ብዙሴቶችእናመሪዎችየማኅጸንቅድመካንሰርምርመራማፅደቃቸውለእርስዎአስፈላጊነውብለውያስባሉ	

ክፍል 10:ቀጥተኛየሆነባህሪውእንዳይፈጠረየሚያደርጉስሜቶች

10.1.በሚቀጥሉትሶስትወራትየማኅጸንበርካንሰርምርመራአገልግሎቶችንመጠቀምእንደሚችሉእርግጠኛነዎት

በጣምሐሰት	1	2	3	4	5	እውነት

10.2.ለሚቀጥሉትሶስትወራትየማኅጸንበርካንሰርምርመራአገልግሎቶችንበመጠቀምዎየራስዎውሳኔነው

አልስማማ	1	2	3	4	5	እስማማለሁ

ክፍል 11: ቀጥተኛያልሆኑባህሪውእንዳይፈጠረያደርጋሉተብለውየሚታሰቡእምነቶች

A=የቁጥጥርእምነት B = የተተገበረኃይል

11.A	በሚቀጥሉትሶስትወራትየማኅጸንበርካንሰርምርመራአገልግሎትይኖረኛልብለውይጠብቃሉ	1. በጣምሊሆ 2. ሊሆን 3. ድምጽ 4. ሊሆ 5. በጣምሊሆን
11.B	የማኅጸንበርካንሰርምርመራማድረግለሚቀጥሉትሶስትወራትያስችዎታል	1.በጣም 2. አልስ 3. ድም 4. እስማ 5. በጣምእ

ቃለ-መጠይቅጥናትጥያቄዎች

1. ለሚቀጥሉትሶስትወራትየቅድመማጎጸንበርካንሰርምርመራዎምንጥቅሞችአሉት?
2. ለሚቀጥሉትሶስትወራትየቅድመማጎጸንበርካንሰርምርመራዎምንጉዳቶችአሉትብለውያስባሉ?
3. ለሚቀጥሉትሶስትወራትየቅድመማጎጸንበርካንሰርምርመራማድረግአለብዎትብለውየሚያምኑትን ግለሰቦችወይምቡድኖችእባክዎንይዘርዝሩ.
4. ለሚቀጥሉትሶስትወራትየቅድመማጎጸንበርካንሰርምርመራማድረግየለብዎትምብለውየሚያስቡት ንግለሰቦችወይምቡድኖችእባክዎንይዘርዝሩ.
5. እባክዎንቀላልየሚያደርጉወይምለሚቀጥሉትሶስትወራትየቅድመማጎጸንበርካንሰርምርመራለማካ ሄድየሚያስችሉዎትንማንኛውንምሁኔታዎችይዘርዝሩ.
6. እባክዎንአስቸጋሪየሚያደርጉወይምለሚቀጥሉትሶስትወራትየቅድመማጎጸንበርካንሰርእንዳይመረ መሩየሚያደርጉትንማንኛውንምሁኔታዎችይዘርዝሩ.

Annex v: Sidamo Afoo version questionnaires

HawassiUniversite, Fayyimmate Institute, neriseteTemirte Rosu Kifile

Sidamu AfiiXa'mo

Su'mi'ya _____ yaamamanno. Xaloosa hawassiUniversite, Fayyimmate Institute, neriseteTemirte Rosu Kifilelayinkidigire(Mastersete) rosaanchoikkinohusidamuqoqowigiddogumulshuxiinxalloloosanninoodaafira tenne xiinxalloraikkitannohedo gamba assanniafameemmo. Xiinxallotebirxichino;

sidamuqoqowigiddonoofayyimatemineADIStagichohoronsiranoamuwianaotootote birxekanserexiinxallayitannote.

