



HAWASSA UNIVERSITY COLLEGE OF MEDICINE AND HEALTH SCIENCES

SCHOOL OF NURSING

**DETERMINANTS OF CERVICAL CANCER SCREENING UTILIZATION AMONG
WOMEN AGED 30-49 YEARS OLD IN NORTH ARI DISTRICT, ARI ZONE,
SOUTHERN ETHIOPIA, 2023.**

BY: AYALEW BELAYNEH (BSc N)

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ADVISORS' APPROVAL SHEET

This is to certify that the thesis result titled on “**Determinants of cervical cancer screening utilization among women aged 30-49 years old in north Ari district, Ari zone, Southern Ethiopia, 2023. Unmatched case-control study**” submitted in partial fulfillment of the requirements for the degree of Master’s in Adult Health nurse, the Graduate program of the school of nursing, and has been carried out by Ayalew Belayneh Id. No: PGAdNR/0003/14, under our supervision.

Therefore, we recommend that the student has fulfilled the requirements and hence hereby can submit the thesis result to the Graduate program of the school of nursing.

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DECLARATION

I, Ayalew Belayneh, hereby declare that this nursing thesis result is my original work and has not been presented for a degree in any other institute for academic requirement purpose, and all sources of material used for this thesis have been duly acknowledged.

Name: Ayalew Belayneh

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ABBREVIATIONS AND ACRONYMS

AHN-----Adult Health Nurse

AOR-----Adjusted Odd Ratio

Dr. -----Doctor

CCSU-----Cervical Cancer Screening Utilization

FMOH-----Federal Minister of Health

GLOBOCAN-----Global Cancer Statistics

HIV -----Human Immunodeficiency Virus

HPV-----Human Papilloma Virus

HU -----Hawassa University

HU-ERB -----Hawassa University Ethical Review Board

PI -----Principal Investigator

SAT -----Screen and Treat Approach

SD -----Standard Deviation

SPSS -----Statistical Package for Social Sciences

VIA -----Visual Inspection with Acetic Acid

WHO -----World Health Organization

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ABSTRACT

Background: In Ethiopia, an estimated 7445 women are diagnosed with cervical cancer, and 5338 die from the disease. But early screening has a vital role in reducing morbidity and mortality. However, the utilization of cervical cancer screening is very low in Ethiopia, and there is still no scientific evidence on determinant factors in the study area.

OBJECTIVE: To identify determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Ari zone, Southern Ethiopia, 2023.

METHODS: A community-based unmatched case-control study was conducted among 30-49-year-old women in the north Ari district from April 15/2023 to May 15/2023. A simple random sampling technique was used to select cases and control a total selected women were 219 for the study. A pre-tested, interviewer based, structured questionnaire was used to collect data. Data were entered using Epidata 3.1 and exported to SPSS (Statistical Package for Social Science) version 25 for data analysis. Variables with a p-value of less than 0.25 in the bivariable analysis were included in the multivariable logistic regression, and a final p-value of < 0.05 with a 95% confidence interval for the adjusted odds ratio to determine the level of significance.

RESULT: A total 216 women were participated in this study making a response rate of (98.7%). This study showed that no polygamy (AOR 0.23, 95%CI 0.12-0.44) a moderate level of knowledge about cervical cancer (AOR 6.75, 95%CI 1.9, 22.8), a high level of knowledge about cervical cancer (AOR 4.17, 95%CI 1.2, 14.1) and a positive attitude toward cervical cancer screening (AOR 3.57, 95%CI: 1.03, 12.30) were determinants of the utilization of cervical cancer screening.

CONCLUSION: Being polygamous, having knowledge about cervical cancer, and having a positive attitude toward cervical cancer screening were determinants of the utilization of cervical cancer screening. Therefore, this study recommended that North Ari health services could increase health education for people with monogamous, poor knowledge about cervical cancer and a negative attitude toward cervical cancer screening through health campaigns in communities to enhance the utilization of cervical cancer screening.

Keywords: Cervical cancer screening, Case control, Ari zone, Ethiopia

1. INTRODUCTION

1.1. Background

Cervical cancer is defined as the uncontrolled growth of normal cervix cells that develop from the squamous columnar junction (Williams, 2008). Cervical cancer typically takes ten years to develop (Kantelhardt *et al.*, 2014), and it might be completely asymptomatic in the early stages. In its latter phases, it may manifest as chronic pelvic pain, unexplained weight loss, bleeding in between periods, unusual vaginal discharge, and bleeding and pain after sexual intercourse (Williams, 2008, Assefa *et al.*, 2022).

The HPV virus, or human papillomavirus, is the main cause of cervical cancer, according to (Kusakabe *et al.*, 2023). High-risk HPV genotypes (16, -18, -52, -53, -56, -31-35, and -58) were the most commonly reported in Ethiopia. accounting for greater than 90% of cervical carcinoma (Gebremariam, 2016, Kusakabe *et al.*, 2023).

Human papillomavirus (HPV), low socioeconomic status, tobacco smoking, marrying before the age of 18 years, long-term hormonal contraceptive use, HIV co-infection, multiple sexual partners, and multiple births are all known risk factors for cervical cancer (Kashyap *et al.*, 2019). In Ethiopia, approximately 29.43 million reproductive-aged women were at risk of acquiring HPV infection-related cervical cancer (Bruni *et al.*, 2017).

The methods which used for screening are Pap smear, visual inspection of cervix with acetic acid (VIA), visual inspection of cervix with lugol' solution (VILI) and human papilloma virus (HPV) test; but VIA followed by treatment is an effective method , relatively simple procedure and feasible in resource limited (Ali *et al.*, 2012).

The WHO proposed three goals to eliminate cervical cancer: goal one requires that 90% of girls be vaccinated against HPV by the age of 15, goal two requires that 70% of women be screened with a high-performance test at the age of 35 and again at 45, and goal three requires that 90% of women were diagnosed with cervical cancer receive therapy (90% of women with pre-cancerous treated; 90% of women with aggressive cancer were successfully treated) that is designed to eliminate cervical cancer by reducing the number of cases to 4 cases per 100,000 women annual targets for 2030 (WHO, 2022).

However, Cervical cancer screening is provided is quite low in poor and middle-income nations, according to a study that found 12.87% of Sub-Saharan African women have received cervical cancer screening in 2019 (Yimer *et al.*, 2021). Similarly, the Ethiopian Federal Minister of Health aimed for at least 80% coverage of the target age-eligible female population for pre-invasive cervical cancer screening and treatment by 2020 (FMOH, 2015) and applied free "screen and treat" (SAT) approaches for women aged 30 to 49 years by using visual inspection with acetic acid (VIA), which has been the suggested screening strategy in developing countries where resources are scarce (FMOH, 2015).

The visual inspection of the cervix with the acetic acid (VIA) test is simple to use, does not require laboratory infrastructure, and can be performed by any health care provider after a brief training period (FMOH, 2015). However, the overall coverage of cervical cancer screening in Ethiopia was found to be 2.9% in 2015 (Gelibo *et al.*, 2017). 1.6% of urban women and 0.4% of rural women were screened in Ethiopia (FMOH, 2015). Consequently, cervical cancer is the second leading cause of cancer death among women in Ethiopia, after breast cancer 2020 (GLOBOCAN, 2020). However, the extensive use of screening for cervical cancer in developed countries has resulted in a more than 80% decrease in cervical cancer mortality (Denny *et al.*, 2017).

Regular screening and early treatment are critical for lowering the incidence and mortality associated with cervical cancer. Therefore, concrete evidence is crucial and needed to identify the determinant factors of cervical cancer screening usage at the individual, community, and health system levels for the prevention and control of cervical cancer, increase community awareness of cervical cancer screening, and tackle this public health problem.

1.2. Problem Statement

Cervical cancer is the most common malignant type of cancer in women worldwide (Sung, 2020). It is the fourth most common cancer among females, after breast, colorectal, and lung cancer, with an estimated 604,127 new cases and 341,831 deaths in 2020 (GLOBOCAN, 2020). However, early screening and vaccination against HPV 16 and 18 could prevent more than 95% of the burden (Sung, 2020).

The widespread use of cervical cancer screening in developed countries has resulted in a dramatic decline in cervical cancer mortality by 80% or more over the last few decades (Denny *et al.*, 2017). However, in developing countries, cervical cancer remains a major public health problem (Arbyn *et al.*, 2020). Those less developed countries share about 85% of new cases and 87% of deaths due to cervical cancer (Ferlay *et al.*, 2015).

In Ethiopia, cervical cancer is the second leading cause of cancer death among females next to breast cancer. It has become a double burden among Ethiopian women, with an estimated 7445 new cases and 5338 deaths in 2020 (GLOBOCAN, 2020). Among those, 80% of reported cases are diagnosed at late stages (Echelman and Feldman, 2012), this late diagnoses were majorly due to insufficient screening, early detection, and treatment services, as well as a lack of awareness of cancer signs and symptoms, insufficient diagnostic facilities, and a poorly structured referral system were the main identified challenges in Ethiopia (FMOH, 2015).

In Ethiopia, a community-based cross-sectional survey shows an extremely low rate of cervical cancer screening of 2.9% in 2015 (Gelibo *et al.*, 2017). However, in Ethiopia, cervical cancer screening tests have been offered since 2014 for women aged 30-49 years and HIV-positive women by VIA and pap smear, followed by cryotherapy as methods of screening and treatment for precancerous lesions, but this is still a very low number from the Federal Minister of Health, who aimed for at least 80% coverage in 2020 (FMOH, 2015).

Moreover, a different small scale study shows very low utilization of VIA screening 2.3% in a Butajira rural setting among women aged 30-49 years in 2020; (Ruddies *et al.*, 2020). 12.2% in Addis Ababa in 2020 (Woldetsadik *et al.*, 2020), 9.9% in Hossana in southern Ethiopia in 2017 (Aweke *et al.*, 2017), 3.8% in the Gurage zone in 2020 (Endalew *et al.*, 2020), and 15.5% in

Jimma town in 2017 (Nigussie *et al.*, 2019). 4% (Belay *et al.*, 2020) in Dire Dawa, Eastern Ethiopia. Shabadino district, Sidama, Ethiopia, 10.3% 2020 (Kasim *et al.*, 2020).

In most of the previous small-scale studies in various sections of Ethiopia, it has been shown that in public hospitals in Tigray region (Teame *et al.*, 2019), in Southern Ethiopia (Ayanto *et al.*, 2022), in Hawassa city administration and Sidama zone (Dulla *et al.*, 2017), Dire Dawa, Eastern Ethiopia (Belay *et al.*, 2020) and Dessie (Assefa *et al.*, 2022), the predicted utilization of screening among women was institutional or hospital-based. However, in Ethiopia, screening is usually conducted only when a woman seeks medical care for another reason (Gebrie *et al.*, 2015). Women without symptoms are not routinely screened in many areas of Ethiopia (Gurmu, 2018).

Furthermore, many of the previous studies in Hawassa town (Assefa *et al.*, 2019), in Wolaita (Mesfin *et al.*, 2023), in Kenya (Gatumo *et al.*, 2018), in Hawassa city administration and Sidama zone (Dulla *et al.*, 2017), in Adama Hospital (Mohamed *et al.*, 2023), and in Tanzania (Mabelele *et al.*, 2018) employed a cross-sectional study design, which is inherently weak to reliably identify predictors of screening utilization that can be regarded for implementation purposes. This calls for further research to identify predictors using strong study designs to provide planners with reliable evidence to determine the utilization of cervical cancer screening in the community and to take action on each factor to decrease the morbidity and mortality of cervical cancer. Still, there is no tangible evidence about the determinants of cervical cancer screening utilization in the study setting. Therefore, this study was to identify the determinants of cervical cancer screening utilization among women aged 30–49 years old in the North Ari district, Ari zone, Southern Ethiopia. It is hoped that the study findings will provide information to develop and implement strategies to increase the utilization of services, and they will serve as the baseline for further research in our study area.

1.3. Significance of the Study

This study tried to assess the determining factors for the utilization of screening among women aged 30–49 years old, and the findings also assisted health professionals and health institutions in planning intervention programs.

It was primarily benefit women because it may raise their awareness and knowledge of cervical cancer screening, reduce cervical cancer-related illness, reduce advanced cervical cancer and mortality, and improve women's quality of life.

It also contributes to the media's ability to educate and raise community awareness about the morbidity and mortality associated with cervical cancer and its screening practices.

Likewise, the findings of this study important for the North Ari district administration and health office to decide to take effective public health measures based on evidence about the problem of cervical cancer. It also serves as a reference for other researchers who are studying related studies.

