Knowledge, Attitude and practice of Cervical Cancer Screening and Associated Factors among Reproductive-age Women in the Jimma Town, Southwest Ethiopia:

A community-based Cross-sectional Study.

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Abstract

Background: Cancer is a disease in which cells in the body grow out of control. Cancer is always named for the part of the body where it starts, even if it spreads to other body parts later. Cervical cancer is one of the commonest cancers of women. It represents about 12% of all cancers in females, and more than half of them die from it. Rising evidences claims that screening programs are effective in reducing morbidity and mortality from the disease. To date researches are not conducted entirely on community based and are not included the three domains, hence the current study will investigate reaching the community to identify the KAP of cervical cancer screening among reproductive age women in the study area.

Objectives: The study is aimed to assess the level of knowledge, attitude, and practice of cervical cancer screening and associated factors among reproductive-age women in Jimma town, South West Ethiopia.

Method: Community based cross-sectional study was employed among 1238 selected reproductive age women in Jimma Town selected Keble. Systematic random sampling was employed using calculated k interval. Data was coded and entered in to Epi-Data version 3.1 then cleaned and exported to SPSS version 20 for analysis. Nine hundred five (905) reproductive-age women participated in the study making the response rate 99.67%. Uneducated woman, a woman who completed primary education, and a woman who completed secondary education was 93 % (AOR=0.07; 95% CI: 0.02-0.21), 89% (AOR=0.11; 95% CI: 0.04-0.26), and 71% (AOR=0.29; 95%CI: 0.14-0.63) less likely to have good knowledge of cervical cancer as compared to a woman who completed a higher education respectively. The odds of good knowledge of cervical cancer among the women who married at their age of greater than or equal to 18 years was 2.15 (AOR=2.15; 95% CI: 1.27-3.64) times more likely than the odds of good knowledge of cervical cancer among the women who married at their age of less than 18 years.

Conclusion and Recommendation: Knowledge and practice of cervical cancer is low. Educational status, age Antenatal care follow up, distance from health facility are significant variables. Increase awareness and practice of cervical cancer screening services crucial.

Keywords: Cervical cancer, cervical cancer screening, Reproductive age women Jimma town

Declaration

I the undersigned declare that this thesis is my original work has not been presented for a degree in this or any other University and that all sources of materials used for the thesis have been fully acknowledged.

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Table of content

List of Abbreviations and Acronym

ANC- Antenatal care

ASIR- Age- standardized incidence rate

FP- Family Planning

FGA- Family Guidance Association

GLOBOCAN- Global Cancer Observatory

HPV- Human papilloma virus

HIV-Human immune deficiency virus

KAP- Knowledge, Attitude and Practice

NGO-Non Governmental Organization

OPD-Outpatient department

PNC-Postnatal care

RH-Reproductive Health

LMIC- Low and middle income countries

STI- Sexually transmitted infection

VIA-Visual Inspection with Acetic acid

Chapter one

Introduction

Back ground of the problem

There are five main types of cancer that affect a woman's reproductive organs: cervical, ovarian, uterine, vaginal, and vulva. As a group, they are referred to as gynecologic cancer. (A sixth type of gynecologic cancer is the very rare Fallopian tube cancer) (1).

Cancer is a disease in which cells in the body grow out of control. Cancer is always named for the part of the body where it starts, even if it spreads to other body parts later (1).

When cancer starts in the cervix, it is called cervical cancer. The cervix is the lower, narrow end of the uterus. The cervix connects the vagina (the birth canal) to the upper part of the uterus. The uterus (or womb) is where a baby grows when a woman is pregnant. Cervical cancer is the easiest gynecologic cancer to prevent with regular screening tests and follow-up. It also is highly curable when found and treated early (2).

Cancer of the cervix is the second most common cancer among women worldwide, with about 500,000 new cases diagnosed and over 250,000 deaths every year. In low- and middle-income countries (LMIC), including Ethiopia, cervical cancer is the commonest cancer affecting reproductive organs and also the leading cause of death from cancer among women. In 2010, it was estimated that 20.9 million women were at risk of developing cervical cancer in Ethiopia with an estimated 4,648 and 3,235 annual numbers of new cases and deaths, respectively (3).

All women are at risk of cervical cancer. It occurs most often in women over age 30. The majority of cancers (over 80%) in sub-Saharan Africa are detected at a late stage, predominantly due to lack of information about cervical cancer and a dearth of prevention services. Late-stage disease is associated with low survival rates after surgery or radiotherapy. In addition, these treatment modalities may be lacking/limited, or too expensive and inaccessible, for many women in low-resource countries, including Ethiopia (3).

Cervical cancer is potentially preventable, unlike other reproductive organ cancers. Effective screening program can lead to significant reduction in morbidity and mortality associated with

this cancer. In high-income countries, regular screening with a Pap smear has been shown to lower the risk for developing invasive cervical cancer, through detecting precancerous changes (4).

Most women who die from cervical cancer, particularly in developing countries, are in the prime of their lives. They may be raising children, caring for their families and contributing to the social and economic lives of their towns and villages. A woman's death is both a personal tragedy and a sad and unnecessary loss to her family and her community, with enormous repercussions for the welfare of both. These deaths are unnecessary because there is compelling evidence that cervical cancer is one of the most preventable and treatable forms of cancer if it is detected early and managed effectively (5).

Per different school of thought worry cervical cancer remains a major public health problem and cause of morbidity and mortality among the women in the world. Early screening for cervical cancer is a key intervention in reduction of maternal deaths, the back bone to promote screening identifying the barriers and assessing whether the candidate's woman have the knowledge or not.

Statement of the problem

Cervical cancer in low- and middle-income countries (LMIC) accounted for approximately 85% of the 528 000 new cases diagnosed globally in 2012.In the same year, approximately 87% of the 266 000 deaths from cervical cancer worldwide occurred in LMIC (6). The figure clearly illustrates the disproportionately heavy burden of cervical cancer faced by communities, families, and women in less developed regions.

While in 2018 the report updates to approximately 570 000 cases of cervical cancer and 311000 deaths from the disease. Globally, the average age at diagnosis of cervical cancer was 53 years, ranging from 44 years and the global average age at death from cervical cancer was 59 years, ranging from 45 years this labels Cervical cancer to be a major public health problem affecting middle-aged women, particularly in less-resourced countries. The global scale-up of HPV vaccination and HPV based screening including self-sampling has potential to make cervical cancer a rare disease in the decades to come (7).

Women living in LMIC who are at highest risk are typically aged between 30 and 49 years. The tragedy of death or illness due to cervical cancer during what should be some of the most productive years in a women life is compounded by the knowledge that most cases are both preventable and treatable when identified early (5).

Consistent evidence indicates that key drivers of the disparate burden are the numerous challenges encountered in the development and implementation of effective and sustainable strategies for cervical cancer prevention and control. Lack of policies and programs for cervical cancer; lack of timely and reliable data; lack of resources; and lack of coordination are all common barriers to comprehensive cervical cancer prevention and control in LMIC (7).

In addition to the impact of these barriers on availability and accessibility of preventive services, women in LMIC frequently must contend with gender bias and cultural and societal norms which further restrict their ability to access services and make decisions about their health. Projections warn that without urgent attention, incidence of cervical cancer can be expected to rise by almost 25% in the next 10 years (7).

Cancer burden continue to grow globally even though detecting cancer early can effectively reduce the mortality associated with cancer. In resource-poor settings, cancer is often diagnosed at a late-stage of disease resulting in lower survival and potentially greater morbidity and higher costs of treatment. Even in countries with strong health systems and services, many cancer cases are diagnosed at a late-stage. Addressing delays in cancer diagnosis and inaccessible treatment is therefore critical in all settings for cancer control (8).

Literature found out that one of the contributing factors associated with screening compliance was information deficits regarding patients' knowledge of the disease. In addition, study findings revealed that knowledge, attitudes, and beliefs about the Pap test may be associated with actual participation in cervical cancer screening and also high lights that women knowledge and beliefs about Pap tests were shown to be the strongest predictors of repeated screening (9).

Early diagnosis strategies improve cancer outcomes by providing care at the earliest possible stage and are therefore an important public health strategy in all settings. The barriers that delay cancer diagnosis must first be identified and assessed, and these factors may originate from

patients to careers to health systems. Effective programs can then be implemented at various levels that include community engagement to address patient behavior, improving diagnostic and referral capacity and ensuring access to timely, high-quality treatment.

Significance of the study

Screening is found to be the fundamental measure of cervical cancer prevention and has been demonstrated by reduced incidence and mortality. However, in spite of routine screening efforts, a woman's decision to undertake screening or not is influenced by various factors, including health beliefs, Knowledge, attitudes, and cultural barriers. Thus, it is a significant challenge for health care providers to explore the traditional health beliefs that may influence a woman's health decision making, the extent of cultural preservation with male dominance and the effects of other environmental and societal factors on reproductive health attitudes, knowledge, and practices regarding cervical cancer and prevention. The current study will try to explore Ethiopian women health beliefs and attitudes regarding cervical cancer and screening. The findings from this study may assist Ethiopian health care providers in gaining insight and a deeper understanding of cultural implications and barriers that may prevent women from seeking early screening. Information from the current study may not only have the potential to assist health care providers, but it may also help all health care providers to tailor preventative programs that are culturally sensitive and thereby increase cervical cancer screening compliance, resulting in a decrease of morbidity and mortality in women.

Chapter Two: Literature review

Cervical cancer is a malevolent neoplasm of the cervix, uterus or around. Symptoms may be present or absent until the cancer reaches its advanced stage. Usually present with vaginal bleeding (10). Cancer is a serious health problem rising on the global health and development agendas in all populations, regardless of wealth or social status though for many years it was considered a disease of wealthy countries. The global response to cancer has been uneven and inequitable. Most low- and middle-income countries (LMIC) started later to address the cancer burden, having made hard choices to concentrate limited resources on an enormous burden of infectious diseases (11). Studies Claim that more than 311 000 women die of cervical cancer

each year, and that 91% of these deaths occur in low and middle-income parts of the world (12). Demographic changes, ageing and lack of action mean that the number of deaths per year is projected to reach 460 000 by 2040 (13). The highest burden is found in sub-Saharan Africa, Central and South America, East Africa, South and South-East Asia, and the Western Pacific (14).

2.1 Knowledge attitude and Practice towards Cervical Cancer screening

The study conducted among rural women in Eastern China on Knowledge and Attitude towards cervical cancer screening indicates that the mean knowledge scores of the screened group (258 women) and the un screened group (147 women) were 9.29 ± 2.64 (range from 3 to16 score) and 5.03 ± 4.71 (range from 0 to 15 score), respectively. Concerning attitude of the women, although the vast majority (96.0%) of women expressed a positive attitude towards cervical cancer screening, only 258 (67.3%) of participants indicated that they had previously undergone cervical cancer screening (15).In systematic review conducted in India on Knowledge, Attitude and Practice (KAP) towards Cervical Cancer screening, a total of 17 studies were included in the review with a total of 6158 women aged between 15-70 years having varied levels of knowledge, attitude & practice towards cervical cancer screening; 42.22% women had knowledge about the screening process. More than half of the participants showed positive attitude towards the cervical cancer screening (59.97%). The overall knowledge on cervical cancer screening among the women was 42.22%. The overall attitude and practice on cervical cancer screening was 59.97% and 13.26% respectively. Only 13.26% had undergone the cervical cancer screening (16).