Anino amuwumereerinnixa'motekaayyoradoora tenne kaayyobeeqqaanchoikkoottahurahasiissannodawaroqolattaegedeshaqqillunnixa'mireemmohe. Ledenokummiassatebaxeemmoriwoyisu'makkihorontannidiborreessinanni. maciishsharadidandaanno. Tenne xiinxalloranobeeqqaanchoikkattahubaxxeikkinninagiwateqoossokkiagarantinote. Atiqolattadawaro tenne xiinxallogumuloiillishatehattonomotimagiddoafamannoamuwinnaqaaqquullinsakeeredaafirabee qqaanchoikkittaroaddintatashshiyaannonke.

Hanafadandeemmo?

1. **Dee'ni** Galatteuurrisi.
2. **Ee** Hanafi

Kifile 1: manuheshola'anoxamo

1.1	Diro	_____
1.2	Adhamategara	1. Adhaminokiha 2. Adhaminoha 3. Reenoseta

		4. tirtinota
1.3	Looso	1. mangisteteloosо 2. Umisiloso 3. Mini galte
1.4	Aganinuniafiranowomaasha	
1.5	Rosu dera	1. Nabawanaboressadandanokiha 2.umideera (1-8) 3. Layinikidera (9-12) 4. Dipiloma 5. Digireenaaleni
1.6	Me'uqaqulinohe	_____

Kifile 2. Otototecanceredaffiraegenobikanoxamo

2.1	Otoototebirxekanseredaffiramachishiteegenota?	1. Ee 2. Dimachishoomo
2.2	Otoototebirxekanseredaffira mama machishito?	1. Radonetewoyitelevizinete 2. Fayimateogeyewini 3. Rosu mine 4. Mini maniwini, jalatewininasaf 5. Amanotewoyiediretemarichiwi
2.3	Otoototebirxekanseremaalatimatiroafooto?	1. Otoototegidomundedunama 2. Otoototegiddobushufooli no fes 3. Siimuxadosheasisinigedensanin 4. Simu xadoosheasinaniwoyitexi 5. Diafoomo
2. 4	Otoototebirxekansererasayiseanorichimaati?	1. HIV/ADISvirus gido no mayiti 2. Duchumaniledosimuxadosheasi 3. Simu xadosheasinaniwoyitedag 4. 15 diriikikisiimuxadoshehanafa 5. Sigarawiliisha 6. Simu xadosheasinaniwoyitedag 7. Lowoyanailaholanokininehoron 8. Diafoomo

2.5	Otoototekanserehiitoasinegargadhinani?	1. Galitekirahorichishaikka 2. 15 diroikikikinisimuxadosheasa 3. Sigarawilishaagura 4. Kitibabateadha 5. yanayanatemaramarama 6. Tinkaketenisimuxadoosheasa 7. Diafoomo
2.6	Otoototebirxekansereumoniafirohuradanditano?	2. Ee 2. dihurtano
2.7	Otoototebirxekanseremaramaramagidorae'eukinianfanitaafooto?	2. Ee 2. diafoomo
2.8	Otoototebirxekanseremaramarama nota umo maa machishito	1. Radonetewoyitelevizinete 2. Fayimateogeyewini 3. Rosu mine 4. Mini maniwini, jalatewininasaf 5. Amanotewoyiediretemarichiwi
2.9	HIV viresegido no mayiti: Ayeetimaramaramahasisinohu?	1. Wo'munkusimuxadoshehanafi 2. Wo'munkuilatedirigido nori
2.10	HIV viresegido no mayitimamotemamotemaramarama nose?	1. Ontudirini mite hige 2. Sasu dirini mite hige 3. Lamu dirini mite hige 4. Mite higechaalahedhanodirigid

Kifile 3: Alibaninorenafixuledoxadanoxageafateshiqinoxa'mo

3.1	Konni alibaniotototebirxekanseremaramaranteegeenooto?	1. Ee 2. diegeenomo
3.2	Mini maninafixugidootototebirxekanserenohu no?	1. Ee 2. Dino

Kifile 4: clinikaletetadhanoxamola'nohuni

4.1	WHO stage of HIV/ ADIS	

4.2	ART Xagichoadhitanimageshakeshito (diro)?	
4.3	Woluledoxissonoheni?	1. Ee 2. dino
4.4	Hiti ledoxisonohe?	1. Keshitinoafaletexiso 2. Keshitinomuluxiso 3. Keshitinoshombuxiso 4. Sukaretexiso 5. kansere, and **6.** keshitinowodanuxiso.