2. LITERATURE REVIEW

2.1. General overview

Cancer is a public health issue globally (Sung, 2020). There have been an estimated 19.3 million new cancer cases and 10.0 million cancer deaths, with this number expected to rise to 28.4 million new cases by 2040 (Sung, 2020). In Africa, cancer is an emerging public health problem, with estimates of 5.7% new cases and 7.1% cancer deaths in 2020 (Ferlay *et al.*, 2021). Like other African countries, the incidence of cancer is rising in Ethiopia, with estimates that 21,563 and 42,722 cancer cases were diagnosed in males and females, respectively (Memirie *et al.*, 2018). Among males lung, prostate, and non-melanoma skin, and females, breast, lung cancer, and cervical cancer are the most common diagnosed cancer cases in the world (Ferlay *et al.*, 2021). Cervical cancer is the fourth most common malignant type of cancer and causes of cancer-related death in women across the world. Globally, 604,127 new cases and 341,831 deaths are expected by 2020 (GLOBOCAN, 2020) most of them in sub-Saharan Africa, including Ethiopia (Mboumba Bouassa *et al.*, 2017).

Every year in Ethiopia, cervical cancer is the most common diagnosed cancer among all cancer cases and the second leading gynecologic cause of death, next to breast cancer. In Ethiopia, an estimated 7445 women are diagnosed with cervical cancer and another 5338 die from the disease 2020 (GLOBOCAN, 2020). The WHO proposed to reducing the number of cervical cancer cases to 4 cases per 100,000 women per year targets for 2030 by using three goals (90-70-90) for developing countries (WHO, 2022) .

Likewise, cervical cancer has decreased in the United States as a result of widespread cervical cancer screening, with death rates falling from 2.8 to 2.3 per 100,000 women from 2000 to 2015. In 2018, there are expected to be 13240 new cases and 4170 deaths. The majority of cervical cancer cases and deaths occur in women who were not properly checked, followed up on, or treated for the disease (Curry *et al.*, 2018).

The high burden of cervical cancer in developing countries is due to a lack of access to screening services and delayed treatment (Arbyn *et al.*, 2011) Poverty, little education, living in rural areas, lack of knowledge about cervical cancer, lack of health care infrastructure, and lack of trained practitioners are the main obstacles to the implementation of cervical cancer screening in

developing countries including Ethiopia (Sheth and Maitra, 2014). However, in Ethiopia, the overall coverage of cervical cancer screening was found to be 2.9% 2015(Gelibo *et al.*, 2017). 1.6% of urban women and 0.4% of rural women were screened in Ethiopia (FMOH, 2015).

2.2. Determinant of cervical cancer screening utilization

Study conducted in Dessie town revealed that age groups of 35 and older, current occupation as a private employee, having symptoms of vaginal bleeding or pelvic pain or post-coital bleeding or vaginal discharge, being recommended by a physician for screening, and having a positive attitude toward cervical cancer screening were found to be significantly associated with cervical cancer screening utilization (Assefa *et al.*, 2022).

In another cross sectional study conducted in Dire Dawa, Ethiopia revealed that the factors associated with cervical cancer screening service utilization were older age, attending private health facilities, being employed, visiting gynecology departments, being knowledgeable, being counseled by health professionals, and users of family planning (Belay *et al.*, 2020) . Similarly, a study conducted in Arba Minch town found that parity, marital age, average monthly income, educational status, perceived severity of cervical cancer, and perceived benefits of cervical cancer screening were associated factors for cervical cancer screening utilization(Gebru *et al.*, 2016).

An unmatched case-control study in Northwest Ethiopia was implemented with a total sample size of 230 (46 cases and 184 controls) among women's with providers' recommendation (AOR = 6.8; 95% CI: 2.3–9.7), history of sexually transmitted infection (AOR = 6.9; 95% CI: 1.29, 7.2), frequency of facility visit (AOR = 4.8; 95% CI: 1.97, 11.8), and history of vaginal examination (AOR = 0.21; 95% CI: 0.1, 0.68) were the main predictors of utilization cervical cancer screening (Muluneh *et al.*, 2019).

Twenty-four studies with a total of 14,582 age-eligible women were included in meta-analysis study in Ethiopia revealed that knowledge on cervical cancer and screening(OR 4.01,95%CI:2.76,5.92), history of multiple sexual partners (OR 5.01, 95%CI:2.61,9.61), women's age(OR4.58,95%CI:2.81,7.46),history of sexually transmitted disease (OR 4.83,95% CI:3.02,7.73), Perceived susceptibility to cervical cancer(OR 3.59, 95%CI:1.99,6.48),getting advice from health care providers (OR 4.58, 95%CI:3.26, 6.43), women's educational level (OR

6.68,95%CI:4.61,9.68), women's attitude towards cervical cancer and screening (OR 3.42, 95%CI:2.88,4.06) were the determinant factors of cervical cancer screening uptake among age-eligible women in Ethiopia (Ayenew *et al.*, 2020).

A cross-sectional study conducted on utilization of cervical cancer screening and factors associated with screening utilization among women aged 30–49 years in Mertule Mariam Town, East Gojjam Zone, Ethiopia revealed that Age (≤ 16 years) at first sexual intercourse (AOR 14.89, 95% CI 6.21 to 35.74), history of sexually transmitted disease (AOR 11.65, 4.56 to 29.78), having multiple sexual partners (AOR 11.65, 95% CI 4.56 to 29.78), having good knowledge about cervical cancer screening (AOR 4.72, 95% CI 2.33 to 9.56) and having a family history of cervical cancer (AOR 4.72, 95% CI 2.33 to 9.56) were statistically significantly associated factors for utilization of cervical cancer screening (Tesfaw *et al.*, 2022).

2.2.1. Socio-demographic characteristics

A different study showed that maternal age was one of the significant determinants of cervical cancer screening utilization. A case control study in Dessie town revealed that women in the age group of 35 or more were 11 times more likely to be screened as compared to women in the age group of less than 35 [AOR] = 11.24 (95%CI: 5.49–23.43) (Assefa *et al.*, 2022), likewise A community-based cross-sectional study conducted in Hawassa city among women aged 30–49 years old the maternal aged 40–49 years significantly associated cervical cancer screening almost 5 times higher (AOR = 4.64, 95%CI: 2.15–10.01) in those study participants aged 30–39 year (Azene, 2021). This is similarly with study results in Ethiopia, where a national survey revealed that women's age is one of the most significant determinants of cervical cancer screening utilization (Gelibo, 2017).

Likewise, cross sectional study conducted in Dire Dawa, Ethiopia, revealed that the women who were older (aged 40–49 years) were almost four times (AOR 4.2; 95% CI: 1.3–13.8) more likely to use the screening service compared with women aged less than 40 years (Belay *et al.*, 2020). Other similar studies in Malaysia (Gan, 2013) and Kenya (Mbaka, 2018) revealed that women age increase the screening utilization also increase. Another study revealed that women in their 30s were 4.58 times (OR = 4.58, 95% CI: 2.81, 7.46) more likely to uptake cervical cancer screening services as compared to those who were in the age range of 21–29 years (Ayenew *et al.*, 2020).

Further, according to study conducted in Jordanian women indicates years of marriage among women who had been screened for cervical cancer was 1.09 times greater than that for women who had never been screened for cervical cancer. This means that as the years being married increase, the incidence of cervical cancer screening increases (Al-Amro *et al.*, 2020).

A community-based cross-sectional study conducted in Mertule Mariam town, East Gojjam Zone on utilization of cervical cancer screening among women aged 30–49 years revealed that Women who took college and above education were five times more likely to use cervical cancer screening service as compared with women who did not take formal education (AOR: 5.810 (95% CI: 1.939 to 17.404)). Similarly, women who attended primary education were three times more likely to use cervical cancer screening service as compared with women who did not attend formal education (AOR: 3.429 (95% CI: 1.303 to 9.022) (Tesfaw *et al.*, 2022).

A cross-sectional study conducted in Arba Minch town, Southern Ethiopia, revealed that women with average monthly incomes ≥ 1170 ETB were 4 times more likely to utilize cervical screening than those with average monthly incomes < 1170 ETB (AOR = 3.59 (1.22, 10.59)) (Gebru *et al.*, 2016). Another cross-sectional study in St. Paul's Teaching and Referral Hospital, Ethiopia revealed that women who had been earned 3000–3999 Birr per month [OR = 2.93, 95% CI: 1.32–6.51] and those who had earned more than 4000 birr per month [OR = 2.97, 95% CI: 1.27–6.92] were more likely to seek screening than women who had earned less than 2000 birr per month (Woldetsadik *et al.*, 2020)

Study conducted in Dessie town, current occupations of private employees were 4.67 times more likely to utilize cervical cancer screening than those of housewives (AOR = 4.67 95%CI: 2.41–9.03) (Assefa *et al.*, 2022). A study conducted in Hadiya and Kambata Tembaro zones revealed that urban area participants were 2.7 times more likely to uptake cervical cancer screening than rural participants (Ayanto *et al.*, 2022) also a study conducted in Uganda revealed similar findings (Ndejjo *et al.*, 2016).

Study conducted in Addis Ababa St. Paul's Teaching and Referral Hospital, Ethiopia women living in urban were screened (15.9%) and women living in rural were (3.9%) (Woldetsadik *et al.*, 2020). Access to cervical screening services may be more difficult in rural settings than urban

due to screening centers not being within walking distances, lack of transport and cost of transportation (Mupepi *et al.*, 2011).

2.2.2. Reproductive related factors to cervical cancer screening utilization

A community-based cross-sectional study conducted in Hawassa city among women aged 30–49 years old showed that having a history of sexually transmitted infection (STI) increased the odds of VIA screening by about 4 times (AOR = 3.90, 95% CI: 2.02–7.53) among those study participants with a history of STI when compared to those without a history (Azene, 2021). Similarly cross sectional study conducted in Ethiopia revealed that Women who had a history of STD were 11 times more likely to screen for cervical cancer than those who had no history of STD (Tesfaw *et al.*, 2022).

A study conducted in Bahir Dar city revealed that among women who used cervical cancer screening women with a history of STI, were 6.9 times higher than those who didn't have any infections related to sexual (Muluneh *et al.*, 2019). Which was consistent with the findings of other studies conducted in Botswana (Mingo *et al.*, 2012) and Zambia (Mwanahamuntu *et al.*, 2013). Study conducted in Arba Minch women who have <5 children were less likely to be screened than those who had ≥ 5 children (Gebbru *et al.*, 2016).

An institution-based unmatched case–control study conducted in Dessie town revealed that women user of family planning was five times more likely to accept CCSU compared to those who did not use family planning (Assefa *et al.*, 2022). also other study conducted in Kenya revealed consistent when women user of family planning increase (Mbaka *et al.*, 2018). This could be due to an increased chance of communicating with health care providers to obtain information about cervical screening and the availability of screening services.

A cross- sectional study conducted on utilization of cervical cancer screening and factors associated with screening utilization among women aged 30–49 years in Mertule Mariam revealed that participants with age ≤ 16 years at first sexual intercourse were 14 times more likely to use cervical cancer screening as compared with those with age > 16 years at first sexual intercourse. Women who had multiple sexual partners were seven times more likely to screen for cervical cancer than those who had no multiple sexual partners (Tesfaw *et al.*, 2022).

2.2.3. Knowledge related to cervical cancer screening utilization

A facility-based cross-sectional study conducted in Dire Dawa found that women who were knowledgeable about cervical cancer and screening were five times more likely to use screening services than their counterparts (AOR 4.8; 95% CI: 1.5-15.5). Knowledge of cervical cancer and its prevention increases the odds of screening utilization (Belay *et al.*, 2020). In another study in Ethiopia, women who had adequate knowledge about cervical cancer screening were 4.04 times (OR = 4.04, 95% CI: 2.76, 5.92) more likely to be screened as compared to those who had insufficient knowledge about cervical cancer screening (Ayenew *et al.*, 2020).

A study conducted in Hawassa City revealed that among women who received information from health care providers, the odds of using VIA screening were about 4.5 times higher (AOR = 4.52, 95%CI: 1.69–12.11) among those participants who had received information from health care providers when compared to those who had not received information from health care providers (Azene, 2021).

A study conducted in Dire Dawa revealed that the women who were counseled by healthcare providers about cervical cancer and its prevention methods were four times more likely to utilize screening services than their counterparts (Belay *et al.*, 2020). This might be due to the trust of healthcare providers, which increases the probability of screening service utilization. Another study conducted in Ethiopia shows that those who were recommended by health professionals for CCS were 3.07 times more likely to utilize cervical cancer screening than those who were not recommended (AOR = 3.07, 95% CI: 1.45, 6.49). (Assefa *et al.*, 2022) also other study conducted in Jordanian women indicates that the healthcare provider encouragement increases, five times the odds of cervical cancer screening (Al-Amro *et al.*, 2020).