Similarly, in the study conducted in Saudi Arabia on KAP towards cervical cancer screening among female health care workers, many of the participants were not knowledgeable about cervical cancer. Only 8.9% of the sample knew that multiple sexual partners placed a woman at risk for cervical cancer. Women older than 50 years of age are at higher risk, yet only 8.6% of the sample had that knowledge. It is crystal clear that in advanced stages of cervical cancer, sign and symptoms a woman may experience are vaginal bleeding, foul-smelling vaginal discharge, and contact bleeding. However, a majority of the participants were lacking knowledge (93%, 92%, and 87%), respectively. As for preventing cervical cancer, 90% of the participants were unaware of the major behaviors one could do or avoid to prevent cervical cancer. Majority of the

participants did not have knowledge about the different ways of screening for cervical cancer. With regard to attitude of participants more than three-fourths of the participants (84.8%) disagreed with the statement "screening helps in prevention of carcinoma of the cervix". Overall, only 15 (3.8%) respondents agreed that they would have screening done if it was free and caused no harm. On the subject of practice although 343 (86.8%) participants believed that Pap smear test is a useful test for detection of cervical cancer, only 103 (26.2%) participants had undergone Pap smear testing. Further, 18.7%, 43.8%, and 29.6% of the participants believed that Pap smear test should be started at the age of 20 years, 30 years, and after menopause, respectively. Sixty-three percent of the respondents agreed that the best time for a Pap smear test is a week after period, and 76.2% believed that Pap smear testing should be done by a doctor. Also, 78.9% of the respondents agreed that further tests should be done if any abnormality is detected in Pap smear test (17).

In the study conducted in Bahrain on KAP regarding cervical cancer and screening among women visiting primary health care centers nearly 65% (194) had heard about the Pap smear. The main source of information was from a gynecologist (51.5%) followed by relatives and friends (18%), the media (13.4%), family physicians (12.4%), and nurses (3.6%). Approximately 64% (192 participants) believed that the Pap smear was helpful in detecting pre-cancers and cancer of the cervix, 44.3% (133) believed that they should have a Pap smear at least every 3 years, and 67.7% (203) knew that the purpose of the Pap smear was to detect abnormal cells in the cervix. Nevertheless, 10% (30) believed that the Pap smear is not successful in reducing the incidence and mortality of cervical cancer. Approximately 59% (117) of the respondents believed that the Pap smear is non-invasive. Around 33.7% (101) thought that women should have Pap smears from the onset of their sexual activity, and 34.3% (103) thought that Pap smears could not be performed during menstrual periods and agreed that women should not have sex 24 hr. before having a Pap smear. Only 8.7% (26) believed that a Pap smear should be discontinued after menopause. Regarding the HPV vaccine, only 3.7% (11) had heard about the vaccine, and the majority (289; 96.3%) either had not heard or did not know about the HPV vaccine (18).

Moreover, concerning Pap smear practice, only 40.7% (122) had undergone a Pap smear in their lifetime, 45.5% preferred to have it done at a Gynecology clinic, and 16.4% preferred to have a Pap smear done in a Primary Health Care Centre. The majority (250; 83.3%) felt embarrassed if

a male doctor performed the test and only 23.0% (69) would go for screening if they were unmarried. Nearly half of participants (146; 48.7%) had a fatalistic attitude, and 35.7% (107) felt that the Pap smear procedure was unpleasant or embarrassing, while 19.3% (58) thought it was painful. Approximately 55% (165) of the women in this study were uneasy when talking about cancer and 72.3% (217) would be very worried if they were diagnosed with early signs of cancer. Regarding the HPV vaccine, 81.8% (245) would be vaccinated, and 90.9% (273) would allow their children to be vaccinated against HPV (18).

Identically in the study conducted in Isiolo and Tharaka Nithi counties, Kenya on Women knowledge and attitudes related to cervical cancer and cervical cancer screening, 79.8% (360/451) of the study participants were aware of cervical cancer, and 15.1% (68/451) had heard of HPV. Among those who were aware of cervical cancer, 83.6% (301/360) had heard of cervical cancer screening and 25.6% (92/360) had undergone a cervical cancer screening examination. Those who were aware of cervical cancer reported that their primary sources of information were from family or friends (45.0%, n = 162), a health care facility (40.3%, n = 145), radio/television (40.6%, n = 146), and less than 6.0% (n = 20) stated social media, newspaper or a non-governmental organization. Almost all (89.2%) of those who had heard of cervical cancer categorized it as “scary”. Over half of the women responded that “cervical cancer would threaten a relationship with her husband, boyfriend or partner” (56.7%) and also preferred a female health worker to conduct a cervical examination (55.8%). Nearly two-thirds (61.4%) of respondents perceived the examinations to be positive and believed that “health care workers performing cervical examinations are not rude to women (19).

In study conducted on Comprehensive knowledge and attitude towards cervical cancer its screening among women aged 30–49 years in Finoteselam town, northwest Ethiopia, nearly one third, 30.3% (95%CI: 27.7, 32.9) of the women had knowledge of cervical cancer, and 58.1% (95% CI: 55, 62.2) had a favorable attitude towards cervical cancer screening (20).

The study conducted on Knowledge and practice of cervical cancer screening among reproductive age group women in districts of Gurage zone, Southern Ethiopia find outs that majority (83.8%) of respondents had heard about cervical cancer. About 76.9% of respondents didn’t know any cervical cancer symptoms. Whereas 8.8%, 5.0%, 5.0%, and 0.4% of

respondents believed that having multiple sexual partners, initiation of sexual intercourse at an early age, cigarette smoking, and acquiring human papilloma virus (HPV) respectively were the major risk factors for cervical cancer. All most all (97.7%) of the respondents didn't know any methods of cervical cancer screening. The majority (56.0%) of respondents have acquired information about cervical cancer screening from mass-medias. The mean score and standard deviation of respondents' knowledge about cervical cancer screening were 39.38and ± 7.788 respectively. The result revealed that; 26.2% of respondents were knowledgeable on cervical cancer screening. Furthermore, Practice of cervical cancer screening in the study area shows that only 3.8% of respondents were screened for cervical cancer and the majority (53.2%) of respondents said that the barrier to having cervical cancer screening was a lack of health education programs to promote screening and 11.6% revealed that the screening place is too far from the place where they live (19).

Study conducted on Knowledge, Attitude and Practice Towards Cervical Cancer Screening Among Women and Associated Factors in Hospitals of Wolaita Zone, Southern Ethiopia also showed that approximately 154 (43.1%) of women had good knowledge, 235 (45.5%) had a favorable attitude, and nearly a quarter (118; 22.9%) had been screened for cervical cancer (38).

On top of that in the study conducted in Oromia region Adama town among women living in Adama town on Cervical Cancer and Screening Method: Knowledge, Attitude and Practice out of 390 participants, 329(84.4%) reported that they have heard about cervical cancer before. From these, 183(46.9%) of them said that their source of information about cervical cancer was mass media, whereas 44 (11.3%) of them were from health professionals. Of 329 participants, 152 (46.2%) of them knew about cervical cancer risk factors. Women who knew prevention methods of cervical cancer were 196 (59.6%). Most of them didn't know cervical cancer can be cured at early stage, 205(62.3%). Women who knew cervical screening method were 215(65.3%). Majority of participants knew sign and symptoms of cervical cancer, 250(76%). Knowledge was assessed using 8 items questions regarding cervical cancer and 160(48.6%) of study participants had a good knowledge whereas 169(51.4%) had a poor knowledge toward cervical cancer. It was found that women who had positive attitude toward cervical cancer were 232(70.5%). Of 53 women who were screened for cervical cancer, 36 (67.7%) of them were women who had

positive attitude toward cervical cancer and screening method. Of 329 study participant's women who were screened for precancerous cervical lesion by VIA were 53 (16.1%) (21).

2.2 Factors Associated with Knowledge Attitude and Practice of Cervical Cancer Screening

2.2.1 Factors Associated with knowledge of Cervical Cancer Screening

In the study conducted in China Age, educational level and family income were significantly associated with a higher knowledge level (15). While in systematic review conducted in India and abroad showed significant association between the knowledge of cervical cancer screening and the education level of study participants, marital status, family Income and Occupational status (16). In study conducted in Saudi Arabia younger age was significantly associated with the higher odds of having fair to good knowledge (17). Bahrain study implies that married women, knowledge concerning the Pap smear, use of the Pap smear and positive attitudes towards the Pap smear were significantly more associated than their counterparts (18). Kenyan study shows that employment status and country of origin were significant predictors of knowledge (19). In the study conducted in finoteselam educational status, knowing someone with cervical cancer, and history of STD were significantly associated with comprehensive knowledge score of cervical cancer (20). From the study conducted in Gurage zone the following are factors associated with knowledge illiterate/uneducated respondents have poor knowledge while having plans to screen cervical cancer, family history of cervical cancer, menarche age, and age at first sex were significantly associated with good knowledge (19). Furthermore, the study conducted in Wolaita zone among women revealed that age, educational status, and residence were significantly associated with knowledge of cervical cancer screening and also having knowledge with cervical cancer, knowing someone with cervical cancer and those women source of information from the health professional and community, age of first sex, were associated with cervical cancer screening knowledge (20).

2.2.2. Factors Associated with Attitude of Cervical Cancer Screening

In similar fashion in the study conducted in china Educational level was the only factor found to be significantly associated with positive attitudes (28). Educational status reached significance only with attitude, whereby more educated women believed that a Pap smear was necessary even

in the absence of signs and symptoms in Study done in Bahrain (31). Finote selam study showed that the following factors are significantly associated with the attitude of cervical cancer screening: educational status, knowing someone with cervical cancer and comprehensive knowledge about the diseases (33). Study conducted in Hawassa University Female medical and health science students shows that age, year of study, religion, knowledge on importance/benefits of cervical cancer screening, knowledge about cervical cancer and knowledge about HPV of respondents were significantly associated with the attitude towards cervical cancer screening (19). Analysis of our result of Wolaita zone found that knowledge of cervical cancer, marital status, and monthly income was associated with attitude towards cervical cancer screening (20).

2.2.3 Factors Associated with Practice of Cervical Cancer Screening

In systematic review conducted in India and abroad the most common reason for not undergoing screening was no signs & symptoms (32.78%) followed by no knowledge (28.21%) and majority of the women think that they are healthy so there is no need for undergoing screening of cervical cancer (16). The study conducted in Gurage zone implies that Age at first sex, having information about cervical cancer and having multiple sexual partners were significantly associated with the practice of cervical cancer screening (19). With regard to practice the Wolaita study reveal that age of participants are significantly associated with practice of cervical cancer screening which means women age group 30–34 were seven times more likely to have good practice in cervical cancer screening compared with women 45–49years of age and educational status, Women who had known someone diagnosed with cervical cancer, monthly income variables are also associated with practice of cervical cancer screening in the study area (20).

Barriers to cervical cancer screening

The study conducted in Ghana among rural women find out different levels of barriers like the Individual-level, barriers which include low awareness of screening and screening facilities, personal factors, screening procedure and low income. The study also high lights that knowledge

about cervical cancer and where one could obtain a screening service is quite important to the uptake of screening and treatment of the disease. Thus, the study showed low awareness of screening services as a major barrier to the uptake of cervical cancer screening, Institution level, Community level and policy level barriers are also mentioned (21).