Kifile5: otoototebirxekanseremaramaramatedegnela'anoxa'mo

4,1	dagano 3 aganagidoOtototebirxekanseremaramaramageshigeshahasirata?	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano 5. lowogeshaikano
4.2	dagano 3 aganagidoOtototebirxekanseremageshigeshamaramaraqexabata?	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano 5. lowogeshaikano
4.3	dagano 3 aganagedoOtototebirxekanseremaramaramageshigeshaxamata/harata?	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano 5. lowogeshaikano
4.4	dagano 3 aganagedoOtototekanceremaramaratemageshegeshahedata.	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano

		5. lowogeshaikano

Kifile 6: qaxitaikitinola'ooshuxawisanoxa'mo

6.1. dagano 3 aganagidootototecanceremiremarahasira?

Busha	1	2	3	4	5	Dancha
dihagirisisanoe	1	2	3	4	4	hagirsisanoe

Kifile7: qaxitaikitinokila'ooshuxa'mo

A = la'ooshuamanobika B = xibuabanorichoafa

7.1A	Otoototekanseremaramaramamuleniowanteafiratanakanseretexadinoreyoteninigatatagedeka'litanohe	
7.1B	Muleniowanteafiraototootekanserenixadinoreeyonigatisano?	

Kifile8: qaxitamesibudebikitanoxa'mo

Kiro	Xa'mo	**LSD**	**SD**	**HD**	**SY**	**LSY**
8.1	Aaterahasisanolowo mana dano 3 aganagidootototebirxekanseremaramaraasiratagedebaxano					
8.2	Aaterahasisanolowo mana dano 3					

	aganagidootototebirxekanseremaramaraasiratagedejawachishanohe					

kifile 9: indirect subjective norms measurement

A = Manu amano **B** = Asatejawata

9.1A	Atera owanteuyitanoogeyyeotoototebirxekanseremaramaramatagedekulitanohe	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano 5. lowogeshaikano
9.1B	fayimateoogeyeeyitanohorebaalaasata	1. horontanidiaseema 2. diaseema 3. hurodieemo 4. aseema 5. horontaniasema
9.2A	Lowomentinachurchete mariachi aneotoototekanseremaramaramajawachishanohe	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano 5. lowogeshaikano
9.2B	Lowomentinacherchetemarichyanorebalankaasata	1. horontanidiaseema 2. diaseema 3. hurodieemo 4. aseema 5. horontaniasema

kifile 10: xawashoikitinootootototebirxekanseremaramaramaholanorichoxawisanoxa'mo

10.1.atidaganosaseaganagidootootototebirxekanseremaramaramateqixawate

xaraho	1	2	3	4	5	adaho

10.2.daganosaseaganagidootootebirxekanseremaramaramateatifajooti

Sumuudiyeema	1	2	3	4	5	Sumuuyeema

Kifile11: xawashoikitinokiotoototebirxekanseremaramaramaholanorichoxawisanoxa'mo

A = amo'noagara B = wolqaikanoricho

11.A	Daganosaseaganagidootoototebirxekanseremirmariheranoeyiteagadhata	1. Lowogeshadikano 2. dikano 3. hurodieemo 4. ikano 5. lowogeshaikano
11.B	Daganosaseaganagidootoototebirxekanseremaramaramadandamanohe	1. lowogeshasumuudiyeen 2. sumuudiyeema 3. hurodi'eema 4. sumuuyeema 5. lowogeshasumuyeema