Study conducted in Dessie town revealed that women having symptoms of vaginal bleeding, pelvic pain, post-coital bleeding, or vaginal discharge were 3.08 times more likely to utilize the cervical cancer screening than those who did not have those symptoms (AOR = 3.08, 95% CI: 1.37–6.95) (Assefa *et al.*, 2022). Furthermore, Women who heard about the benefits of cervical cancer screening were more likely to be screened [OR = 4.11, 95% CI: (1.12-15.04)] than those who did not, according to a study conducted at Addis Ababa St. Paul's Teaching and Referral Hospital in Ethiopia. Respondents who knew about precancerous cervical dysplasia, which could

happen without symptoms, were more likely to be screened (OR = 2.09, 95% CI: 1.06–4.10) than women who didn't know. When compared to their counterparts, women who agreed with the thought that "I can't do screening even though it's beneficial" were less likely to be screened [OR = 0.10, 95% CI: (0.02-0.43)]. Women who were likely to have cervical cancer were more likely to be screened than their counterparts [OR = 5.36, 95% CI: (2.12- 13.55) (Woldetsadik *et al.*, 2020).

A health facility-based cross-sectional study conducted in Dire Dawa, Ethiopia revealed that women who attended private health facilities were approximately nine times (AOR 8.9; 95% CI: 2.8- 28.0) more likely to use screening services compared with those who attended public health facilities. This might be due to the need for safety and privacy issues and promotion and intervention activities to eligible women disseminate information about cervical cancer and its screening by private health facilities. In addition, there might be adequate counseling to the individual client about cervical cancer and its screening service by healthcare providers in these facilities (Belay *et al.*, 2020).

2.2.4. Attitude related to cervical cancer screening

A study conducted in Hawassa, Ethiopia, revealed that the odds of using VIA screening were about four times higher (AOR = 3.67, 95% CI: 1.68–8.04) among those participants who had awareness about cervical cancer screening when compared to those who had no awareness about cervical cancer screening (Azene, 2021). Likewise, the odds of using VIA screening were about six times higher (AOR = 6.25, 95% CI: 2.99–13.05) among study participants with community health education when compared to those without community health education (Azene, 2021). Also, other studies show that those who perceived the chance of getting cervical cancer were more likely to be screened [OR = 3.40, 95% CI: 1.51–7.69] as compared with women who had a low perception (Woldetsadik *et al.*, 2020). Another study conducted in Dessi town revealed that women with a positive attitude toward CCS were 5.3 times more likely to utilize cervical cancer screening than those who had a negative attitude toward CCS (AOR = 5.3 (2.8–10.59)) (Assefa *et al.*, 2022).

A study conducted in Arba Minch shows that 46.2% have a negative attitude towards cervical cancer screening. Around (62.1%), (58.8%), (54.6%) respondents believed that screening is pain

full, unpleasant/or embarrassing and too expensive respectively (Gebru *et al.*, 2016) . The most prevalent reasons mentioned for non-screening were being healthy (60.0%), followed by a lack of awareness (21.8%) (Gebru *et al.*, 2016).

The findings of this study provided valuable input for women, health care providers, and health institutions in order to prevent precancerous cervical lesions that result in cervical cancer. This study provides important information for health care providers who are working on cervical cancer prevention and treatment by identifying factors determining cervical cancer screening utilization. Further, knowledge of risk factors for precancerous lesions and the advantages of screening can help women seek early treatment for cervical cancer and avoid risk factors that might expose them to the disease. Therefore, we conducted a study to address the determinant factors for the utilization of cervical cancer screening among women screened for cervical cancer in the north Ari district, Ari zone, Southern Ethiopia.

2.3 .Conceptual Framework

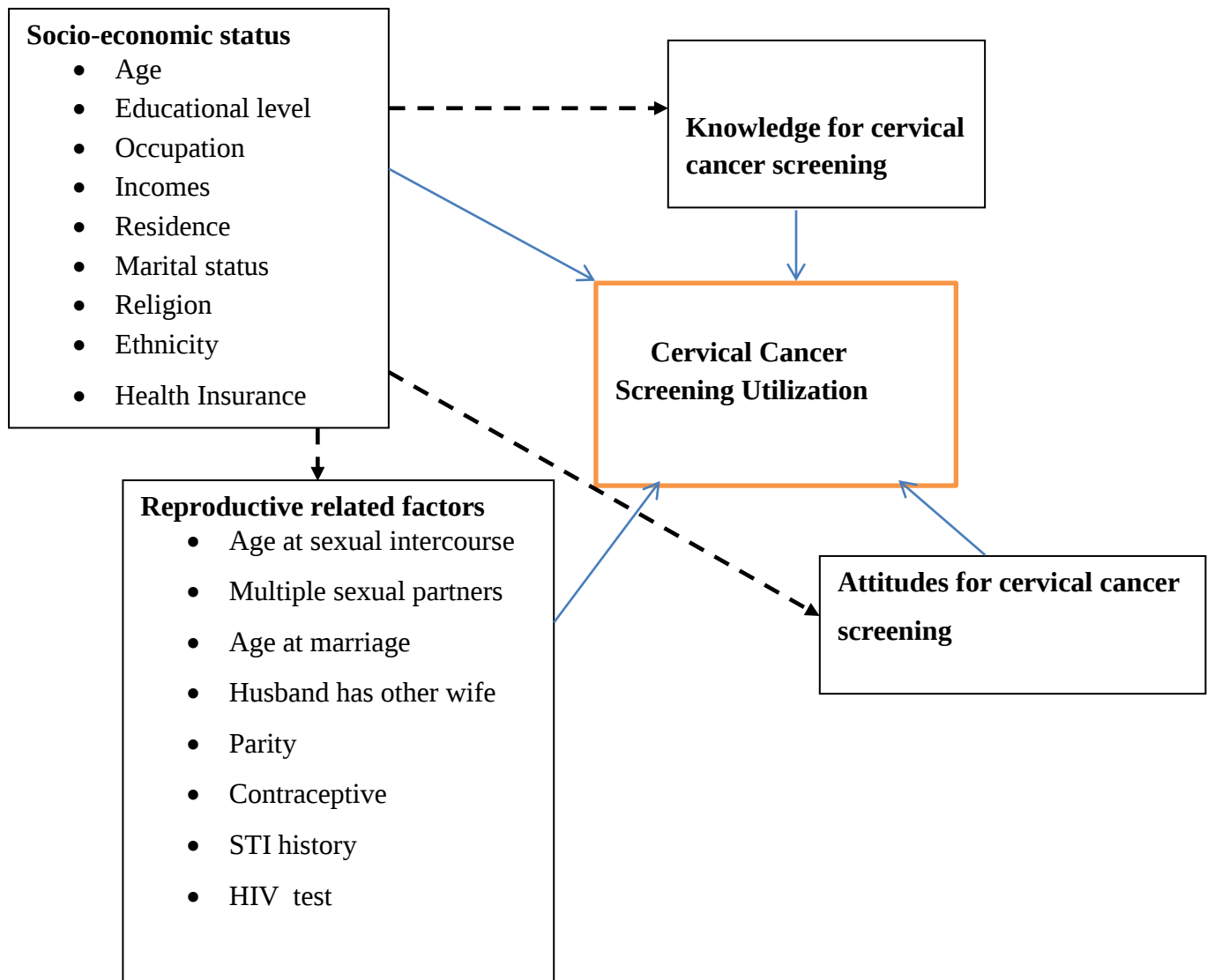


Figure 1; Conceptual frame work on determinants of cervical cancer screening utilization among women aged 30-49 years old adapted by reviewing the literature, 2023.

(Assefa et al., 2022, Fentie et al., 2020, Mbaka et al., 2018)

3. OBJECTIVE

- ❖ To identify determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Ari zone, Southern Ethiopia, 2023.

4. MATERIALS AND METHODS

4.1. Study area

This study was conducted in North Ari district, Ari Zone, Southern Ethiopia. Ari Zone is located at 755 km away from Addis Ababa capital city of Ethiopia and 213 km from Wolayita state city of Southern Ethiopia. North Ari worda is found at a distance of 80 km from the capital city of Ari Zone (Jinka) in the north direction. The district was thirty six administrative kebeles (smallest administrative unit in Ethiopia) [68]. According to unpublished data from the North Ari district administration Office 2022, the total population of the district was 44627, of which 21867 males and 22760 females. The district has a total of 10107 households. The district has five health centers, thirty six health posts. For the district only Gelila town health center was providing cervical cancer screening by using visual inspection of the cervix with acetic acid (VIA) and treat with cryotherapy applied free "screen and treat" (SAT) approaches.

4.2. Study design and period

A community-based unmatched case-control study was carried out from April 15/2023 to May 15/2023.

4.3. Source Population

All women in the age group of 30–49 years old in North Ari district was the source population.

4.4. Study Population

Cases = All women in the age group of 30–49 years old who were screened for cervical cancer in the Gelila health center from December 20/2020 to May 15/2023.

Controls = All women in the age group of 30–49 years old who didn't get screening for cervical cancer in the Gelila health center up to May 15/2023.

4.5. Study unit

Cases - Selected women in the age group of 30–49 years old and residents of the study area who were screened for cervical cancer from December 20/2020 to May 15/2023.

Controls - Selected women in the age group of 30–49 years old and residents of the study area who were didn't get screening for cervical cancer up to May 15/2023.

4.6. Inclusion criteria

For Cases:-All women in the age group of 30–49 years old and residents of the study area and were screened for cervical cancer from December 20/2020 to May 15/2023 at the study site.

For Control:- All women in the same age group of cases (30–49 years old) and residents of the study area and who were didn't get screening for cervical cancer up to May 15/2023.

4.7. Exclusion criteria

Women who are severely ill, unable to give responses (known with mental illness) as well as women who had already been diagnosed with cervical cancer and were receiving treatment during the data collection period were excluded from the study.

4.8 .Sample size determination

The sample size was determined by using a double population proportion formula using EPI-info version 7.3 with the assumption of power = 80%; confidence level = 95%, case to control ratio of 1:2, Factors considered for sample size calculation were: Being Para five and above (Lemma *et al.*, 2022), Modern contraceptive utilization (**Lemma *et al.*, 2022**), High level of Knowledge(Lemma *et al.*, 2022), Government employee (Belay *et al.*, 2020).

P_1 = the proportion of women in the age group of 30–49 years old utilized modern contraceptive screened for cervical cancer, and

P_2 = the proportion of women in the age group of 30–49 years old utilized modern contraceptive but not screened for cervical cancer, as the main predictors, which was 78.5% and 57.7 % among cases and controls, respectively (**Lemma *et al.*, 2022**).

Finally, by considering 10% non-response rates, a total of 219 (73 from cases and 146 from controls) were generated, the largest sample size (**Lemma *et al.*, 2022**).

Table 1; Sample size calculation for determinants of cervical cancer screening utilization among 30- to 49-year-old women in the north Ari district, Southern Ethiopia, 2023.

Main factor	CI (%)	Power (%)	Case to control ratio	% of exposure control	AOR	Sample size		
						Case	Control	Total with 10% non-response
Being Para five and above (Lemma, 2022)	95	80	1:2	10.2	4.5	42	84	126
Modern contraceptive utilization (Lemma, 2022)	95	80	1:2	57.7	5.4	73	146	219
High level of Knowledge (Lemma, 2022)	95	80	1:2	17.7	5.93	24	48	72
Government employee (Belay, 2020)	95	80	1:2	91.4	3.3	5	10	15

4.9 .Sampling procedure

Firstly, three districts (woredas) (the smallest administrative unit in Ethiopia next to zone) were randomly selected by lottery from the six woredas with 50% representativeness of other districts. Secondly, one woreda (the north Ari woreda) was randomly select from the selected woreda.

Cases: were selected in the Gelila health center from the cervical cancer screening registration book by using a simple random sampling technique. And lists of selected study participants, addresses were taken from the registration book by the principal investigator with the help of the cervical cancer screening register nurse. Proportional allocations of sample size for each selected kebele were based on the number of cases in each selected kebele, and a probability proportional was made for each selected kebele.

Controls : were selected from the nearest neighbors to the cases; a list of women were obtained from the health extension workers in order to arrange the sample size allocation and the sampling frame of the households. The same interview questionnaire was administered to both cases and controls at their household. The participant households in each kebele were selected by a simple random sampling technique to obtain the required sample size from each selected kebele.

Further, for a household with more than one eligible woman, one woman was randomly selected by using the lottery method. Finally, a total of 219 women (73 cases and 146 controls) were chosen.