The other study conducted among uninsured women indicates that majority of respondents identified cost as a barrier to receiving screening (61.6%). More than half of the respondents (53.1%) agreed that finding cancer was a barrier to Pap screening. Anxiety about the procedure was the third most commonly agreed-upon barrier (38.7%). Feelings of embarrassment (25.6%), anticipation of pain (23.6%), and the presence of a male physician (19.7%) were identified as barriers by one-quarter or less of the women. Fewer than 20% identified lack of knowledge (18.8%), language barriers (18.3%), and other health problems (16.5%) as potential hindrances to cervical cancer screening. Forgetting to schedule an appointment (14.9%), and lack of time (13%) were identified as barriers by relatively few of the participants (22).

Literatures claim that barriers to cervical cancer screening contribute to disparities in cervical cancer screening rates and barriers are broadly divided into personal and structural impediments (23, 24). Personal barriers explored in literature include fear of finding cancer (23, 25), embarrassment (23) lack of knowledge of risk factors (26, 27), screening by a male physician (10) presence of chronic diseases (28). Other studies have examined structural barriers such as cost, taking time off work, lack of transportation (10).

Conceptual frame work

Conceptual frame work developed after review of different literature for Knowledge, attitude and beliefs towards cervical cancer screening in south west Ethiopia.

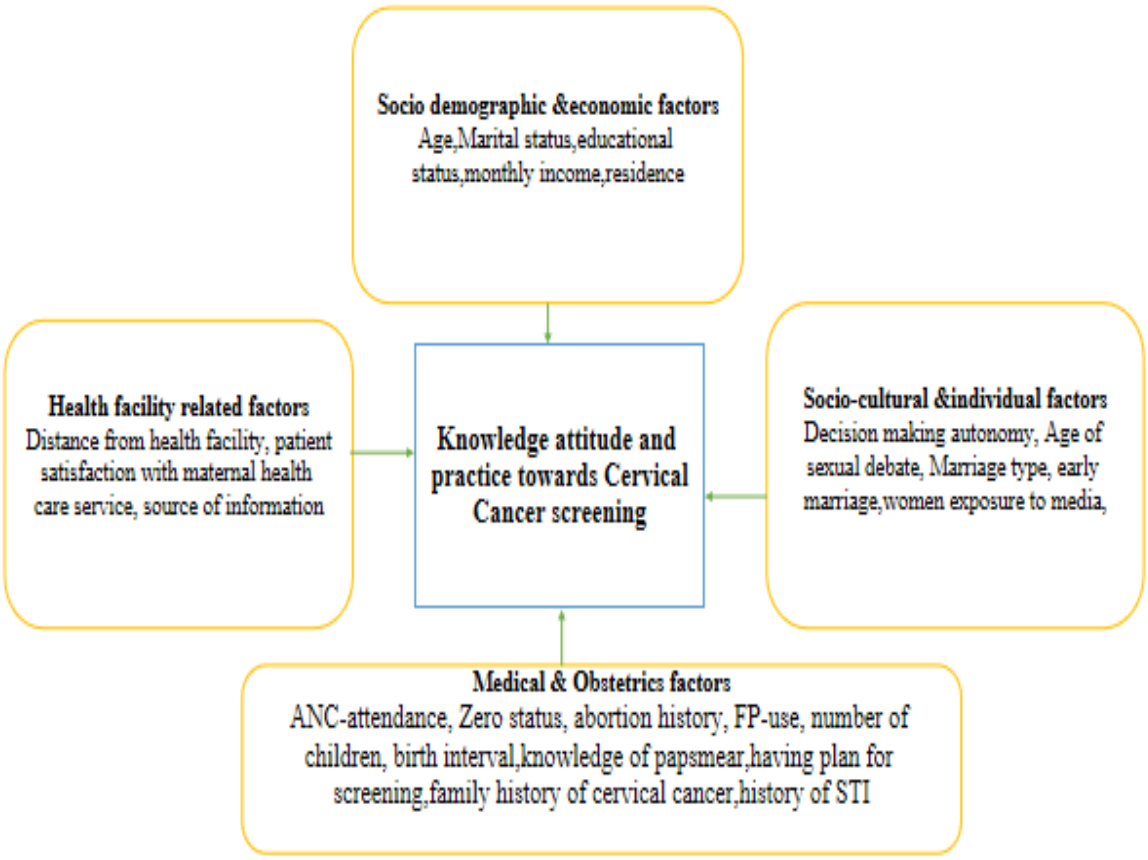

Figure 1: Conceptual frame for knowledge attitude and beliefs towards cervical cancer screening developed after review of different literature.

Chapter Three: Objective

General Objective

To assess Level of knowledge, attitude, and practice of cervical cancer screening and associated factors among reproductive-age women in Jimma town, South West Ethiopia, 2020

Specific objectives

To assess level of knowledge of cervical cancer screening among reproductive-age women in Jimma town, South West Ethiopia, 2020.

To assess attitude towards cervical cancer screening among reproductive-age women in Jimma town, South West Ethiopia, 2020.

To assess prevalence of cervical cancer screening practice among reproductive-age women in Jimma town, South West Ethiopia, 2020.

To identify factors associated with cervical cancer screening knowledge, attitude and practice among reproductive-age women in Jimma town, South West Ethiopia, 2020.

Chapter Four: Methods and Materials

4.1 Study area and period:

The study was conducted in Jimma town South West Ethiopia located 352 km from the capital Addis Ababa. Jimma zone is renewed for the coffee production in large. The study conducted in selected Keble, Jimma town, had 13 Keble namely Ginjo, Awetu mandara, Mandara qocii, Busaaddis katama, Ginjo guduruu, Hirmataa mantina, Bacho bore, Hirmataa, Hirmataa markatoo, Saxoo samarro, Mantina, Busaa kitoo and Jireeen. Four Keble's: Ginjo, Bacho bore, Saxoo samaroo, and Ginjoo guduruu are randomly selected for the study.

4.2 Study design

Community-based cross-sectional study was employed.

4.3 Population

4.3.1 Source population: All reproductive-age women residing in the Jimma town.

4.3.2 Study population: Selected reproductive-age women in the Jimma town

4.4: Inclusion and exclusion criteria:

4.4.1: Inclusion criteria: All reproductive-age women who have lived in the Jimma town for more than six months

4.4.2: Exclusion criteria: Severely ill women who are unable to respond to question

4.5: Sample size determination and sampling technique

4.5.1: Sample size determination:

For the first specific objective sample size was calculated using Epi-Info version 7 software using the following assumptions; 26.2 % proportion of reproductive-age women who had good knowledge of cervical cancer screening based on the community-based cross-sectional study done in the Gurage zone, southern Ethiopia (19N), 95% confidence interval, an 3% margin of error. Accordingly, the calculated sample size was 825 reproductive-age women. Then by adding 10% non-response rate the final sample size is 908 reproductive age women.

The sample size for the analytical objective was calculated using Epi-Info version 7.1 using the following assumptions; 95% two-sided confidence interval, 80% power, a one-to-one ratio of reproductive-age women with poor knowledge of cervical to reproductive-age women with good knowledge of cervical cancer, proportion of control exposed, and adjusted odds ratio that is summarized in the following table.

Table 1: Sample size determination, 2022

Variable	Exposed category	CI	Power	Prevalence of exposure among reproductive-age with poor knowledge of cervical cancer	Adjusted OR	Sample size	Reference
Educational status	Illiterate	95%	80%	93.7%	15.5	298	Endalew DA, et al, 2020

Family history of cervical cancer	Yes	95%	80%	31.8%	14.16	26	Endalew DA, et al, 2020
Age at first sexual debut	15-17 years	95%	80%	57.1	3.17	120	Endalew DA, et al, 2020

Based on the above sample size calculations, the sample calculated for the first specific objective is larger than all of the sample sizes calculated for the second specific objective. Therefore, 908 reproductive-age women included in the study.

4.5.2 Sampling techniques

Jimma town has thirteen Keble's (the lowest administrative unit in Ethiopia): Ginjo, Awetu mandara, Mandara qocii, Busaaddis katama, Ginjo guduruu, Hirmataa mantina, Bacho bore, Hirmataa, Hirmataa markatoo, Saxoo samarro, Mantina, Busaa kitoo and Jireeen. Four Keble's: Ginjo, Bacho bore, Saxoo samaroo, and Ginjoo guduruu are randomly selected for the study. Number of households found in each selected Keble were obtained from the respective Keble administrates. Accordingly, there are 4885, 6971, 13123 and 910 households in the Ginjo, Bacho bore, Saxoo samaroo, and Ginjoo guduruu Keble's respectively. Then, the calculated sample size allocated proportional to the four selected Keble's based on the number of households in each Keble. Accordingly, 171, 245, 460 and 32 households respectively selected from the Ginjo, Bacho bore, Saxoo samaroo, and Ginjoo guduruu Keble's using systematic random sampling. The sampling interval was calculated by dividing the total number of households in the four Keble's to the total sample size (25889/908); which was calculated to be 29 households. The first household randomly selected from the 29 households nearby the Keble office. A reproductive-age woman was final study unit from the selected households. If there are more than one eligible woman in the selected households, we select one woman randomly.

4.6: Data collection procedure (Instrument, personnel, data collection technique)

Data was collected from RH clients using a structured interviewer administered questionnaire that is adopted from a similar study. The questionnaire has five sections including, socio-demographic characteristics, knowledge about cervical cancer and screening, attitude towards cervical cancer screening, practice of cervical cancer screening and perceived barriers to wards cervical cancer screening. Data was collected using eight trained diploma nurses who deliver reproductive health services and two BSc nurse supervisors control the overall data collection process. Data collectors and supervisors are trained before the actual data collection regarding the approach, objective of the study and ethical issues for two days. The questionnaire prepared in English and translated to Afaan Oromoo and Amharic and back translated to English to check the consistency by language experts.

4.7: Study variables

4.7.1: Dependent variable:

Knowledge, Attitude and Practice towards Cervical cancer screening

4.7.2: Independent variable

Demographic and economic factors: Age, marital status, educational status, monthly income, occupation, parity, place of residence, religious factor.

Health facility related factors: Distance from health facility, Patient satisfaction with maternal health care service, source of information. Cleanliness (hygiene), cost, availability of services, accessibility, health worker attitude.

Cultural and individual factors: Decision making autonomy, age of sexual debate, marriage type, early marriage, and women exposed to media, age at marriage, knowing someone diagnosed with cervical cancer, fear of pain.

Medical and Obstetrics factors: ANC-attendance, zero status, abortion history, FP- use, number of children, parity birth interval, knowledge of pap smear, having plan for screening, family history of cervical cancer, history of STI, history of HPV menstrual history.

4.8: Data processing and analysis plan

Collected data checked for completeness and consistency, and coded manually. Then data entered using Epi-data manager software version 4.1. Data then exported to the Statistical Package for Social Sciences (SPSS) Software version 25 for data processing and further statistical analyses. Descriptive analysis was done to summarize the data. Binary logistic regression was done to assess statistical associations between the dependent and independent variables. Bivariate logistic regression done to select candidate variable. In the bivariate analysis, variables with p-value less than 25% are candidate for the multivariable logistic regression. Multicollinearity between the independent variables tested using variable inflation factor (VIF) and tolerance before fitting the final model. Multivariable logistic regression fitted to identify independent predictors of women's cervical cancer KAPs and to control for confounders. Adjusted odds ratio and 95% CI respectively calculated to assess statistical associations between women's cervical cancer screening KAPs and the independent variables, and to test their statistical significances in the final model. Hosmer and Lemeshow goodness of fit test used to test the fitness of the final model.

4.9: Data quality management

Checkups made for completeness and consistency of the data through the supervisors. Quantitative data tools are pretested before the actual data collection to check the accuracy of responses, clarity of language, and appropriateness of the questionnaire. Pretest was done in 5% of the total sample size a week before the actual data collection and amendments done accordingly. Two days training was given for data collectors and supervisors.

4.11: Ethical consideration

Ethical clearance is obtained from Jimma University Ethical review board. Permission letter to undertake the study was taken from Jimma town Health office. All participants in the selected health facility assured all the objective of the study, their full right to participate in the study and /or withdraw in between in case they are not comfortable with the interview. Then, written consent taken from all the study participants.

During data collection procedure, all possible Covid-19 infection prevention techniques was considered.

4.12: Dissemination Plan

The study result will be submitted and presented to Jimma University School of medicine, department of Obstetrics and Gynecology. It will be provided to the concerned body including Jimma town health office and Jimma Zone health office. Efforts will be made to publish on reputable journal.

4.13: Operational definitions

Cervical Cancer: Abnormal growth or proliferation of cells on the opening of the uterus (10).

Cancer Screening: A procedure that is performed to identify the presence of abnormal cells in a particular tissue.

Knowledge: Will be assessed using yes /No questions each correct response was given a score of 1 and a wrong answer given a score of 0. Modified Bloom's cut off points will be used to categorize the knowledge as:
Good: 80–100%,
Satisfactory: 50–79%, and
Poor: below 50%. Then we will compute the mean score to get the overall knowledge of cervical cancer screening of respondents and it will be further classified as poor and good for describing and comparison purposes (29).

Attitude: Will b**e** assessed using Likert scale. The scoring system will be: Strongly disagree =1, disagree=2, indifferent=3, agree= 4, strongly agree=5. The responses will be summed and a total score will be obtained. Then we calculate the mean score. Those who scored the mean score and above will be considered as having a positive attitude, where as those who scored below the mean score will be categorized as negative in attitudes towards cervical cancer screening.

Poor Practice: Respondents who never screened for cervical cancer.

Good Practice: Respondents who had been screened for cervical cancer at least once.

Chapter Five: Results

5.1 Socio-demographic Characteristics

Nine hundred five (905) reproductive-age women participated in the study making the response rate 99.67%. The mean age of the study participants was 33.59 year with a standard deviation of ± 7.08 year. More than one-fifth (22.4%) of the participants are in the age group of 30-34 years. Majority, 382(42.2%) of the study participants are Orthodox Christianity followers followed by Muslim, 295 (32.6%). Nearly one-in-ten, 95 (10.5%) woman has no formal education, and nearly one-third, 305 (33.7%) of the women are housewives

Table 2: Socio-demographic Characteristics of reproductive-age women in Jimma town, 2022.

Variable	Categories	Frequency	Percentage
Age	17-24	193	21.3
	30-34	203	22.4
	25-29	103	11.4
	35-39	189	20.9
	40-44	131	14.5
	45-49	86	9.5
	Total	905	100.0
Religion	Orthodox	382	42.2
	Protestant	198	21.9
	Catholic	30	3.3
	Muslim	295	32.6
	Total	905	100.0

Marital status	single	71	7.8
	married	700	77.3
	divorced	56	6.2
	widow	54	6.0
	separated	24	2.7
	Total	905	100.0
Educational status	Uneducated	95	10.5
	primary	235	26.0
	secondary	229	25.3
	technical/vocational	191	21.1
	higher	155	17.1
	Total	905	100.0
Occupation	Government employee	254	28.1
	Farmer	14	1.5
	Non-government employee	80	8.8
	Merchant	110	12.2
	House wife	305	33.7
	Daily Laborers	142	15.7
	Total	905	100.0

5.2 Knowledge, attitude, and practice towards cervical cancer screening among reproductive-age women in Jimma own, 2022

5.2.1 Knowledge of Cervical cancer among reproductive-age women in Jimma town. 2022

Of the total 905 (100%) women participated in the study, less than half, 49 (49.6%) of them have good knowledge of cervical cancer. From the total study participants, 395 (43.6%), 488 (53.9%), and 438 (48.4%) women have knowledge of cervical cancer symptoms, risk factors and prevention methods respectively (Table 3).

Table 3: Knowledge of cervical cancer screening among reproductive-age women in Jimma town, 2022

Variable	Categories	Frequencies	Percentage
Overall knowledge	Poor	456	50.4
	Good	449	49.6
Knowledge of symptoms of cervical cancer			
Overall knowledge of symptoms of cervical cancer	No	510	56.4
	Yes	395	43.6
	Total	905	100.0
Vaginal bleeding is symptom of cervical cancer	Yes	476	52.6
	No	163	18.0
	I don't know	266	29.4
	Total	905	100.0
Vaginal foul smelling is symptom of cervical cancer	Yes	508	56.1
	No	131	14.5
	I don't know	266	29.4
	Total	905	100.0

Post coital bleeding is symptom of CA	Yes	394	43.5
	No	190	21.0
	I don't know	321	35.5
	Total	905	100.0
Pain during sex is symptom of CA	Yes	434	48.0
	No	157	17.3
	I don't know	314	34.7
	Total	905	100.0
Post-menopausal bleeding is symptom of CA	Yes	379	41.9
	No	200	22.1
	I don't know	326	36.0
	Total	905	100.0
Presence of Vaginal Discharge is symptom of CA	yes	394	43.5
	no	190	21.0
	i don't know	321	35.5
	Total	905	100.0
Presence of Pelvic Pain is symptom of CA	Yes	361	39.9
	No	208	23.0
	I don't know	336	37.1
	Total	905	100.0
Knowledge of risk factors of cervical cancer			
Overall knowledge of the risk actors of cervical cancer	Yes	488	53.9
	No	417	46.1
	Total	905	100.0

Multiple sexual partners are a risk factor	Yes	577	63.8
	No	62	6.9
	I don't know	266	29.4
	Total	905	100.0
Early sexual intercourse is a risk	Yes	508	56.1
	No	100	11.0
	I don't know	297	32.8
	Total	905	100.0
Acquiring HPV is a risk	Yes	412	45.5
	No	166	18.3
	I don't know	327	36.1
	Total	905	100.0
Cigarette smoking is a risk	Yes	363	40.1
	No	217	24.0
	I don't know	325	35.9
	Total	905	100.0
Sexually transmitted infections	Yes	485	53.6
	No	137	15.1
	I don't know	283	31.3
	Total	905	100.0
Genetic predisposition	Yes	331	36.6
	No	233	25.7
	I don't know	341	37.7
	Total	905	100.0

Knowledge of prevention of cervical cancer			
Overall knowledge of prevention of cervical cancer	Yes	438	48.4
	No	467	51.6
	Total	905	100.0
avoiding multiple sexual partner	yes	577	63.8
	no	328	36.2
	Total	905	100.0
avoiding early sexual intercourse	yes	490	54.1
	no	415	45.9
	Total	905	100.0
Quitting smoking	yes	323	35.7
	no	582	64.3
	Total	905	100.0
Vaccination HPV	yes	427	47.2
	no	478	52.8
	Total	905	100.0
screening	yes	475	52.5
	no	430	47.5
	Total	905	100.0

5.2.2 Attitude towards cervical cancer screening among reproductive-age women in Jimma town, 2022

From the total 905 (100%) reproductive-age women participated in the study, nearly two-in-five (39.7%) women have unfavorable attitude towards cervical cancer (table 4).

Table 4: Attitude towards Cervical cancer screening among reproductive-age women in Jimma town, 2022

Variable	Categories	Frequency	Percentage
Overall attitude	Unfavorable attitude	359	39.7
	Favorable attitude	546	60.3
	Total	905	100.0
Carcinoma of cervix is cause of death	agree	513	56.7
	strongly agree	221	24.4
	neutral	154	17.0
	disagree	15	1.7
	strongly disagree	2	.2
	Total	905	100.0
Any woman acquires cervical cancer	agree	364	40.2
	strongly agree	50	5.5
	neutral	287	31.7
	disagree	199	22.0
	strongly disagree	5	.6
	Total	905	100.0
Screening helps in prevention of cervical cancer	agree	573	63.3
	strongly agree	101	11.2
	neutral	201	22.2
	disagree	29	3.2
	strongly disagree	1	.1
	Total	905	100.0
Screening for Cervical cancer benefits	agree	583	64.4
	strongly agree	113	12.5
	neutral	189	20.9
	disagree	20	2.2
	Total	905	100.0
Any women should be willing for screening	agree	527	58.2
	strongly disagree	57	6.3
	neutral	280	30.9
	disagree	39	4.3
	strongly disagree	2	.2
	Total	905	100.0
Screening for cervical cancer is not expensive	agree	263	29.1
	strongly agree	44	4.9
	neutral	408	45.1
	disagree	187	20.7
	strongly disagree	3	.3
	Total	905	100.0
If screening for cancer is free, I	agree	557	61.5

will be screened	strongly disagree	170	18.8
	neutral	123	13.6
	disagree	53	5.9
	strongly disagree	2	.2
	Total	905	100.0
Precancerous cervical cancer screening can prevent cervical cancer	agree	546	60.3
	strongly disagree	40	4.4
	neutral	231	25.5
	disagree	88	9.7
	Total	905	100.0
	agree	546	60.3
Precancerous cervical cancer screening doesn't harm	agree	429	47.4
	strongly agree	65	7.2
	neutral	308	34.0
	disagree	103	11.4
	Total	905	100.0
If Precancerous cervical cancer screening doesn't harm it is good to be screened	agree	549	60.7
	strongly agree	61	6.7
	neutral	213	23.5
	disagree	82	9.1
	Total	905	100.0

5.2.3 Pactice of Cervical Cancer Screening Among Reproductive-Age Women in Jimma Town, 2022

Of the total 90 (100%) reproductive-age women participated in the study, less than one in ten (9.2%) have ever been screened for cervical cancer. Of the total 83 (100%) women ever screened for cervical cancer, 56 (67.5%) were screened five years before, and 1(1.2%) was sceened positive respectively (table 5).