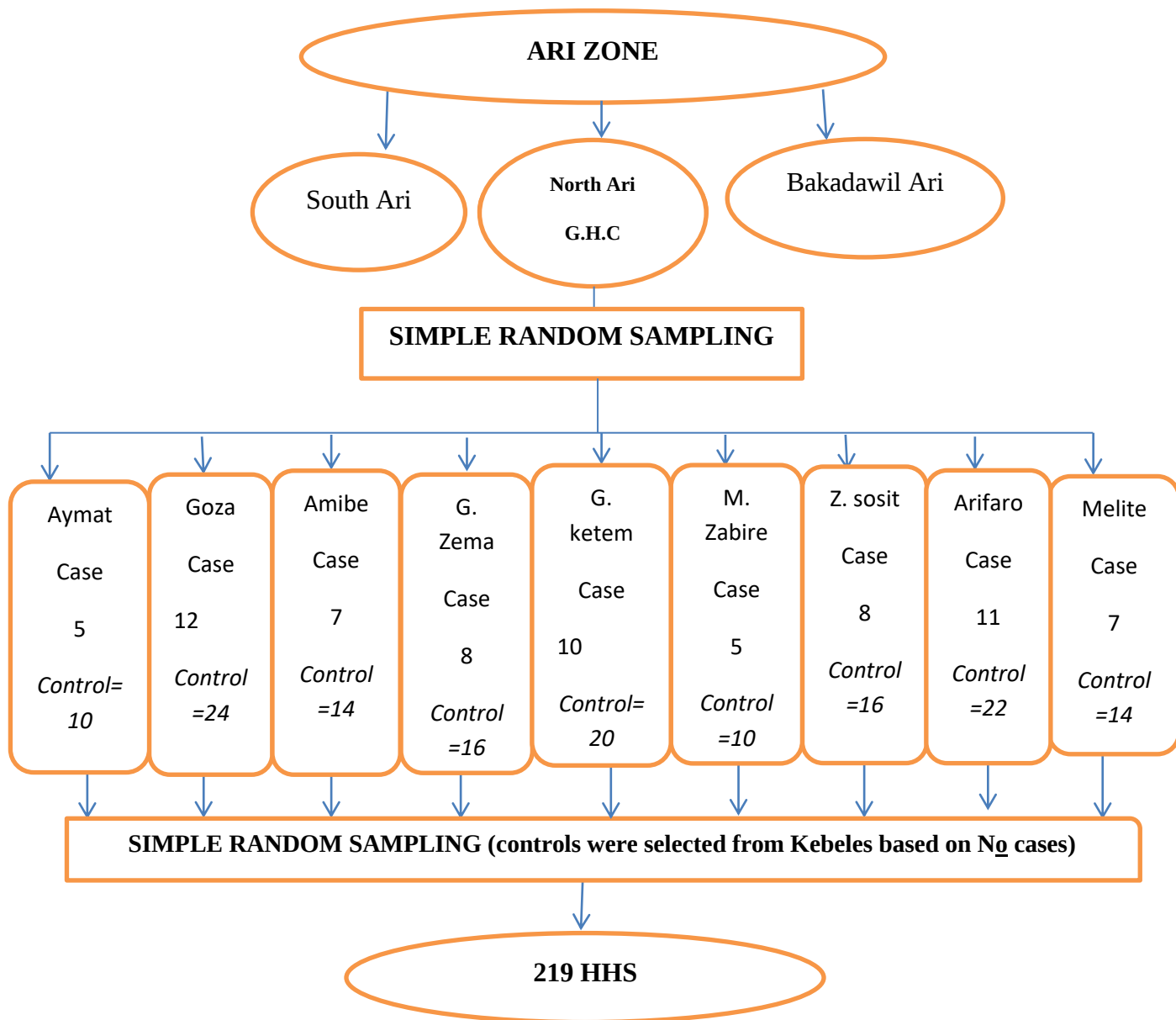


Figure 2: Schematic representation to determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Southern Ethiopia, 2023.

4.10. Study variables

Dependent Variable

- Cervical cancer screening utilization

Independent Variables

- ✚ **Socio-demographic characteristics** - (Age, level of education, marital status, religion, occupational status, family monthly income, place of residence, ethnicity, and health insurance).
- ✚ **Reproductive health and behavioral related factors** – (Age at sexual intercourse, multiple sexual partners, age at marriage, husband has other wife (polygamy), parity, contraceptive utilization, STI history and HIV test).
- ✚ **Knowledge for cervical cancer screening** and
- ✚ **Attitudes for cervical cancer screening**

4.11. Operational definition

- ✓ **Cervical cancer screening:** It is used to find changes in the cells of the cervix prior to the development of cervical cancer (FMOH, 2015).
- ✓ **Utilization of cervical cancer screening:** women who ever screened at least once in their lifetime were consider to have used cervical cancer screening (Tesfaw *et al.*, 2022)
- ✓ **Knowledge for cervical cancer screening** was measured by (11) eleven knowledge questions, and correct answers was categorized as 1, while 0 for an incorrect answers, and I don't know.
- ✓ The total points scored were 11, and the minimum was 0. The knowledge was assessed using the sum score of each item based on Bloom's cut-off point (Lemma *et al.*, 2022)
- ✓ The scores were classified into 3 levels as follows:
- ✓ **High-level of knowledge:** - Knowledge scores that fell between 8.8- 11 (80%-100%)
- ✓ **Moderate level of knowledge:** Knowledge scores that fell between 6.6- 8.7(60%-79.9%)
- ✓ **Low-level of knowledge:** - Knowledge score of less than 6. 6 points (< 60%).
- ✓ And the **women's Attitudes for cervical cancer screening** include (14) fourteen items to measure with a five-point Likert scale (1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree).

- ✓ All individual answers were summed up for total scores and calculate for means percent.
- ✓ The scores were classified into three levels (Positive Attitude, Neutral Attitude and Negative Attitude) according to Bloom's cut-off point.
- ✓ **Positive attitude:**—Attitude scores that fell between 11.2- 14 (80% - 100%).
- ✓ **Neutral attitude:**—Attitude scores that fell between 8.4-11.1 (60% -79. 9%).
- ✓ **Negative attitude:**—Attitude score less than 8.4 (<60%).

4.12. Data Collection tools

A face-to-face interviewer-based structured questionnaire was adapted from related literatures (Lemma et al., 2022, Gebru et al., 2016, Getachew et al., 2019) and modified to the context of this study. It was prepared in English and translated to Amharic before being returned to English to check for consistency. It address socio-demographic factors such as (Age, level of education, occupational status, family monthly income, place of residence, marital status, religion, ethnicity, and health insurance), reproductive and behavioral related factors like (Age at sexual intercourse , multiple sexual partners , age at marriage ,husband has other wife , parity, contraceptive utilization, STI history and HIV test).

Women's Knowledge for cervical cancer screening related factors, symptoms, prevention methods, and screening methods for cervical cancer was measured by Eleven knowledge questions, and correct answers was categorized as 1, while 0 for an incorrect answers, and I don't know. The total points scored were 11, and the minimum was 0. The knowledge was assessed using the sum score of each item based on Bloom's cut-off point (Lemma *et al.*, 2022). The scores were classified into 3 levels as follows: High-level of knowledge, Moderate level of knowledge and Low-level of knowledge.

And the **women's Attitudes** for cervical cancer screening include fourteen items to assess the outlook and barriers regarding causative factors and preventive measures for cervical cancer screening, measured with a five-point Likert scale (1-strongly disagree, 2-disagree, 3-neutral, 4-agree, and 5-strongly agree). The scores were classified into three levels (Positive Attitude, Neutral Attitude and Negative Attitude) according to Bloom's cut-off point.

4.13. Data collection methods and personals

Data were collected by six diploma-trained midwives who are fluent in the local language through face-to-face interviews using a door-to-door approach with a structured questionnaire after two days of training with their BSc nurse supervisor (one day before the pretest and a day after the pretest). The use of oral consent was discussed and recommended with the Institutional Review Board of Hawassa University. The study participants who were not available for three repeated visits were taken as non-respondents. Methods, the purpose of the study, and the assurance of confidentiality were fully explained to the participants.

4.14. Data quality assurance

To assure the quality of the data, the tool was prepared first in English and then translated to Amharic, then back to English to check for consistency. Data collectors and supervisor were trained on the data collection process for two days, and they are fluent in the local language. A pretest was conducted on 5% (three cases and six controls) of the total sample size in Ziffty Akicha kebele that is not selected for actual data collection, and modifications were made. The reliability of the questionnaires was checked through SPSS by reliability index measurement for knowledge and attitude questions (Cronbach's alpha) which was 0.918 and 0.744 respectively. The content validity of the questionnaire was reviewed by qualified public health specialists. Moreover, data collection was closely monitored by the principal investigator and supervisor. Before data entry, the questionnaires were checked for completeness by the supervisor and principal investigator.

4.15. Data analysis and presentation

Data were coded and entered using Epi data 3.1 and exported to SPSS (Statistical Package for Social Science) version 25 for data processing, cleaning, and analysis. In descriptive statistics, like frequency and percentage, were carried out to describe socio-demographic characteristics, reproductive, knowledge, and attitude-related factors of cervical cancer screening utilization, and the result was presented in texts, tables, and graphs. The bivariate and multivariate analyses were done using binary logistic regression to identify factors associated with the utilization of cervical cancer screening among women. Variables with a p-value of less than 0.25 in the bi-variable analysis were included in the multivariable logistic regression to adjust for possible confounders (Lemma *et al.*, 2022). A final p-value of < 0.05 with a 95% confidence interval for the adjusted

odds ratio was used to determine the level of significance. Lastly, the Hosmer and Lemeshow goodness-of-fit (P-value = 0.955) which was checked to test for model fitness. The independent variables were tested for multi co-linearity using the Variance Inflation Factor (VIF) and the Tolerance tests with (p-value <10 and > 0.1 respectively).

4.16. Dissemination of results

The result of this study was presented to Hawassa University School of Nursing as partial fulfillment of a master's degree in adult health nursing. And it was submitted to City of Hope in the United States and the Medizinische Fakultät der Martin-Luther-Universität Halle-Wittenberg in Germany was funding this thesis. The findings of this study will be disseminated through presentation, publication, and distribution to relevant bodies. Hard and soft copies were available in the library of HU for students as well as for other concerned bodies and also submitted to the district health office.

4.17. Ethical clearance

Ethical approval was obtained from the Institutional Review Board of Hawassa University College of Medicine and Health Science (**Ref. No: HU/IRB/301/15**). An official letter of cooperation also written to the concerned body from Hawassa University School of Nursing, and a letter was submitted to the North Ari district health office (**Ref. No: N/S/152/15**). The purpose of the study was explained to the all study participants, and informed consent was secured before data collection is commenced. The confidentiality of the information was also be ensured.

5. RESULTS

5.1. Socio demographic characteristics of the study population

A total of 216 women (72 cases and 144 controls) participated in the study for response rate of (98.7%); 3 women (1 case and 2 controls) refused to participate. Among the study participants, 47 (65.30%) of the cases and 115 (79.9%) of the controls were found to be in the age group of 30–39 years old. The mean and standard deviation of ages of the cases and controls were 36.39 (± 4.76) and 35.34 (± 4.55) years, respectively.

Regarding the educational status of the participants, 38 (52.8%) of cases and 76 (52.8%) of controls had no formal education. At the time of this study, fifty-three (73.6%) cases and 125 (86.8%) controls were married. Among the study participants, 47 (65.3%) of the cases and 124 (86.12%) of the controls were of Ari ethnicity. Concerning the residence status of participants, 47 (65.3%) of cases and 101 (70.13%) of controls were rural residents (Table 2).

Table 2: Socio-demographic characteristics of women in the age group of 30–49 years in North Ari district, Ari Zone, Southern Ethiopia, April to May 2023(N = 216).