Table 5: Cervical cancer screening practice among reproductive-age women in Jimma town, 2022

Variable	Categories	Frequecy	Percentage
Have you ever been screened for cervical cancer ?	yes	83	9.2
	no	822	90.8
	Total	905	100.0
When was the last time you were screened ?	within the past 3 years	27	32.5
	More than 5 years ago	56	67.5
	Total	83	100.0
What was the test result?	positive	1	1.2
	negative	82	98.8
	Total	83	100.0

5.5 Factors associated with knowledge, attitude and practice of cervical cancer screening among reproductive-age women in Jimma, town

5.5.1 Factors associated with knowledge of cervical cancer screening among reproductive - age women in Jimma, town

A crude analysis was done to identify candidate variables (p value <25%), and a multivariable logistic regression was fitted to identify variables independently associated to knowledge of cervical cancer among reproductive-age women in Jimma town. A woman's educational level was significantly associated to knowledge of cervical cancer. Uneducated woman, a woman who completed primary education, and a woman who completed secondary education was 93 % (AOR=0.07; 95% CI: 0.02-0.21), 89% (AOR=0.11; 95% CI: 0.04-0.26), and 71% (AOR=0.29; 95%CI: 0.14-0.63) less likely to have good knowledge of cervical cancer as compared to a woman who completed a higher education respectively. The odds of good knowledge of cervical cancer among the women who married at their age of greater than or equal to 18 years was 2.15 (AOR=2.15; 95% CI: 1.27-3.64) times more likely than the odds of good knowledge of cervical cancer among the women who married at their age of less than 18 years. A woman who has not ever utilized antenatal care service (ANC) was 88% (AOR=0.12; 95% CI: 0.03-0.60) less likely to have good knowledge of cervical cancer as compared to a woman who has ever utilized antenatal care service (ANC). A woman who has not a family history of cervical cancer was 56% (AOR=0.44; 95% CI: 0.21-0.92) less likely to have good knowledge of cervical cancer as compared to a woman who has a family history of cervical cancer. A woman who has not ever used contraceptive was 67% (AOR=0.33; 95% CI: 0.17-0 .66) less likely to have good knowledge of cervical cancer as compared to a woman who has ever used contraceptive. A woman who travels greater than or equal to 30 minutes to reach to a nearby health facility was 52 % (AOR= 0.48; 95% CI: 0.32-0.72) less likely to have good knowledge of cervical cancer as compared to a woman who travels less than 30 minutes to reach to a nearby health facility (Table 6).

Table 6: Factors significantly associated with knowledge of cervical cancer among reproductive-age women in Jimma town, 2022

Variable	Categories	Frequency (%)	Knowledge of Cervical Cancer		COR (95% CI)	P-value	AOR (95% CI)
			Good (%)	Poor (%)			
Age	17-24	193 (21.3)	83 (43)	110 (57)	0.79 (0.53,1.18)	0.49	
	25-29	103 (11.4)	46 (44.7)	57 (55.3)	0.85 (0 .53, 1.37)	0.25	
	30-34	203 (22.4)	99 (48.8)	104 (51.2)	1		
	35-39	189 (20.9)	103 (54.5)	86(45.5)	1.26 (0.85, 1.87)	0.26	
	40-44	131 (14.5)	71 (54.2)	60 (45.8)	1.24 (0.80, 1.93)	0.33	
	45-49	86 (9.5)	47 (54.7)	39 (45.3)	1.27 (0.76, 2.10)	0.36	
	Total	905 (100.0)	449 (49.6)	456 (50.4)			
Religion	Orthodox	382 (42.2)	188 (49.2%)	194 (50.8%)	1		1
	Protestant	198 (21.9)	94 (47.5%)	104 (52.5%)	0.93 (0.66, 1.32)	0.69	0.65 (0.37, 1.12)
	Catholic	30(3.3)	20 (66.7%)	10 (33.3%)	2.06 (0.94, 4.53)	0.07*	1.02 (0.35, 2.98)
	Muslim	295 (32.6)	147 (49.8%)	148 (50.2%)	1.03 (0.76, 1.39)	0.87	1.69(0.99, 2.78)

	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Marital status	single	71 (7.8)	361 (51.6%)	339 (48.4%)	0.91(0.56,1.49)	0.72	3.58 (0.41, 31.13)
	married	700 (77.3)	35 (49.3%)	36 (50.7%)	1		1
	divorced	56 (6.2)	21 (37.5%)	35 (62.5%)	0.56(0.32,0.99)	0.05*	0.77 (0.30, 1.95)
	widow	54 (6.0)	21 (38.9%)	33 (61.1%)	0.60 (0.34,1.05)	0.08*	0.95 (0.34, 2.61)
	separated	24 (2.7)	11 (45.8%)	13 (54.2%)	0.80 (0.35,1.80)	0.58	3.58 (0.80, 16.13)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Educational status	Uneducated	95 (10.5)	32 (33.7)	63 (66.3)	0.15 (0.08, 0.26)	0.00*	0.07 (0.02, 0.21)**
	primary	235 (26.0)	69 (29.4%)	166 (70.6%)	0.12 (0.08,0.19)	0.00*	0.11 (0.04, 0.26)**
	secondary	229 (25.3)	111 (48.5%)	118 (51.5%)	0.27 (0.17,.43)	0.00*	0.29 (0.14, 0.63)**
	technical/vocational	191 (21.1)	117 (61.3%)	74 (38.7%)	0.46 (0.29,0.74)	0.00*	0.51 (0.25, 1.02)
	higher	155 (17.1)	120 (77.4%)	35 (22.6%)	1		1
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Occupation	Government employee	254 (28.1)	166 (65.4%)	88 (34.6%)	1		1
	Farmer	14 (1.5)	7 (50.0%)	7 (50%)	0.53 (0.18, 1.56)	0.20*	2.90 (0.52, 16.13)

	Non-government employee	80 (8.8)	45 (56.3%)	35 (43.8%)	0.68 (0.41, 1.14)	0.14*	0.70 (0.32, 1.54)
	Merchant	110 (12.2)	57 (51.8%)	53 (48.2%)	0.57 (0.36,0.90)	0.02*	1.26 (0.58, 2.71)
	House wife	305 (33.7)	119 (39.0%)	186 (61.0%)	0.34 (0.24,0.48)	<0.001*	0.71 (0.38, 1.32)
	Daily Laborers	142 (15.7)	55 (38.7%)	87 (61.3%)	0.34(0.22, 0.51)	<0.001*	0.80 (0.34, 1.85)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Sociocultural and individual factors							
Head of Household	Yes	232 (25.64)	105 (45.3%)	127 (54.7%)	1		1
	No	673 (74.36)	344 (51.1%)	329 (48.9%)	1.27(0.94, 1.71)	0.124*	0.83 (0.42, 1.66)
	Total	905 (100)	449 (49.6%)	456 (50.4%)			
Family size	<5	374(41.3)	169 (45.2%)	205 (54.8%)	1		1
	>=5	531 (58.7)	280 (52.7%)	251 (47.3%)	1.35(1.04,1.77)	0.026*	1.10 (0.66, 1.84)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Woman decision making autonomy	Yes	662 (73.1)	320 (48.3%)	342 (51.7%)	1		1
	No	243 (26.9)	129 (53.1%)	114 (46.9%)	1.21 (0.90,1.62)	0.206*	1.30 (0.77, 2.17)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Age at first marriage	< 18 years	229(27.23)	77 (33.6%)	152 (66.4%)	1		1
	>=18 years	612 (72.77)	343 (56.0%)	269 (44.0%)	2.52(1.83,3.46)	<0.001*	2.15 (1.27, 3.64)**
	Total	841(100.00)	420 (49.9%)	421 (50.1%)			
Age at first	<18 years	252 (27.80)	110 (43.7%)	142 (56.3%)	1		1

sexual intercourse	>=18 years	653 ()72.20	339 (51.9%)	314 (48.1%)	1.39(1.04, 1.87)	0.026*	0.73(0.45, 1.18)
	Total	905 (100.00)	449 (49.6%)	456 (50.4%)			
Teen-age pregnancy	No	671 (84.94)	352 (52.5%)	319 (47.5%)	1		1
	Yes	119 (15.06)	37 (31.1%)	82 (68.9%)	0.41(0.27, 0.62)	<0.001*	0.62 (0.32, 1.21)
	Total	790 (100.00)	389 (49.2%)	401 (50.8%)			
Reading newspaper	at least once a week	356 (39.3)	192(53.9%)	164 (46.1%)	1		1
	less than once a week	73 (8.1)	31 (42.5%)	42 (57.5%)	0.63 (0.38,1.05)	0.08*	1.12 (0.48, 2.62)
	not at all	476 (52.6)	226 (47.5%)	250 (52.5%)	0.77(0.59, 1.02)	0.07*	1.02(0.57, 1.84)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Listening to radio	at least once a week	468 (51.7)	243 (51.9%)	225 (48.1%)	1		1
	less than once a week	120 (13.3)	37(30.8%)	83 (69.2%)	0.41(0.27,0.63)	<0.001*	0.61 (0.29, 1.27)
	not at all	317 (35.0)	169 (53.3%)	148 (46.7%)	1.06(0.80,1.41)	0.70	1.64 (0.94, 2.87)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Watching television	at least once a week	773 (85.4)	398 (51.5%)	375 (48.5%)	1		1
	less than once a week	34 (3.8)	15 (44.1%)	19 (55.9%)	0.74(0.37,1.49)	0.402	1.64 (0.52, 5.19)
	not at all	98 (10.8)	36 (36.7%)	62 (63.3%)	0.55 (0.36,0.86)	.006*	0.68 (0.33, 1.42)
	Total	905(100.0)	449 (49.6%)	456 (50.4%)			
Owning mobile	yes	793 (87.6)	412 (52.0%)	381 (48.0%)	1		1
	no	112 (12.4)	37 (33.0%)	75 (67.0%)	0.46 (0.30,0.69)	<0.001*	1.09 (0.51, 2.32)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Using internet	yes	449 (49.6)	274 (61.0%)	175 (39.0%)	1		1

	no	456 (50.4)	175 (38.4%)	281 (61.6%)	0.40 (0.30,0.52)	<.001 *	1.03 (0.59, 1.80)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Ever habit of smoking	Yes	17 (1.9)	10 (58.8%)	7 (41.2%)	1		
	No	888 (98.1)	439 (49.4%)	449 (50.6%)	0.68 (0.26,1.81)	.446	
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Ever chewed khat	Yes	130 (14.4)	62 (47.7%)	68 (52.3%)	1		
	No	775 (85.6)	387 (49.9%)	388 (50.1%)	1.09 (0.75,1.59)	0.64	
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
History of drinking alcohol	Yes	148 (16.4)	85 (57.4%)	63 (42.6%)	1		
	No	757 (83.6)	364 (48.1%)	393 (51.9%)	0.69 (0.48,0.98)	0.038 *	0.79 (0.44, 1.41)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Medical and obstetrics factors							
Ever pregnancy	yes	823 (90.9)	409 (49.7%)	414 (50.3%)	1		
	no	82 (9.1)	40 (48.8%)	42 (51.2%)	0.96 (0.61,1.52)	0.87	
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Number of children	0-2	372 (45.4)	172 (46.2%)	200 (53.8%)	1		1
	3-4	322 (39.3)	171 (53.1%)	151 (46.9%)	1.33 (0.98,1.78)	0.07*	1.26 (0.60, 2.63)
	>=5	125 (15.3)	63 (50.4%)	62 (49.6%)	1.18(0.79,1 .77)	0.42	1.34 (0.30, 5.95)
	Total	819 (100.0)	406 (49.6%)	413 (50.4%)			
Birth Interval	<3 Years	235 (26.0)	112 (47.7%)	123 (52.3%)	1		1
	3-5 Years	392 (43.3)	210 (53.6%)	182 (46.4%)	1.82(0.75,4 .42)	0.19*	1.27 (0.85, 1.91)
	>=5 Years	24 (2.7)	8 (33.3%)	16 (66.7%)	2.31 (0.97,5.52)	0.06*	1.40 (0.45, 4.41)

	Total	651 (71.9)	330 (50.7%)	321 (49.3%)			
Ever ANC utilization	yes	776 (94.6)	394 (50.8%)	382 (49.2%)	1		1
	no	44 (5.4)	13 (29.5%)	31 (70.5%)	0.41(0.21,0.79)	0.008*	0.12 (0.03,0.60)**
	Total	820 (100.0)	407 (49.6%)	413 (50.4%)			
Number of ANC visit	<4	226 (29.12)	109 (48.2%)	117 (51.8%)	1		
	>=4	550 (70.88)	287 (52.2%)	263 (47.8%)	1.17(0.86,1.60)	0.317	
	Total	776 (100.00)	396 (51.0%)	380 (49.0%)			
History of abortion	yes	159 (17.6)	95 (59.7%)	64 (40.3%)	1		1
	no	746 (82.4)	354 (47.5%)	392 (52.5%)	0.61 (0.43,0.86)	0.005*	0.61 (0.36, 1.04)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Family History of Cervical Cancer	yes	68 (7.5)	48 (70.6%)	20 (29.4%)	1		1
	no	837 (92.5)	401 (47.9%)	436 (52.1%)	0.38 (0.22, .66)	<0.001*	0.44 (0.21, 0.92)**
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Menstrual history	regular	653 (72.2)	334 (51.1%)	319 (48.9%)			1
	irregular	217 (24.0)	102 (47.0%)	115 (53.0%)	0.85 (0.62,1.15)	0.29	0.81 (0.50,1.30)
	post coital bleeding	9 (1.0)	2 (22.2%)	7 (77.8%)	0.27(.06,1.32)	0.11*	0.23 (0.02, 2.62)
	menopause	26 (2.9)	11 (42.3%)	15 (57.7%)	0.70 (0.32,1.55)	0.38	1.53 (0.41, 5.69)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Ever use of contraceptive	yes	730 (80.7)	384 (52.6%)	346 (47.4%)	1		
	no	175 (19.3)	65 (37.1%)	110 (62.9%)	0.53(.38, 0.75)	<0.001*	0.33 (0.17,0.66)**
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Awareness on HIV	No	185 (20.4)	81 (43.8%)	104 (56.2%)	1		1
	Yes	720	368	352	1.34(0.97,1	.076*	0.92 (0.53,

self-status		(79.6)	(51.1%)	(48.9%)	.86)		1.61)
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			
Distance from health facility	<30 minute	361 (39.9)	216 (59.8%)	145 (40.2%)	1		1
	>= 30 minute	544 (60.1)	233 (42.8%)	311 (57.2%)	0.50(0.38, 0.66)	<0.001*	0.48 (0.32, 0.72)**
	Total	905 (100.0)	449 (49.6%)	456 (50.4%)			

1= Reference category, *= statistically associated in the crude analysis, **=statistically associated in the adjusted analysis

5.5.2 Factors associated with attitude of cervical cancer screening among reproductive-age women in Jimma, town

A multivariable logistic regression was fitted to identify variables significantly associated with attitude towards cervical cancer screening among reproductive-age women in Jimma town. A woman who is aged between 35-39 years and 45-49 years was 83% (AOR= 1.83; 95% CI:1.06-3.16), and 3.73 (AOR=3.73; 95% CI:1.69-8.23) times more likely to have favorable attitude towards cervical cancer screening as compared to a woman aged between 30-34 years of age respectively. Uneducated woman, a woman who completed a primary education and a woman who completed a secondary education was 85% (AOR=0.15; 95% CI: 0.05-0.420), 75 % (AOR=0.25; 95% CI: 0.10-0.60), and 60% (AOR=0.40; 95% CI: 0.17-0.92) less likely to have favorable attitude towards cervical cancer screening as compared to a women who completed a higher education. Similarly, women's occupation was independently associated with attitude towards cervical cancer screening. A woman who is non-governmental employee, a housewife, and daily a daily laborer was 63% (AOR= 0.37; 95% CI: 0.17-0.82), 56 % (AOR=0.44; 95% CI: 0.23-0.84), and 65% (AOR=0.35; 95% CI: 0.16-0.79) less likely to have favorable attitude towards cervical cancer screening as compared to a woman who is a governmental employee respectively. A woman who had been married at her 18 years of age or more was 2.80 (AOR=

2.80; 95% CI: 1.68-4.74) times more likely to have favorable attitude towards cervical cancer screening as compared to a woman who had been married before her 18 years of age. A woman who had not history of drinking alcoholic beverage was nearly two (AOR=2.02; 95% CI: 1.16-3.54) times more likely to have favorable attitude towards cervical cancer screening as compare to a woman who had history of drinking alcoholic beverage. A woman who had given births at an interval of greater than or equal to five years was 5.71 (AOR=5.71; 95% CI: 1.61-20.21) times more likely to have favorable attitude towards cervical cancer screening as compared to a woman who had given births at an interval of less than three years. A woman who had not ever utilized antenatal care service was 77% (AOR=0.23; 95%CI: 0.06-0.88) less likely to have favorable attitude towards cervical cancer screening as compared to a woman who had ever utilized antenatal care service (Table 7).

Table 7: Factors associated with Attitude of cervical cancer screening among reproductive-age women in Jimma, town, 2022

Variable	Categories	Frequency (%)	Attitude towards cervical cancer		COR (95% CI)	P-value	AOR (95% CI)
			Favorable (%)	Unfavorable (%)			
Age	17-24	193 (21.3)	103 (53.4%)	90 (46.6%)	0.95 (0.64, 1.41)	0.79	1.12 (0.55,2.26)
	25-29	103 (11.4)	64 (62.1%)	39 (37.9%)	1.36 (0.84, 2.21)	0.21*	1.48 (0.73, 2.99)
	30-34	203 (22.4)	111 (54.7%)	92 (45.3%)	1		1
	35-39	189 (20.9)	122 (64.6%)	67 (35.4%)	1.51 (1.01, 2.27)	0.04*	1.83 (1.06, 3.16)**
	40-44	131 (14.5)	81 (61.8%)	50 (38.2%)	1.34 (0.86, 2.10)	0.20*	1.80 (0.96, 3.37)
	45-49	86 (9.5)	65 (75.6%)	21 (24.4%)	2.57 (1.46, 4.51)	0.001*	3.73 (1.69, 8.23)**

	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Religion	Orthodox	382 (42.2)	228 (59.7%)	154 (40.3%)	1		
	Protestant	198 (21.9)	119 (60.1%)	79 (39.9%)	1.02 (0.72, 1.44)	0.92	
	Catholic	30(3.3)	16 (53.3%)	14 (46.7%)	0.77(0.37, 1.63)	0.50	
	Muslim	295 (32.6)	183 (62.0%)	112 (38.0%)	1.10 (0.81,1.51)	0.54	
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Marital status	single	71 (7.8)	439 (62.7%)	261 (37.3%)	0.44 (0.270.71)	0.001 *	0.29 (0.03, 3.39)
	married	700 (77.3)	30 (42.3%)	41 (57.7%)	1		1
	divorced	56 (6.2)	36 (64.3%)	20 (35.7%)	1.07 (0.61, 1.90)	0.82	1.94 (0.72, 5.21)
	widow	54 (6.0)	28 (51.9%)	26 (48.1%)	0.64 (0.37,1.12)	0.12*	0.77 (0.297, 1.20)
	separated	24 (2.7)	13 (54.2%)	11 (45.8%)	0.70 (0.31,1.59)	0.40	0.47 (0.12, 1.79)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Educational status	Uneducated	95 (10.5)	37 (38.9%)	58 (61.1%)	0.17 (0.10,0.30)	<0.001*	0.15 (0.05, 0.420)**
	primary	235 (26.0)	124 (52.8%)	111 (47.2%)	0.30 (0.19, 0.48)	<0.001*	0.25 (0.10, 0.60)**
	secondary	229 (25.3)	135 (59.0%)	94 (41.0%)	0.39 (0.24,0.62)	<0.001*	0.40 (0.17, 0.92)**

	technical/vocational	191 (21.1)	128 (67.0%)	63 (33.0%)	0.55 (0.34, 0.90)	0.02*	0.49 (0.22, 1.09)
	higher	155 (17.1)	122 (78.7%)	33 (21.3%)	1		1
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Occupation	Government employee	254 (28.1)	192 (75.6%)	62 (24.4%)	1		1
	Farmer	14 (1.5)	7 (50.0%)	7 (50.0%)	0.32 (0.11,0.96)	0.04*	0.52 (0.10, 2.84)
	Non-government employee	80 (8.8)	42 (52.5%)	38 (47.5%)	0.36 (0.21, 0.60)	<0.001*	0.37 (0.17, 0.82)**
	Merchant	110 (12.2)	65 (59.1%)	45 (40.9%)	0.47 (0.29,0.75)	0.002*	0.81 (0.36, 1.82)
	House wife	305 (33.7)	170 (55.7%)	135 (44.3%)	0.41 (0.28,0.59)	<0.001*	0.44 (0.23, 0.84)**
	Daily Laborers	142 (15.7)	70 (49.3%)	72 (50.7%)	0.31 (0.20,0.49)	<0.001*	0.35(0.16, 0.79)**
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Sociocultural and individual factors							
Head of Household	Yes	232 (25.64)	124 (53.4%	108 (46.6%)	1		1
	No	673 (74.36)	422 (62.7%)	251 (37.3%)	1.46 (1.08, 1.98)	0.013*	1.13 (0.57, 2.24)
	Total	905 (100)	546 (60.3%)	359 (39.7%)			
Family size	<5	374(41.3)	222 (59.4%)	152 (40.6%)	1		
	>=5	531 (58.7)	324 (61.0%)	207 (39.0%)	1.07 (0.82, 1.40)	0.62	
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			