Socio-demographic variables of study participants (N = 216)	Frequency	
	Number/percentage of cases (n = 72)	Number/percentage of controls (n= 144)
Age group (years)		
30–39	47(65.3 %)	115(79.9)
40–49	25(34.7)	29(20.1)
Educational status		
No formal education	38(52.8)	76 (52.8%)
Read and write	5(6.9)	9(6.25 %)
Primary education (1–8)	10(13.9)	16(11.1)
Secondary education (9–12)	10(13.9)	22(15.27)
College or above	9(12.5)	21(14.6%)
Occupation		
House wife	42(58.3%)	97(67.36%)
Farmer	11(15.3%)	11(7.64%)
Merchant	8(11.11%)	12(8.33)
Government employee	6(8.33%)	19(13.19%)
Others*	5(6.9%)	5(3.47 %)
Average monthly income ETB		
≤ 1000	19(26.4%)	43(29.9%)
1001–2000	36(50 %)	53(36.8%)
≥ 2000	17(23.6)	48(33.3%)
Marital status		
Single	6(8.33%)	5(3.47%)
Married	53(73.6%)	125(86.8%)
Widowed	5(6.9%)	7(4.86%)
Divorced	8(11.11%)	7(4.86%)
Religion		
Orthodox	19(26.4%)	57(39.6%)
Protestant	32(44.4%)	57(39.6%)
Cultural religion	8(11.11%)	15(10.4%)
Muslim	7(9.7%)	8(5.55%)
Others**	6(8.33%)	7(4.85)
Ethnicity		
Ari	47(65.3%)	124(86.12%)
Basketo	6 (8.34%)	8 (5.56%)
Goffa	12 (16.66%)	6 (4.16%)

Others***	7 (9.7%)	6(4.16%)
Residence		
Rural	47(65.3%)	101(70.13%)
Urban	25(34.7%)	43(29.87%)
Health Insurance		
Yes	64 (88.89%)	48 (33.33%)
No	8 (11.11%)	96 (66.66%)

Others(*daily labourer, house maid, coffee makers) (**Adventist, Catholic, Jehovah)(***) Wolayita, Gamo, Oyida etc.). ETB - Ethiopian Birr

5.2. Reproductive health-related characteristics of the participants

The study participants fifty-eight (80.55%) of the cases and 100 (69.44%) of the controls had their first sex at the age of ≤ 18 years. Respondents with fifty four (75%) of the cases and 116 (80.55%) of the controls had one sexual partner in their lifetime.

The study participants were engaged in marital relations at the age of less than tween years; 55 (76.4%) were cases and 97 (67.36%) were controls. Regarding the husband having another wife, more than sixty-five percent of the cases and 44 (30.56%) of the controls had more than one wife.

Among the study participants, the majority, 64 (88.89%) of the cases and 138 (95.84%) of the controls, have no STI history since a data collection. Regarding the HIV test, 61 (84.72%) of the cases and 100 (69.44%) of the controls had ever tested for HIV. The Majority (91.81%) of the cases and 95 (95%) of the controls had Negative results for the HIV test (Table 3).

Table 3: Reproductive and individual health related characteristics of respondents in the age group of 30–49 years in North Ari district, Ari Zone, April to May 2023(N = 216).

Reproductive and individual health related variables of study participants (N = 216)	Frequency	
	Number/percentage of cases (n = 72)	Number/percentage of controls (n = 144)
Age at first sex		
<18 years	58(80.55%)	100 (69.44%)
≥18 years	14(19.45%)	44(30.56%)
Number of partner in your life time		
1	54 (75%)	116 (80.55%)
≥2	18 (25%)	28 (19.45%)
Age at first marriage		
<20 years	55(76.4%)	97(67.36%)
≥20 years	17(23.6%)	47(32.64%)
Currently your husband has polygamy		
Yes	40 (55.56%)	44 (30.56%)
No	32(44.44%)	100(69.44%)
Parity		
< 5	42 (58.33%)	86 (59.72%)
≥ 5	30 (41.67%)	58 (40.28%)
History of used modern contraceptives		
Yes	64(88.89%)	115(79.86%)
No	8(11.11%)	29(20.14%)
STI history		
Yes	8 (11.11%)	6 (4.16%)
No	64 (88.89%)	138(95.84%)
HIV test		
Yes	61(84.72%)	100(69.44%)
No	11(15.28%)	44(30.56%)
HIV result		
Positive	5 (8.19%)	5 (5%)
Negative	56(91.81%)	95 (95%)

5.3. Knowledge of study participants on cervical cancer screening

The respondents' knowledge of cervical cancer screening was described using eleven measurement variables. According to the operational definition given in the methods section, thirteen (18.06%) of the respondents have high-level comprehensive knowledge among cases, and 7 (4.86%) of the respondents among controls have high-level knowledge, whereas a majority (63.88%) of the cases and 131 (90.97%) of the controls had a low level of Knowledge about cervical cancer screening services based on Bloom's cut-off point (Figure 3).

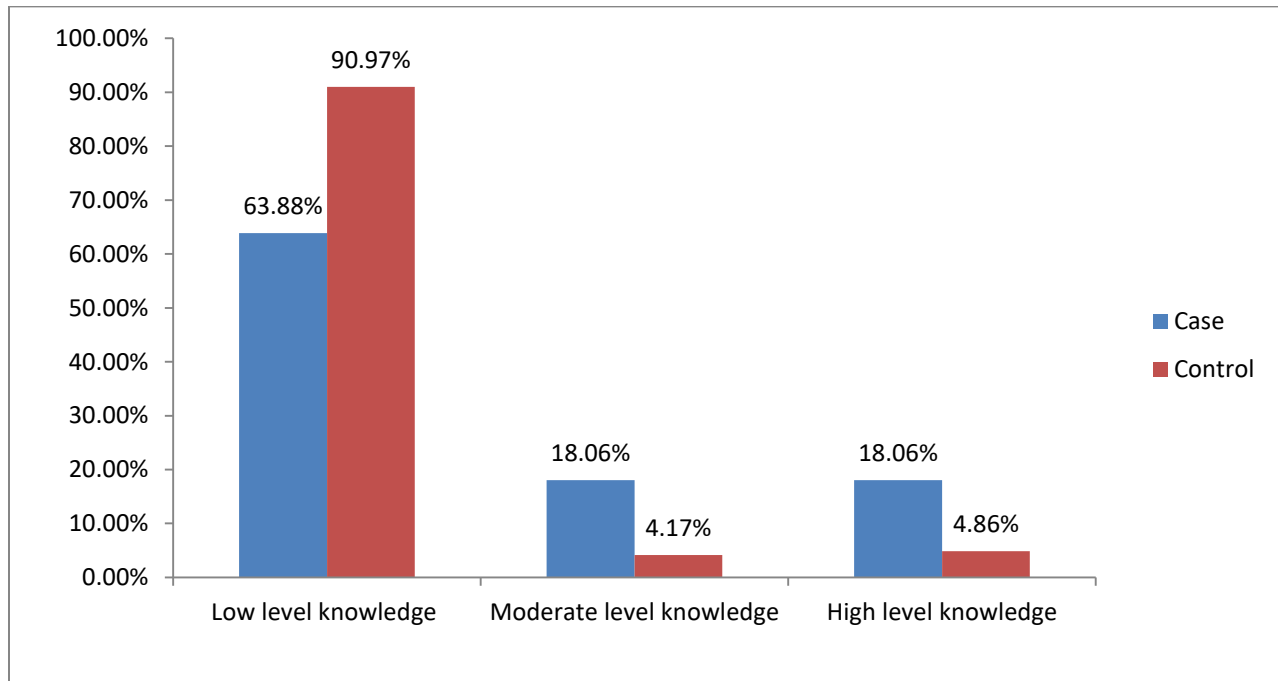


Figure 3: Knowledge of cervical cancer screening among women in the age group of 30–49 years in North Ari district, Ari Zone, Southern Ethiopia, April to May 2023.

5.4. Attitude of study participants on cervical cancer and its screening

According to the operational definition given in the methods section, Participants' attitudes regarding cervical cancer screening 46(63.89%) of the respondents have a negative attitude among cases, and 110(76.39%) among controls have a negative attitude about cervical cancer screening services based on Bloom's cut-off point (See Figure 4 Below).

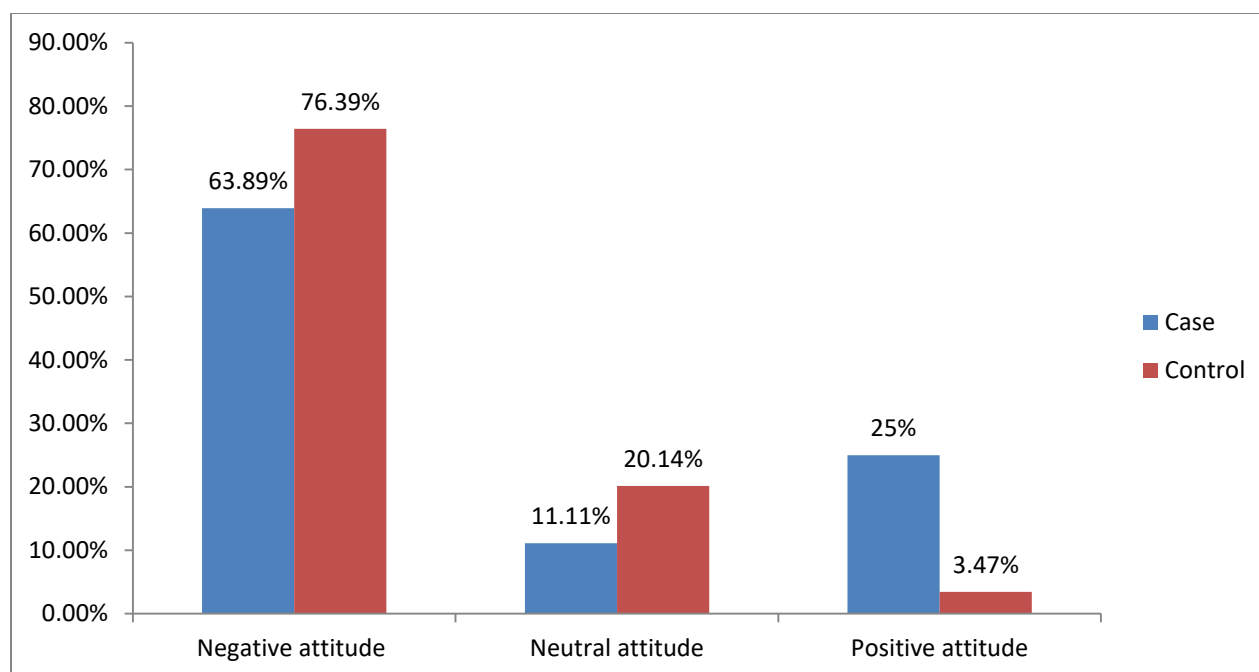


Figure 4: Attitude of cervical cancer screening among women in the age group of 30–49 years in North Ari district, Ari Zone, Southern Ethiopia, April to May 2023.

5.5. Determinants of cervical cancer screening service utilization

After controlling for the effects of other confounding factors, this study tries to assess factors affecting the utilization of cervical cancer screening. Bi-variable and multivariable logistic regression analyses were carried out to see the association between explanatory variables and the outcome of interest. Variables with a p-value < 0.25 on Bi-variable logistic regression were further run under Multivariable logistic regression, as were those with a p-value less than 0.05. Currently the husband has no polygamy (AOR = 0.23, 95%CI: 0.12-0.44) a moderate level of knowledge about cervical cancer (AOR = 6.75, 95% CI 1.9, 22.8), a high level of knowledge about cervical cancer (AOR = 4.17, 95%CI 1.2-14.1), and a positive attitude toward cervical cancer screening (AOR=3.57, 95%CI: 1.03, 12.30) were found to be significantly associated with the utilization of cervical cancer screening.

Women whose husband has no polygamy were 0.23 times less likely to utilize cervical cancer screening services (AOR = 0.23, 95%CI: 0.12-0.44) than their counterparts. On the other hand, Participants who had a moderate level of knowledge about cervical cancer screening were more than six times more likely to utilize cervical cancer screening services (AOR = 6.75, 95% CI 1.9,

22.8) than their low level of knowledge, and participants who had a high level of knowledge about cervical cancer screening services were 4.17 times more likely to utilize cervical cancer screening services (AOR=4.17, 95%CI 1.2-14.1) than their low level of knowledge. Similarly, participants with a positive attitude towards cervical cancer screening were 3.57 times more likely to utilize cervical cancer screening services than their counterparts (AOR =3.57, 95%CI: 1.03, 12.30) (Table 4).