	Yes	662 (73.1)	399 (60.3%)	263 (39.7%)	1		
Women decision making autonomy	No	243 (26.9)	147 (60.5%)	96 (39.5%)	1.01 (0.75, 1.36)	0.952	
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Age at first marriage	<18 years	229(27.23)	102 (44.5%)	127 (55.5%)	1		1
	>= 18years	612 (72.77)	421 (68.8%)	191 (31.2%)	2.74 (2.01, 3.75)	<0.001*	2.80 (1.68, 4.74)**
	Total	841(100.00)	523 (62.2%)	318 (37.8%)			
Age at first sexual intercourse	<18 years	252 (27.80)	135 (53.6%)	117 (46.4%)	1		1
	>=18 years	653 ()72.20	411 (62.9%)	242 (37.1%)	1.47 (1.10, 1.98)	0.010*	0.77 (0.48, 1.25)
	Total	905 (100.00)	546 (60.3%)	359 (39.7%)			
Teen-age pregnancy	No	671 (84.94)	432 (64.4%)	239 (35.6%)	1		
	Yes	119 (15.06)	53 (44.5%)	66 (55.5%)	0.44 (0.30, 0.66)	<0.001*	1.01 (0.54, 1.88)
	Total	790 (100.00)	485 (61.4%)	305 (38.6%)			
Reading newspaper	at least once a week	356 (39.3)	215 (60.4%)	141 (39.6%)	1		
	less than once a week	73 (8.1)	40 (54.8%)	33 (45.2%)	0.89 (0.48,1.32)	0.38	
	not at all	476 (52.6)	291 (61.1%)	185 (38.9%)	1.03 (0.78,1.37)	0.83	
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Listening to radio	at least once a week	468 (51.7)	265 (56.6%)	203 (43.4%)	1		1
	less than once a week	120 (13.3)	67 (55.8%)	53 (44.2%)	0.97 (0.65,1.45)	0.88	1.28 (0.64, 2.55)
	not at all	317 (35.0)	214 (67.5%)	103 (32.5%)	1.59 (1.18,2.14)	0.002*	1.98 (0.98, 3.47)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Watching television	at least once a week	773 (85.4)	480 (62.1%)	293 (37.9%)	1		1
	less than once a week	34 (3.8)	10 (29.4%)	24 (70.6%)	0.25 (0.12,0.54)	<0.001*	0.80 (0.24, 2.65)

	not at all	98 (10.8)	42 (42.9%)	56 (57.1%)	0.81 (0.53,1.25)	0.34	1.40 (0.68, 2.87)
	Total	905(100.0)	546 (60.3%)	359 (39.7%)			
Owning mobile	yes	793 (87.6)	484 (61.0%)	309 (39.0%)	1		
	no	112 (12.4)	62 (55.4%)	50 (44.6%)	0.79 (0.53,1.18)	0.25	
	Total	905 (100.0)	359 (39.7%)	546 (60.3%)			
Using internet	yes	449 (49.6)	275 (61.2%)	174 (38.8%)	1		
	no	456 (50.4)	271 (59.4%)	185 (40.6%)	0.93 (0.71,1.21)	0.58	
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Ever habit of smoking	Yes	17 (1.9)	7 (41.2%)	10 (58.8%)	1		1
	No	888 (98.1)	539 (60.7%)	349 (39.3%)	2.21 (0.83,5.85)	0.11*	1.82 (0.46, 7.15)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Ever chewed khat	Yes	130 (14.4)	68 (52.3%)	62 (47.7%)	1		1
	No	775 (85.6)	478 (61.7%)	297 (38.3%)	1.47 (1.01,2.13)	0.04*	0.82 (0.46, 1.44)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
History of drinking alcohol	Yes	148 (16.4)	73 (49.3%)	75 (50.7%)	1		1
	No	757 (83.6)	473 (62.5%)	284 (37.5%)	1.71 (1.20,2.44)	0.003 *	2.02 (1.16, 3.54)**
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Medical and obstetrics factors							
Ever pregnancy	yes	823 (90.9)	498 (60.5%)	325 (39.5%)	1		
	no	82 (9.1)	48 (58.5%)	34 (41.5%)	0.92 (.58,1.46)	0.72	
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Number of children	0-2	372 (45.4)	227 (61.0%)	145 (39.0%)	1		
	3-4	322 (39.3)	195 (60.6%)	127 (39.4%)	0.98 (0.72,1.33)	0.90	

	>=5	125 (15.3)	75 (60.0%)	50 (40.0%)	0.96 (0.63,1.45)	0.840	
	Total	819 (100.0)	497 (60.7%)	322 (39.3%)			
Birth Interval	<3 Years	235 (26.0)	126 (53.6%)	109 (46.4%)	1		1
	3-5 Years	392 (43.3)	263 (67.1%)	129 (32.9%)	1.76 (1.27, 2.46)	0.001 *	1.39 (0.93, 2.09)
	>=5 Years	24 (2.7)	19 (79.2%)	5 (20.8%)	3.29 (1.19, 9.10)	0.022 *	5.71 (1.61, 20.21)**
	Total	651 (71.9)	408 (62.7%)	243 (37.3%)			
Ever ANC utilization	yes	776 (94.6)	486 (62.6%)	290 (37.4%)	1		1
	no	44 (5.4)	11 (25.0%)	33 (75.0%)	0.20 (0.10,0.40)	<0.001*	0.23 (0.06, 0.88)**
	Total	820 (100.0)	497 (60.6%)	323 (39.4%)			
History of abortion	yes	159 (17.6)	104 (65.4%)	55 (34.6%)	1		1
	no	746 (82.4)	442 (59.2%)	304 (40.8%)	0.77 (0.54, 1.10)	0.15*	0.83 (0.48, 1.41)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Family History of Cervical Cancer	yes	68 (7.5)	49 (72.1%)	19 (27.9%)	1		1
	no	837 (92.5)	497 (59.4%)	340 (40.6%)	0.57 (0.33, 0.98)	0.04*	0.54 (0.25, 1.16)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Menstrual history	regular	653 (72.2)	387 (59.3%)	266 (40.7%)	1		1
	irregular	217 (24.0)	136 (62.7%)	81 (37.3%)	1.15 (0.84,1.58)	0.38	1.47 (0.88, 2.45)
	post coital bleeding	9 (1.0)	4 (44.4%)	5 (55.6%)	0.55 (0.15, 2.07)	0.38	0.76 (0.12, 4.86)
	menopause	26 (2.9)	19 (73.1%)	7 (26.9%)	1.87 (0.77, 4.50)	0.17*	2.31 (0.57, 9.40)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Ever use of contraceptive	yes	730 (80.7)	447 (61.2%)	283 (38.8%)	1		1
	no	175 (19.3)	99 (56.6%)	76 (43.4%)	0.83 (0.59, 1.15)	0.26	
	Total	905	546	359			

		(100.0)	(60.3%)	(39.7%)			
Awareness on HIV self-status	No	185 (20.4)	99 (53.5%)	86 (46.5%)	1		1
	Yes	720 (79.6)	447 (62.1%)	273 (37.9%)	1.42 (1.03, 1.97)	0.04*	1.37 (0.76, 2.46)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			
Distance from health facility	<30 minute	361 (39.9)	203 (56.2%)	158 (43.8%)	1		
	>= 30 minute	544 (60.1)	343 (63.1%)	201 (36.9%)	1.33 (1.01, 1.74)	0.04*	0.92 (0.61, 1.37)
	Total	905 (100.0)	546 (60.3%)	359 (39.7%)			

1= Reference category, *= statistically associated in the crude analysis, **=statistically associated in the adjusted analysis

5.5.3 Factors associated with cervical cancer screening uptake among reproductive-age women in Jimma, town

Multivariable logistic regression was fitted to identify variables independently associated with the uptake of cervical cancer screening. The odds of cervical cancer screening uptake among Muslim religion followers was 64% (AOR=0.36, 9% CI; 0.15-0.88) less likely than the odds of cervical cancer screening uptake among orthodox Christianity follower women. A woman who is not a head of a household was 77% (AOR= 0.23, 95% CI; 0.08-0.67) less likely to uptake cervical cancer screening as compared to a woman who is a head of a household. Woman's knowledge about cervical cancer was also significantly associated to a cervical cancer screening uptake: a woman who does not have a good knowledge of cervical cancer was 74% (AOR=0.26, 95% CI; 0.09-0.74) less likely to uptake cervical cancer screening as compared to a woman who does have a good knowledge of cervical cancer. Similarly, attitude towards the cervical cancer screening was significantly associated with the uptake of the screening. A woman who does not have a favorable attitude towards the cervical cancer screening was 87% (AOR=0.13, 95% CI; 0.04-0.49) less likely to uptake the service as compared to a woman who does have a favorable attitude. A woman who does not totally listen to a radio was 77% (AOR=0.23, 95% CI; 0.07-0.74) less likely to uptake cervical cancer screening service as compared to a woman who listens to a radio at least once a week. The odds of cervical cancer screening uptake among the women who had not ever used contraceptive was 2.92 (AOR=2.92; 95% CI: 1.10-7.72) more likely than

the odds of cervical cancer screening uptake among the women who had ever used contraceptive (Table 8).

Table 8: Factors associated with uptake of cervical cancer screening service among reproductive-age women in Jimma Town, 2022

Variable	Categories	Frequency (%)	Practice of cervical cancer screening		COR (95 % CI)	P Value	AOR (95% CI)
			Yes (%)	No (%)			
Age	17-24	193 (21.3)	12 (6.2%)	181 (93.8%)	0.80(0.40,1.99)	0.785	1.95 (0.51, 7.50)
	25-29	103 (11.4)	9 (8.7%)	94 (91.3%)	1.29 (0.54,3.10)	0.565	1.21 (0.32, 4.53)
	30-34	203 (22.4)	14 (6.9%)	189 (93.1%)	1		1
	35-39	189 (20.9)	20 (10.6%)	169 (89.4%)	1.60(0.78, 3.26)	0.198*	1.31 (0.49, 3.50)
	40-44	131 (14.5)	17 (13.0%)	114 (87.0%)	2.01 (0.96,4.24)	0.065*	1.47 (0.50,4.34)
	45-49	86 (9.5)	11 (12.8%)	75 (87.2%)	1.98 (0.86,4.56)	0.108	1.62 (0.48, 5.52)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Religion	Orthodox	382 (42.2)	42 (11.0%)	340 (89.0%)	1		1
	Protestant	198 (21.9)	17 (8.6%)	181 (91.4%)	0.76 (0.42,1.37)	0.364	0.86 (0.39, 1.92)
	Catholic	30(3.3)	5 (16.7%)	25 (83.3%)	1.62 (0.59,4.46)	0.351	0.30 (0.03, 3.01)

	Muslim	295 (32.6)	19 (6.4%)	276 (93.6%)	0.56 (0.32, 0.98)	0.042*	0.36 (0.15, 0.88)**
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Marital status	single	71 (7.8)	8 (11.3%)	63 (88.7%)	1.38 (0.63, 3.02)	0.420	0.67 (0.04, 12.06)
	married	700 (77.3)	59 (8.4%)	641 (91.6%)	1		1
	divorced	56 (6.2)	7 (12.5%)	49 (87.5%)	1.55 (0.67,3.58)	0.303	1.06 (0.20, 5.56)
	widow	54 (6.0)	8 (14.8%)	46 (85.2%)	1.89 (0.85, 4.19)	0.118*	0.35 (0.076, 1.60)
	separated	24 (2.7)	1 (4.2%)	23 (95.8%)	0.47 (0.06,3.56)	0.467	0.39 (0.03, 5.77)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Educational status	Uneducated	95 (10.5)	3 (3.2%)	92 (96.8%)	0.20 (0.06,0.68)	0.010*	7.62 (0.75, 77.20)
	primary	235 (26.0)	24 (10.2%)	211 (89.8%)	0.69 (0.37,1.28)	0.235*	1.87 (0.45, 7.84)
	secondary	229 (25.3)	17 (7.4%)	212 (92.6%)	0.49 (0.25, 0.95)	0.034*	0.63 (0.19, 2.05)
	technical/vocational	191 (21.1)	17 (8.9%)	174 (91.1%)	0.59 (0.30, 1.16)	0.125*	0.76 (0.29, 2.01)
	higher	155 (17.1)	22 (14.2%)	133 (85.8%)	1		1
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Occupation	Government employee	254 (28.1)	28 (11.0%)	226 (89.0%)	1		1