Table 4: Bi-variable and Multi-variable analysis of selected variables with utilization of cervical cancer screening among women in the age group of 30–49 years in North Ari district, April to May 2023

Variables	Cases	Controls	COR (95%) CI	AOR (95%CI)	P-Value
Age group (years)					
30–39	47(65.3 %)	115 (79.9 %)	1	1	
40–49	25(34.7 %)	29 (20.1%)	2.1 (1.12-3.97)	1.91(.9 -4.04)	0.091
Age at first sexual					
<18 years	58 (80.55%)	100 (69.44%)	1	1	
≥18 years	14 (19.45%)	44 (30.56%)	.55(.28-1.09)	0.7(0.3 -1.56)	0.393
Polygamy					
Yes	47 (65.28%)	44(30.56%)	1	1	
No	25 (34.72%)	100(69.44%)	.23(.128- .427)	0.23 (.12-.44)	0.000
Level of Knowledge					
Low Level Knowledge	46(63.88%)	131(90.97%)	1	1	
Moderate Level Knowledge	13(18.06%)	6 (4.17%)	6.2(2.26-17.18)	6.75(1.9-22.8)	0.002
High Level Knowledge	13(18.06%)	7(4.86 %)	5.3 (1.98-14.10)	4.17(1.2-14.1)	0.022
Attitude level					
Negative attitude	46 (63.89%)	110 (76.39%)	1	1	
Neutral attitude	8 (11.11%)	29 (20.14%)	0.66(0.28-1.55)	0.59(.21-1.59)	0.297
Positive attitude	18 (25 %)	5 (3.47%)	8.6 (3.01-24.57)	3.6(1.03-12.3)	0.044

Case = women aged 30–49 screened for cervical cancer, Control, women aged 30–49 not screened for cervical cancer, Crude odds ratio (COR), Adjusted odds ratio (AOR), Confidence interval (CI), 1 = Reference points.

6. DISCUSSION

This study was conducted to identify determinants of cervical cancer screening utilization among women aged 30-49 in the North Ari district of southern Ethiopia. This study showed that women whose husbands have no polygamy (AOR = 0.23, 95%CI: 0.12-0.44), a moderate level of knowledge about cervical cancer (AOR = 6.75, 95%CI 1.9, 22.8), a high level of knowledge about cervical cancer (AOR = 4.17, 95%CI 1.2, 14.1), and a positive attitude toward cervical cancer screening (AOR=3.57, 95%CI: 1.03, 12.30) were determinants of the utilization of cervical cancer screening.

Those participants who had no polygamy in their family were 0.23 times less likely to be screened as compared to their counterparts (AOR = 0.23, 95%CI 0.12, 0.44). This result was consistent with the studies conducted in Semarang and Malaysia, which reported that the respondent's husband's support had a significant relationship to cervical cancer screen participation. The main reason found was that the husband gives more freedom to their wives to choose and make a decision on their health due to the fact that women know best about their health (Linadi, 2013, Oon et al., 2010) .So they would screen without fear of a husband. Other studies conducted in India was shown that spouses number of sexual partners increasing was positively associated with risk of carcinoma of the cervix (Kashyap et al., 2019) . This might be due to having threat about cervical cancer and having an interest in the utilization of cervical cancer screening services.

However, this finding is different from a study conducted in Northern Ethiopia, Tigray Region and Ambo Town where polygamy was a reproductive-related variable but not significantly associated with cervical cancer screening utilization (Teame *et al.*, 2019, Lemma *et al.*, 2022). However, this study revealed that the women whose husbands have polygamy had a higher frequency than in other related literature in Ethiopia; further more in our communities, the majority of women are households, and depends financially on their husbands. Their husbands typically decide to access this preventative service this might be a difference from other studies. Also other possible reasons for the difference might be cultural differences, the study period, the study design, or the study setting.

According to the study, women with a moderate level of knowledge about cervical cancer (AOR = 6.75, 95% CI 1.9, 22.8) and a high level of knowledge about cervical cancer (AOR = 4.17,

95% CI 1.2, 14.1) were significantly associated with cervical cancer screening service utilization, with those women being more than six times and 4 times more likely to utilize cervical cancer screening as compared to those with a low level of knowledge, respectively. This result was consistent with the studies conducted in, Amhara region, Dire Dawa, Dessie city, Mekelle zone, Ambo town and Tanzania which showed that women who were knowledgeable about cervical cancer screening were 3.6, 4.8, 3.07, 2.3, 5.9 and 3.3, times more likely to utilize cervical cancer screening services than their counterparts, respectively (Legasu *et al.*, 2022, Assefa *et al.*, 2022, Tefera and Mitiku, 2017, Bayu *et al.*, 2016). Furthermore, the findings of this study are similar to those of studies conducted in Malawi, Ghana, and Nairobi which revealed that women who have a high level of knowledge are more likely to utilize cervical cancer screening as compared to their counterparts (Chosamata *et al.*, 2015, Prempeh, 2018, Lukorito *et al.*, 2017). This might be due to having good knowledge about cervical cancer and its screening and having an interest in the utilization of cervical cancer screening services.

In this study, a positive attitude towards cervical cancer screening was significantly associated with cervical cancer screening service utilization. That means participants with a positive attitude towards cervical cancer screening were 3.57 times more likely to utilize cervical cancer screening services than their counterparts (AOR =3.57, 95% CI:1.03, 12.30). This finding is supplemented with studies conducted in Ethiopia, Amhara region, Debre Markos, Wolaita and Dessi town which indicate that the odds of getting screened for cervical cancer were 2.0, 3.4, 4.8, and 5.3 times higher among women who had positive attitudes than those who had negative attitudes respectively (Legasu *et al.*, 2022, Bante *et al.*, 2019, Tekle *et al.*, 2020, Assefa *et al.*, 2022). However, this finding is different from a study conducted among respondents who had negative attitudes had 46.2% and 63% lesser odds of being screened compared to those who had positive attitudes towards screening in Arba Minch and Nigeria (Gebru *et al.*, 2016, Titiloye *et al.*, 2017). Likewise, A study conducted in Arba Minch town shows that Around (62.1%), (58.8%), (54.6%) respondents believed that screening is pain full, unpleasant/or embarrassing and too expensive respectively (Gebru *et al.*, 2016) . The most prevalent reasons mentioned for non-screening were being healthy (60.0%), followed by a lack of awareness (21.8%) (Gebru *et al.*, 2016). The discrepancy may be due to time variation, differences in study settings, sample

size or study design and others might be the hospitalized women might have high health-seeking behavior and better access to information.

In this study findings, as the determinants for cervical cancer screening service utilization were polygamy, knowledge and attitude of women towards cervical cancer and its screening, the healthcare authority should create awareness through information, education, and communication (IEC) and behavioral change communication (BCC) through health information communication on the usage of cervical cancer screening. It is hoped that this will also improve the knowledge and attitude of women.

Strength of this study

- ✓ The strength of this study is that we used a community-based door to door approach for both cases and controls in order to increase generalizability.
- ✓ Moreover, this study was designed to measure the exposure and outcome due to its case-control study design.

Limitations of this study

- ✓ Limitations of this study include the possibility that social desirability and recall bias may have affected the results as the information was self-reported.

7. CONCLUSION

Being polygamous, having knowledge about cervical cancer, and having a positive attitude toward cervical cancer screening were determinants of the utilization of cervical cancer screening.

Therefore, this study recommended that North Ari health services could provide increased health education for people with monogamous, poor knowledge about cervical cancer and a negative attitude toward cervical cancer screening through health campaigns in communities to enhance the utilization of cervical cancer screening.

8. RECOMMENDATIONS

District (Woreda) Health Office would strengthen the utilization of mass media to influence the attitude of women towards cervical cancer and increase health-seeking behavior through health information dissemination about cervical cancer screening by health providers throughout the community in places such as schools, markets, and colleges to aid in increasing knowledge and changing the attitude of women to utilize cervical cancer screening and promote youth-friendly service areas to appeal to young women.

Health institutions and health professionals would strengthen the spouse involvement of special women with monogamous, poor knowledge about cervical cancer and a negative attitude toward cervical cancer screening for all women of reproductive age as a means to increase cervical cancer screening indirectly and give cervical cancer screening information to all reproductive women that come for any purpose to any facilities.

Further studies would be conducted among male involvement on reproductive women in rural areas about cervical cancer screening, including a qualitative study to explore why there is limited screening utilization.

9. REFERENCES

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10. ANNEXES

ANNEX I: Subject Information Sheet (English version)

Hello. My name is ----- and I am data collector of the study conducted by Ayalew Belayneh who is master's student at Hawassa university school of Nursing and He is conducting this research for partial fulfillment of Master's degree in Adult Health Nursing. We appreciate your participation in this study and the information you are tell us were important for us to know the determinant factors to cervical cancer screening utilization among 30- to 49-year-old women and to prevent those risk factors to perform the appropriate intervention that help as to reduce mortality and morbidity related to cervical cancer among 30- to 49-year-old women. This questionnaire doesn't take more than 20-30 minute to complete.

Name of the organization: Hawassa University, College of medicine and Health Sciences, School of Nursing.

Title of the Research Project: Determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Ari zone, South Ethiopia, 2023.

Introduction: Information sheet, consent and assent form were prepared for women 30- to 49-year-old who are living in the North Ari district, South Ethiopia, who were volunteer to participate in this research project.

Purpose: To identify the determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Ari zone, South Ethiopia, 2023. The information that you tell us are very important for not only the successful accomplishment of the study but also for producing relevant information which will help in improving the provision of cervical cancer screening service for women 30- to 49-year-old which focused on giving care to all age-eligible women who are at risk and I will provide research results to Concerned body for intervention.

Procedure: In order to achieve the above objective, information which is necessary for the study were taken from women aged 30-49 years old who are screened cervical cancer and those women aged 30-49 years old not screened cervical cancer. Responses were completely confidential.

Risk: We hope you were participated in the study for the sake of the benefit of the research result we are sure there is no risk in participating in this research project.

Benefits: There may not be direct benefit to you but your participation is necessary for us in assessment of the risk factors of cervical cancer screening utilization among women aged 30-49 years old which help to improve the screening service delivered to mothers and you were not be provided any incentive or payment to take part in this project. Alternative procedures you may choose not to participate in this study and it was not affect the health care that provided to you.

Confidentiality: The information collected from this research project kept confidential and all records and other information kept strictly confidential and your protected health information will not be used without permission. All data identified by number or otherwise coded to protect any information that could be used to identify you.

Number of Participants: a total of 219 (73 cases and 146 controls) of cervical cancer screening utilization among women aged 30-49 years old with case to control ratio of 1:2.

Voluntary Participation: It is up to you to decide whether to takes part in this study or refusal to participate. Research has no penalty or loss of benefits to which you otherwise entitled. This will not affect your relationship with the investigators. If you are voluntary to give information for the study, you can show your willingness by saying “yes”.

1. If yes, proceed to the next page.

2. If no, Thanks the participant! , and skip to the next participant

Name of data collector _____Signature ----- Date: -----/-----/---

If you have questions, complaints or concerns about this study, you can contact the principal Investigator.

Principal investigator: Ayalew Belayneh, Cell Phone; +251-916-699-876

Address: Email address: ayumanbelay@gmail.com or belayayale12@gmail.com

Annex II: Consent form (English version)

In undersigning this document, I am giving my consent to participate in the study entitled as “Identify determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Ari zone, South Ethiopia, 2023”. I have been informed that the purpose of this study is to identify determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, Ari zone, South Ethiopia, 2023. I have understood that participation in this study is entirely voluntarily. I have been told that my answers to the questions will not be given to anyone else and no reports of this study ever identify me in anyway. I have also been informed that my participation or non-participation or my refusal to answer questions will have no effect on me. I understood that participation in this study does not involve risks. I understood that Ayalew Belayneh is the contact person if I have questions about the study or about my rights as a study participant.

Respondent's signature/finger print _____ Date-----

Interviewer

Name _____ Signature _____ Date _____

House hold code no -----

English version questionnaire form

Part 1: Socio-demographic characteristics				
Code	Question	Response	Skip	Remark
101	How old are you?	-----year		
102	What is your educational status?	1. No formal education 2. Read and write 3. Primary education (1–8) 4. Secondary education (9–12) 5. College and above		
103	What is your occupation?	1. House wife 2. Farmer 3. Merchant 4. Government employee 5. Other ,please specify		
104	What is your monthly income?	-----Birr		

105	What is your marital status?	1. Married 2. Divorced 3. Widowed 4. Single		
106	What is your placement?	1. Rural 2. Urban		
107	What is your religion?	1. Orthodox 2. Protestant 3. Cultural religion 4. Muslim 5. Other, please specify		
108	What is your Ethnicity?	1. Ari 2. Basketo 3. Goffa 4. Others please specify		
109	Do you have Health insurance?	1. Yes 2. No		
Part. 2: Reproductive health and behavioral related factors				
201	At what age of first sexual intercourse started?	1. <18 years 2. ≥18 years		
202	How many numbers of sexual partners in your life time?	1.1 2. ≥2		
203	At what age do you get first marriage?	1. <20 years 2. ≥20 years		
204	Currently your husband has another wife?	1. Yes 2. No		
205	How many children do have?	1. < 5 2. ≥ 5		
206	Do you ever use modern contraceptive?	1. Yes 2. No		
207	Do you have a history of sexually transmitted diseases in your life?	1. Yes 2. No		
208	Have you ever been tested for HIV?	1. Yes 2. No		
209	If the answer is "yes" Q, 208, what was the test result?	1. Positive 2. Negative		
Part. 3: Knowledge and related factors of cervical cancer screening among age 30-49 years old women				
Code	Question	Response	Skip	Remark
301	Have you heard of cervical cancer?	1. Yes 2. No		
302	Source of information?	1. Health workers 2. From TV/Radio 3. Family 4. Friends 5. others -----		

303	Cervical cancer symptoms?	1. Vaginal bleeding 2. Vaginal foul-smelling discharge 3. Post-coital bleeding 4. I don't know		
304	Do you know the risk factors of cervical cancer? "More than one answer is possible"	1. Having multiple sexual partners 2. Early age initiation of sexual intercourse 3. Cigarette smoking 4. Acquiring human papillomavirus 5. History of STD 6. Multi-parity 7. Use of modern contraceptive 8. Family history of cervical cancer 9. I do not know		
305	How can cervical cancer be prevented?	1. Through minimizing multiple sexual partners 2. Through avoiding early sexual intercourse 3. Through avoidance of smoking 4. Through vaccination of HPV 5. I do not know		
306	Can cancer of the cervix be cured at the early stage?	1. Yes 2.No 3. I do not know		
307	How can someone with cancer of the cervix be treated?	1. Use of herbal remedies 2. Surgery 3. Use of specific drugs given by the hospital 4. Radiotherapy 5. I do not know		
308	How expensive do you think cancer of the cervix treatment is in this country?	1. It is free of charge 2. It is reasonably priced 3. Moderately expensive 4. It is very expensive 5. I do not know		
309	Do you know that there exists cervical cancer screening?	1.Yes 2.No		
310	Can you mention any of the methods used in screening for cervical cancer?	1. VIA test 2. HPV test 3. Pap Smear/ Cytology test 4. I do not know		
311	How frequent is screening for cervical cancer performed	1. Once every year 2. Once every three years 3. Once every 5 years 4. I do not know		

Part 4. Attitude of respondents toward cervical cancer screening utilization

Code	Characteristics	Strongly disagree(1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly Agree (5)
401	You may get cervical cancer during your life?					
402	Having cervical cancer screening regularly decrease worry of cervical cancer.					

403	Having a regular cervical cancer screening is the best to diagnose early cancer.					
404	Having regular cervical cancer screening will decrease chances of dying from cervical cancer.					
405	You may afraid to have a cervical cancer screening for fear of a bad result.					
406	You don't know where to go for a cervical cancer screening.					
407	You would be ashamed to lie on a gynecologic examination table and show your private parts to have a cervical cancer screening.					
408	Having a cervical cancer screening takes too much time.					
409	Having a cervical cancer screening is too painful.					
410	You have other problems more important than having a cervical cancer screening in your life.					
411	You are too old to have a cervical cancer screening regularly.					
412	There is no health center close to your house to have a cervical cancer screening.					
413	The screening places are too far from where I live.					
414	You prefer a female health provider to conduct a cervical cancer screening.					

Thank you for your time and response.

ክፍል አንድ፡ የጥናቱ የተሳትፎ ፍቃደኝነት መግለጫ ፎርም

ጤና ይሰጥልኝ ፡፡ ስሜ -----እባላለሁ መረጃ ሰብሳቢ ነኝ ፡፡

ይህንን ጥናት የሚያካሂደው በሀዋሳ ዩኒቨርሲቲ የነርቪንግ ትምህርት ክፍል የማስተርስ ተማሪ የሆነው አያሌው በላይነህ ስሆን በአዋቂዎች ጤና ነርስ የማስተርስ ዲግሪ የመመረቅ ድህረ ምረቃ ነው፡፡ በዚህ ጥናት ላይ ተሳትፎዎን እናደንቃለን እና እርስዎ የሚነግሩን መረጃ ከ30 እስከ 49 ዓመት ባለው የዕድሜ ክልል ውስጥ ባሉ ሴቶች የማኅጸን በር ካንሰር ምርመራ አጠቃቀም ላይ ተጽእኖ የሚያሳድሩትን ነገሮች እንድናውቅ እና እነዚያን አደገኛ ሁኔታዎች ለመከላከል ተገቢውን ምላሽ ለመስጠት ጠቃሚ ይሆናል ፡፡ አልፎም በሴቶች ላይ ከማህጸን በር ካንሰር ጋር የተዛመዱ ሞትን እና ህመምን ለመቀነስ ይረዳል ፡፡ ይህ መጠይቅ ለማጠናቀቅ ከ20-30 ደቂቃ በላይ አይፈጅም፡፡

የድርጅቱ ስም፡- ሀዋሳ ዩኒቨርሲቲ፣ የህክምናና ጤና ሳይንስ ኮሌጅ፣ ነርስ ትምህርት ክፍል፡፡

የምርምር ፕሮጀክቱ ርዕስ፡ በሰሜን አሪ ወረዳ ከ30-49 ዓመት ዕድሜ ክልል ውስጥ ባሉ ሴቶች ላይ የማኅጸን በር ካንሰር ምርመራ አጠቃቀም ላይ ተጽእኖ የሚያሳድሩ ነገሮች መለየት ይሆናል ፡፡

መግቢያ፡ በዚህ የምርምር ፕሮጀክት ለመሳተፍ በሰሜን አሪ ወረዳ ለምትኖሩ ከ30 እስከ 49 ዓመት የሆናቸው ሴቶች የመረጃ ወረቀት፣ የስምምነት እና የድጋፍ ቅጽ ይዘጋጃል፡፡

አላማ፡ በሰሜን አሪ ወረዳ ከ30-49 ዓመት ዕድሜ ክልል ውስጥ የሚገኙ ሴቶች የማህጸን በር ጫፍ ካንሰር ምርመራ አጠቃቀምን የሚወስኑትን ለመለየት ስሆን፡፡ የምትነግሩን መረጃ ለመመረቅ ብቻ ሳይሆን የእናቶችን ሞት ቅነሳ ዙሪያ በጣም ጠቃሚ ነው፡፡ የጥናቱ የመጨረሻ ውጤት ለጤና ባለሙያዎች ፣ ለፎልስ አውጪዎች፣ ለሌላም ባለ ድርሻ አካላት እንደ መረጃ በመሆን እድሜያቸው ከ30 እስከ 49 ዓመት ለሆኑ ሴቶች የማኅጸን በር ካንሰር ምርመራ አገልግሎትን ለማሻሻል የሚረዳ ጠቃሚ መረጃ በማዘጋጀት ለአደጋ ተጋላጭ ለሆኑ ሴቶችን መንከባከብ ላይ ያተኮረ ነው፡፡

የአሰራር ሂደት፡- ከላይ የተመለከትነውን አላማ ለማሳካት ለጥናቱ አስፈላጊ የሆነው መረጃ ከ30-49 ዓመት የሆናቸው የማህጸን በር ካንሰር ከተመረመሩ እና ከ30-49 ዓመት ዕድሜ ያላቸው የማህጸን በር ካንሰር ያልተመረመሩ ሴቶች ይሆናል፡፡ ምላሾች ሙሉ በሙሉ ሚስጥራዊ ይሆናሉ ፡፡

ስጋት፡ ለምርምር ውጤቱ ጥቅም ሲባል በጥናቱ ላይ እንደሚሳተፉ ተስፋ እናደርጋለን በዚህ የምርምር ፕሮጀክት ውስጥ መሳተፍ ምንም አይነት ስጋት እንደሌለ እርግጠኛ ነን፡፡

ጥቅማ ጥቅሞች፡ ለእርስዎ ቀጥተኛ ጥቅም ላይኖር ይችላል ነገር ግን ከ30-49 ዓመት ዕድሜ ክልል ውስጥ ባሉ ሴቶች ላይ የማኅጸን በር ካንሰርን የመመርመሪያ አጠቃቀምን የሚያጋልጡ ሁኔታዎችን ለመገምገም የእርስዎ ተሳትፎ አስፈላጊ ነው ይህም ለእናቶች የሚሰጠውን የማጣሪያ አገልግሎት ለማሻሻል ይረዳል እና ለእርስዎም በዚህ ፕሮጀክት ውስጥ ለመሳተፍ ምንም ዓይነት የማበረታቻ ወይም ክፍያ አይደረግም ፡፡ ነገር ግን በዚህ ጥናት ውስጥ ላለመሳተፍ በእርስዎ ሊመጡ የሚችሉ አንዳችም ጉዳት የለም ፣ የሚንሰጠውን የጤና እንክብካቤ አይጎዳውም ፡፡

ምስጢራዊነት፡- ከዚህ የምርምር ፕሮጀክት የሚሰበሰበው መረጃ በሚስጥር ይጠበቃል እና ሁሉም መዛግብት እና ሌሎች የተገኙ መረጃዎች በጥብቅ ሚስጥራዊ ይሆናሉ እና የተጠበቀው የጤና መረጃዎ ያለፈቃድ ጥቅም ላይ አይውልም፡፡ እርስዎን ለመለየት የሚያገለግል ማንኛውንም መረጃ ለመጠበቅ ሁሉም የመረጃ መሰብሰቢያ መሳሪያዎች በቁጥር ወይም በሌላ ኮድ ተለይተው ይታወቃሉ፡፡

የተሳተፉዎች ብዛት፡ በድምሩ 219 (73 cases and 146 controls) ጥምርታ 1:2፡፡

በፈቃደኝነት ተሳትፎ፡ በዚህ ጥናት ለመሳተፍ ወይም ለመሳተፍ ፈቃደኛ አለመሆንን መወሰን የእርስዎ ውሳኔ ነው። ይህ ከመርማሪዎቹ ጋር ያለዎትን ግንኙነት አይጎዳውም። ለጥናቱ መረጃ ለመስጠት ፈቃደኛ ከሆንሽ “አዎ” በማለት ፈቃደኛ መሆንሽን ማሳየት ትችላለሽ።

1. አዎ ከሆነ፣ ወደ ቀጣዩ ገጽ 2 ይቀጥሉ።
2. አይደለም ከሆነ፣ አመስግነው፣ ወደ ቀጣዩ ተሳታፊ ይለፉ።

የመረጃ ሰብሳቢው ስም _____ ፊርማ፡----- ቀን፡-----

በዚህ ጥናት ላይ ጥያቄዎች፣ ቅሬታዎች ወይም ስጋቶች ካሉዎት ዋናውን መርማሪ ማነጋገር ይችላሉ።

የዋና መርማሪው አድራሻ፡ ስም አያሌው በላይነህ

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ክፍል ሁለት፡ የስምምነት ቅጽ

ይህንን ሰነድ “በሰሜን አረ ወረዳ ከ30-49 አመት እድሜ ክልል ውስጥ ባሉ ሴቶች ላይ የማኅጸን በር ካንሰር ምርመራ አጠቃቀምን የሚወስኑ ነገሮችን መለየት” በሚል ርዕስ በምደረገው ጥናት ላይ ለመሳተፍ ፈቃዴን በመፈረም እየሰጠሁ ነው። የዚህ ጥናት አላማ በ2023 በሰሜን አረ ወረዳ ውስጥ ከ30-49 አመት እድሜ ክልል ውስጥ ያሉ ሴቶችን የማኅጸን በር ካንሰር ምርመራ አጠቃቀምን የሚወስኑትን ለይቶ ለማወቅ እንደሆነ ተረድቻለሁ። ጥናቱ ሙሉ በሙሉ በፈቃደኝነት ላይ የተመሠረተ ነው ። ለጥያቄዎቹ የእኔ ምላሾች ለሌላ ሰው እንደማይሰጡ ተነግሮኛል እና ምንም የዚህ ጥናት ዘገባ በማንኛውም ጊዜ የእኔን ማንነት ለይቶ አያሳውቅም። የእኔ ተሳትፎ ወይም አለመሳተፍ ወይም ለጥያቄዎች መልስ አለመስጠት በእኔ ላይ ምንም ተጽእኖ እንደሌለው ተነግሮኛል። በዚህ ጥናት ውስጥ መሳተፍ አይጋ እንደሌለው ተረድቻለሁ። ስለ ጥናቱ ወይም የጥናት ተሳታፊ ስለመሆኔ ማንኛውም ጥያቄዎች ካሉኝ አያሌው በላይነህ ተጠሪ እንደሆነ ተረድቻለሁ።

የተሳታፊው ፡ ፊርማ /የጣት አሻራ _____ ቀን _____

የጠያቂው ፡ ስም _____ ፊርማ _____ ቀን _____

የቤቱ መለያ ኮድ ቁጥር ፡ _____

ክፍል አንድ፡ አጠቃላይ የማህበራዊና ግለሰባዊ መረጃዎች				
ኮድ	ጥያቄዎች	መልስ	ይለፉ	ምርምራ
101	ዕድሜዎ ስንት ነው?	_____ በአመት		
102	የትምህርት ደረጃዎ ምን ያህል ነው?	1. መደበኛ ትምህርት የለም 2. ማንበብ እና መጻፍ የሚችል 3. የመጀመሪያ ደረጃ ትምህርት (1-8) 4. የሁለተኛ ደረጃ ትምህርት (9-12) 5. ኮሌጅ እና ከዚያ በላይ		

103	የጋብቻ ሁኔታዎ ?	1. ያገባ 2. የተፋታች 3. የሞተባት 4. ያላገባች		
104	ሃይማኖትሽ ምንድን ነው?	1. ኦርቶዶክስ 2. ፕሮቴስታንት 3. የባህል ሃይማኖት 4. ሙስሊም 5. ሌላ (ይግለጹ) _____		
105	የስራ ሁኔታዎ?	1. የቤት እመቤት 2. ገበሬ 3. ነጋዴ 4. የመንግስት ሰራተኛ 5. የተለየ/የጥቀሱ.....		
106	ወረሃዊ ገቢ ?	_____ በብር		
107	መኖሪያዎ ?	1. ገጠር 2. ከተማ		
108	ብሄሮ ምንድን ነው ?	1. አሪ 2. ባስከቶ 3. ጎፋ 4. የተለየ ካሌ ይጥቀሱ _____		
109	የቤና መድን ተጠቃም ነዎት ?	1. አዎ 2. አይደለም		
ክፍል ሁለት : ከሥነ ተዋልዶ ጤና እና ከግላው ባህሪ ጋር የተያያዙ ምክንያቶች መጠይቅ				
201	የመጀመሪያ የግብረ ሥጋ ግንኙነት የጀመሩት በየትኛው ዕድሜ ላይ ነው?	1. <18 ዓመታት 2. ≥18 ዓመታት		
202	በህይወትዎ ስንት የግብረ ሥጋ ግንኙነት አጋሮች አልዎት?	1. 1 2. ≥2		
203	የመጀመሪያ ጋብቻ የፈጸሙት በየትኛው ዕድሜ ላይ ነው?	1. <20 ዓመት 2. ≥20 ዓመት		
204	በአሁኑ ጊዜ ባልሽ ሌላ ሚስት አለው ?	1. አዎ 2. አይደለም		
205	ስንት ልጆች አልዎት?	1. < 5 2. ≥ 5		
206	ዘመናዊ የወሊድ መከላከያ ተጠቅመው ያውቃሉ?	1. አዎ 2. አይደለም		
207	በሕይወቶ የአባላዘር በሽታ ታሪክ አልዎት?	1. አዎ 2. አይደለም		
208	HIV (ኤችአይቪ) ተመርምረው ያውቃሉ?	1. አዎ 2. አይደለም		
209	መልሶ በኮድ (210) ላይ "አዎ" ከሆነ ውጤቱ ምን ነበር?	1. አዎንታዊ 2. አሉታዊ		
ክፍል 3: የማኅጸን በር ካንሰር ምርመራ ዕውቀት ጋር የተያያዘ ምክንያቶች በተመለከተ መጠይቅ				
ኮድ	ጥያቄዎች	ምላሽ	ይለፉ	አስተያየት

301	የማጎጸን በር ነቀርሳ ስባል ሰምተዋል?	1. አዎ 2. አይደለም		
302	የመረጃ ምንጭ ?	1.ከጤና ባለሙያ 2. ከተለሺዝን/ሬዲዮ 3. ከቤተሰብ 4. ከጓደኞች 5. ከሌሎች ----		
303	የማጎጸን ነቀርሳ ምልክቶች	1. ከማጎጸን ደም መፍሰስ 2. ከማጎጸን መጥፎ ሽታ ያለው ፈሳሽ 3. ከግብረ ሥጋ ግንኙነትን በኃላ ደም መፍሰስ 4. አላውቅም		
304	ለማጎጸን በር ካንሰር የሚያጋልጡ ሁኔታዎችን ያውቃሉ? "ከአንድ በላይ መመለስ ይቻላል"	1.ከአንድ በላይ የግብረ ሥጋ አጋሮች መኖር 2. ያለ እድሜ ግብረ ሥጋ ግንኙነትን መጀመር 3. ሲጋራ ማጨስ 4. HPV በምባል ቫይረስ መጠቀስ 5. በአባላዘር በሽታ መያዝ 6.ብዙ ልጅ መውለድ 7. ዘመናዊ የወሊድ መከላከያ መጠቀም 8. በቤተሰብ የማህፀን በር ካንሰር ታሪክ 9. እኔ አላውቅም		
305	የማህፀን በር ካንሰርን እንዴት መከላከል ይቻላል?	1. ከአንድ በላይ የወሊብ አጋር አለመያዝ 2. ያለ እድሜ የግብረ ሥጋ ግንኙነትን አለማድረግ 3. ማጨስን በማስወገድ 4. HPV የምባል ቫይረስ ክትባት መከተብ 5. እኔ አላውቅም		
306	የማህፀን በር ካንሰር በመጀመሪያዎቹ ደረጃዎች ላይ ሊድን ይችላል?	1.አዎ 2. አይደለም 3. አላውቅም		
307	የማህፀን በር ካንሰር ያለበት ሰው እንዴት ሊታከም ይችላል?	1.ከዕፅዋት የተቀመሙ መድኃኒቶችን በመጠቀም 2. በቀዶ ጥገና 3. ከሆስፒታል በሚሰጡ የካንሰር መድኃኒቶችን በመጠቀም 4.በጨረረ ህክምና 5. አላውቅም		
308	እዚህ አገር የማጎጸን በር ካንሰር ህክምና ምን ያህል ውድ ነው ብለው ያስባሉ?	1.ከክፍያ ነጻ ነው 2. ዋጋው ተመጣጣኝ ነው 3. በመጠኑ ውድ ነው 4. በጣም ውድ ነው 5. አላውቅም		
309	የማህፀን በር ካንሰር ምርመራ እንዳለ ያውቃሉ?	1.አዎ 2.አላውቅም		
310	መልሶ በኮድ (309) ላይ "አዎ" ከሆነ ምርመራው ምን ያህል በተደጋጋሚ ይከናወናል ?	1.በዓመት አንድ ጊዜ 2. በየሦስት ዓመቱ አንድ ጊዜ 3. በየ 5 ዓመቱ አንድ ጊዜ 4. አላውቅም		
	የማጎጸን በር ካንሰርን ለማጣራት	1.VIA ምርመራ 2.HPV ምርመራ		

311	ከምያገለግሉ ዘዴዎች አንዱን መጥቀስ ትችላላሽ ?	3. Pap Smear/Cytology ምርመራ 4. አላውቅም				
ክፍል አራት፣ ተሳታፊዎች የማኅጸን በር ካንሰር ምርመራ አጠቃቀምን በተመለከተ ያላቸው አመለካከት						
ኮድ	ባህሪያት	በጣም አልስማማም (1)	አልስማማም (2)	ገለልተኛ (3)	እስማማለሁ (4)	በጣም እስማማለሁ (5)
401	በህይወትዎ ውስጥ የማህፀን በር ካንሰር ሊያዘን ይችላል ብለው ያስባሉ ?					
402	የማህፀን በር ካንሰርን በየጊዜው መመርመር የማህፀን በር ካንሰርን ጭንቀት ይቀንሳል።					
403	መደበኛ የማህፀን በር ካንሰር ምርመራ ማድረግ ቀደም ብሎ የማህፀን በር ካንሰር ለመለየት ምርጡ ዘዴ ነው።					
404	መደበኛ የማህፀን በር ካንሰር ምርመራ ማድረግ በማህፀን በር ካንሰር የመሞት እድልን ይቀንሳል።					
405	መጥፎ ውጤትን በመፍራት የማኅጸን ነቀርሳ ምርመራ ለማድረግ እፈራለሁ።					
406	የማህፀን በር ካንሰር ምርመራ የት እንደሚደረግ አላውቅም።					
407	በጀርባ በመተኛት የግል አካላቶችን በማሳየት የማኅጸን በር ካንሰር ምርመራ ለማድረግ አፍራለው።					
408	የማህፀን በር ካንሰር ምርመራ ማድረግ ብዙ ጊዜ ይወስዳል።					
409	የማህፀን በር ካንሰር ምርመራ ማድረግ በጣም ያማል።					
410	በህይወትዎ ውስጥ የማኅጸን ነቀርሳ ምርመራ ከማድረግ የበለጠ አስፈላጊ የሆኑ ሌሎች ችግሮች አሉብዎት።					
411	በጣም ካረጀው በኋላ በየጊዜው የማህፀን በር ካንሰርን መመርመር አለብን።					
412	የማህፀን በር ካንሰር ምርመራ ለማድረግ ለቤትዎ ቅርብ የሆነ የጤና ጣቢያ የለም።					
413	የመመርመራው ቦታዎች እኔ ከምኖርበት ቦታ በጣም የራቁ ናቸው።					
414	የማህፀን በር ካንሰር ምርመራ ለማድረግ የሴት ጤና ባለሙያ ይመርጣሉ።					

ስላደረጉት ተሳትፎ ከልብ እናመስግናለን !!!!

ANNEX –III: Letter of Ethical Clearance and Support Request

Letter of Ethical Clearance

ሀዋሳ ዩኒቨርሲቲ
ህክምናና ጤና ሳይንስ ኮሌጅ
የምርምር ስነ-ምግባር ገምገሜ ፅርድ



HAWASSA UNIVERSITY
COLLEGE OF MEDICINE AND
HEALTH SCIENCES
Institutional Review Board

Ref. No: IRB/301/15
Date: 25/04/2023

Name of Researcher(s): Ayalew Belayneh, Alemach Kabeta (PhD, asst. prof.), Bereket Beyene (Asst. prof.)

Topic of Proposal: *Determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, south omu zone, southern nations nationality people region, Ethiopia, 2023*

Dear researcher(s),

The Institutional Review Board (IRB) at the College of Medicine and Health Sciences of Hawassa University has reviewed the aforementioned research protocol with special emphasis on the following points:

- Are all principles considered?
 - 1.1. Respect for persons: Yes ☒ No ☐
 - 1.2. Beneficence: Yes ☒ No ☐
 - 1.3. Justice: Yes ☒ No ☐
2. Are the objectives of the study ethically achievable? Yes ☒ No ☐
3. Are the proposed research methods ethically sound? Yes ☒ No ☐

Based on the aforementioned ethical assessment, the IRB has:

A. Approved the proposal for implementation

B. Conditionally Approved

C. Not Approved

☒ Approval period -25 April 2023 to 24 April 2024

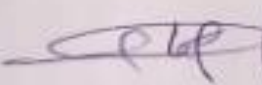
☐ Element Approved: Protocol Version No. 1

☐ Follow up report expected in 6 months

Obligation of the PI:

- Should comply with the standard international and national scientific and ethical guidelines
- All amendment and changes made in protocol and consent form needs IRB approval
- The PI should report SAE within 3 days of the event
- End of study, including manuscript should be reported to the IRB

Yours faithfully,




Dr. Emballe Mengistie (Ph.D., Asst. Prof.)
Chairperson, Institutional Review Board

Letter of Request for Cooperation to North Ari District from Hawassa University College of Medicine and Health Sciences School of Nursing

ሀዋሳ ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ ነርሲንግ ት/ቤት		Hawassa University College of Medicine and Health Sciences School of Nursing
		Ref No ቁጥር <u>MIS/152715</u> Date ቀን <u>19/08/15</u>
ለሰሜን አሪ ወረዳ ጤና ጽ/ቤት ጉዳዩ፡ ትብብር አንድደረግላቸዉ ስለመጠየቅ ይሆናል ተግባሩ አያለ። በላይኛው በትምህርት ክፍላቸን በ2ተኛ ደግሞ Adult Health nursing ተግባሩ ሲሆኑ የመመረቂያ ተናታቸዉን "Determinants of cervical cancer screening utilization among women aged 30-49 years old in the north Ari district, south Omo zone, southern nations nationality people region, Ethiopia, 2023" በማለል ርዕስ ለማጥናት መረጃ ስለመፈለጉ በአካላት በኩል አስፈላጊዎን ትብብር ታደርጉላቸዉ ዘንድ በትኩረት አንጠይቃለን፡፡		
ከሀሳብዎታ ጋር፤		
		
☎ +251462121800	Fax + 046 2208753 1560 Awassa, ETHIOPIA	