	Non-government employee	94 (10.3)	15 (16%)	79 (84%)	1.53 (0.78, 3.02)	0.217*	1.24 (0.39, 3.99)
	Merchant	110 (12.2)	16 (14.5%)	94 (85.5%)	1.37 (0.71, 2.66)	0.345	0.90(0.26, 3.09)
	House wife	305 (33.7)	20 (6.6%)	285 (93.4%)	0.57 (0.31,1.03)	0.063*	1.83(0.60, 5.62)
	Daily Laborers	142 (15.7)	4 (2.8%)	138 (97.2%)	0.23 (0.08, 0.68)	0.008*	0.01(0.01, 2.12)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Sociocultural and individual factors							
Head of Household	Yes	232 (25.64)	34 (14.7%)	198 (85.3%)	1		1
	No	673 (74.36)	49 (7.3%)	624 (92.7%)	0.46 (0.29, 0.73)	0.01*	0.23(0.08, 0.67)**
	Total	905	83 (9.2%)	822 (90.8%)			
Family size	<5	374(41.3)	27 (7.2%)	347 (92.8%)	1		1
	>=5	531 (58.7)	56 (10.5%)	475 (89.5%)	1.52 (0.94, 2.45)	0.089*	1.32 (0.55, 3.20)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Woman decision making autonomy	Yes	662 (73.1)	71 (10.7%)	591 (89.3%)	1		
	No	243 (26.9)	12 (4.9%)	231 (95.1%)	0.43(0.23, 0.81)	0.009*	0.57 (0.19, 1.66)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Age at first marriage	<18 years	229(27.23)	20 (8.7%)	209 (91.3%)	1		
	>=18 years	612 (72.77)	58 (9.5%)	554 (90.5%)	1.09 (0.64, 1.86)	0.741	
	Total	841(100.00)	78 (9.3%)	763 (90.7%)			
Age at first sexual	<18	252 (27.80)	23 (9.1%)	229 (90.9%)	1		
	>=18	653	60	593	1.01 (0.61,	0.97	

intercourse		()72.20	(9.2%)	(90.8%)	1.67)	7	
	Total	905 (100.00)	83 (9.2%)	822 (90.8%)			
Teen-age pregnancy	No	671 (84.94)	60 (8.9%)	611 (91.1%)	1		
	Yes	119 (15.06)	8 (6.7%)	111 (93.3%)	0.73 (0.34, 1.58)	0.428	
	Total	790 (100.00)	68 (8.6%)	722 (91.4%)			
Reading newspaper	at least once a week	356 (39.3)	54 (15.2%)	302 (84.8%)	1		
	less than once a week	73 (8.1)	10 (13.7%)	63 (86.3%)	0.89 (0.43, 1.84)	0.748	0.81 (0.24, 2.75)
	not at all	476 (52.6)	19 (4.0%)	457 (96.0%)	0.23 (0.14, 0.40)	<0.001*	0.51 (0.18, 1.44)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Knowledge of cervical cancer	Good knowledge	449 (49.6)	65 (14.5%)	384 (85.5%)	1		
	Poor knowledge	456 (50.4)	18 (3.9%)	438 (96.1%)	0.24 (0.14, 0.42)	<0.001*	0.26 (0.09, 0.74)**
	Total	905 (100%)	83 (9.2%)	822 (90.8%)			
Attitude towards cervical cancer	Favorite attitude	546 (60.3)	74 (13.6%)	472 (86.4%)	1		
	Un favorite attitude	359 (39.7)	9 (2.5%)	350 (97.5%)	0.16 (0.08, 0.33)	<0.001*	0.13 (0.04, 0.49)**
	Total	905 (100)	83 (9.2%)	822 (90.8%)			
Listening to radio	at least once a week	468 (51.7)	65 (13.9%)	403 (86.1%)	1		1
	less than once a week	120 (13.3)	9 (7.5%)	111 (92.5%)	0.50 (0.24, 1.04)	0.064*	0.83 (0.25, 2.77)
	not at all	317 (35.0)	9 (2.8%)	308 (97.2%)	0.18 (0.09, 0.37)	<0.001*	0.23(0.07, 0.74)**
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Watching television	at least once a week	773 (85.4)	79 (10.2%)	694 (89.8%)	1		1
	less than once a week	34 (3.8)	1 (2.9%)	33 (97.1%)	0.27 (0.04, 1.97)	0.195*	0.90 (0.08, 10.13)

	not at all	98 (10.8)	3 (3.1%)	95 (96.9%)	0.28 (0.09, 0.90)	0.03 2*	2.02 (0.35, 11.74)
	Total	905(100.0)	83 (9.2%)	822 (90.8%)			
Owning mobile	yes	793 (87.6)	81(10.2 %)	712 (89.8%)	1		1
	no	112 (12.4)	2 (1.8%)	110 (98.2%)	0.16 (0.04,.66)	0.01 1*	0.11 (0.01, 1.19)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Using internet	yes	449 (49.6)	56 (12.5%)	393 (87.5%)	1		
	no	456 (50.4)	27 (5.9%)	429 (94.1%)	0.44 (0.27, 0.71)	0.00 1*	0.90 (0.35, 2.33)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Ever habit of smoking	Yes	17 (1.9)	3 (17.6%)	14 (82.4%)	1		
	No	888 (98.1)	80 (9.0%)	808 (91.0%)	0.46 (0.13, 1.64)	0.23 3*	0.88 (0.09, 8.30)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Ever chewed khat	Yes	130 (14.4)	12 (9.2%)	118 (90.8%)	1		
	No	775 (85.6)	71 (9.2%)	704 (90.8%)	0.99 (0.52, 1.89)	0.98 0	
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
History of drinking alcohol	Yes	148 (16.4)	14 (9.5%)	134 (90.5%)	1		
	No	757 (83.6)	69 (9.1%)	688 (90.9%)	0.99 (0.52, 1.89)	0.98 0	
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Medical and obstetrics factors							
Ever pregnancy	yes	823 (90.9)	73 (8.9%)	750 (91.1%)	1		
	no	82 (9.1)	10 (12.2%)	72 (87.8%)	1.43 (0.71,2.88)	0.32 2	
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Number of children	0-2	372 (45.4)	29(7.8%)	343 (92.2%)	1		
	3-4	322	32	290	1.31 (0.77,	0.32	

		(39.3)	(9.9%)	(90.1%)	2.21)	1	
	>=5	125 (15.3)	12 (9.6%)	113 (90.4%)	1.26 (0.62, 2.54)	0.527	
	Total	819 (100.0)	73 (8.9%)	746 (91.1%)			
Birth Interval	<3 Years	235 (26.0)	20 (8.5%)	215 (91.5%)	1		1
	3-5 Years	392 (43.3)	33 (8.4%)	359 (91.6%)	0.99 (0.55, 1.77)	0.968	1.05 (0.52, 2.14)
	>=5 Years	24 (2.7)	4 (16.7%)	20 (83.3%)	2.15 (0.67, 6.91)	0.199*	1.90 (0.45, 8.03)
	Total	651 (71.9)	57 (8.8%)	594 (91.2%)			
Number of ANC visit	<4	226 (29.12)	18 (8.0%)	208 (92.0%)	1		
	>=4	550 (70.88)	55 (10.0%)	495 (90.0%)	1.28 (0.74, 2.24)	0.379	
	Total	776 (100.00)	73 (9.4%)	703(90.6%)			
History of abortion	yes	159 (17.6)	16 (10.1%)	143 (89.9%)	1		
	no	746 (82.4)	67 (9.0%)	679 (91.0%)	0.88 (0.50, 1.57)	0.668	
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Family History of Cervical Cancer	yes	68 (7.5)	8 (11.8%)	60 (88.2%)	1		
	no	837 (92.5)	75 (9.0%)	762 (91.0%)	0.74 (0.34, 1.60)	0.443	
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Ever use of contraceptive	yes	730 (80.7)	61 (8.4%)	669 (91.6%)	1		1
	no	175 (19.3)	22 (12.6%)	153 (87.4%)	1.58 (0.94, 2.65)	0.085*	2.92 (1.10, 7.72)**
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Awareness on HIV self-status	No	185 (20.4)	6 (3.2%)	179 (96.8%)	1		
	Yes	720 (79.6)	77 (10.7%)	643(89.3%)	3.57 (1.53, 8.33)	0.003*	2.60 (0.64, 10.52)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			
Distance	<30 minute	361	46	315	1		

from health facility		(39.9)	(12.7%)	(87.3%)			
	>= 30 minute	544 (60.1)	37 (6.8%)	507 (93.2%)	0.50 (0.32, 0.79)	0.003*	0.64 (0.32, 1.27)
	Total	905 (100.0)	83 (9.2%)	822 (90.8%)			

1= Reference category, *= statistically associated in the crude analysis, **=statistically associated in the adjusted analysis

Chapter six: Discussion

The current study examines the knowledge, Attitude and practice of Cervical Cancer Screening and Associated Factors among Reproductive-age Women in the Jimma Town, Southwest Ethiopia. The finding revealed that of the total 905 (100%) women participated in the study, less than half, 49 (49.6%) of them have good knowledge of cervical cancer. This finding is almost similar with the study conducted in Tigray region Adigrat town, but slight higher than the study conducted in district of Gurage zone southern Ethiopia and study conducted in Gonder city North west Ethiopia (1–3), this could be due to difference in sample size, the current study is conducted with large power and difference in setting. In the present study 395 (43.6%), women have knowledge of cervical cancer symptoms which is slight lower than the study conducted in North west Gonder in which 249 (39.6%) of the respondents did not know any symptom and the rest knows **(**3**)**, this might due to the difference in setting and study period. Concerning knowledge of risk factors of participants around 488 (53.9%), known risk factors of cervical cancer and this finding is higher than the study conducted in Gonder north west Ethiopia (3). The study finds that from the total of study participants less than one in ten (9.2%) have ever been screened for cervical cancer which is slight lower than the study conducted in Gurage zone southern region**,**3.8% of respondents had practiced about cervical cancer screening (2).the difference might be related to awareness level and difference in study setting. On the other hand, in the current study out of total 83 (100%) women ever screened for cervical cancer, 56 (67.5%) were screened five years before, and 1(1.2%) was sceened positive respectively.The study revealed that A woman's educational level was significantly associated to knowledge of cervical cancer, the finding was supported by study conducted in the country and outside the country (1–4). In the present study a woman who has not ever utilized antenatal care service (ANC) was 88% (AOR=0.12; 95% CI: 0.03-0.60) less likely to have good knowledge of cervical cancer as compared to a woman who has ever utilized antenatal care service (ANC) which indicates that working tirelessly to increase the ANC uptake will be one potential package to help increase cervical cancer screening and in turn reduce premature death of women and mothers from cervical cancer.

Concerning Attitude of woman towards cervical cancer screening, women aged between 35-39 years and 45-49 years were 83% times more likely to have favorable attitude towards cervical cancer screening as compared to a woman aged between 30-34 years of age. Uneducated woman, a woman who completed a primary education and a woman who completed a secondary education was 85% and 60% less likely to have favorable attitude towards cervical cancer screening as compared to a woman who completed a higher education. Similarly, women's occupation was independently associated with attitude towards cervical cancer screening.

Conclusion

The study reveals that knowledge and practice of cervical cancer is low. Educational status, age Antenatal care follow up, distance from health facility, age at marriage are determinant variables of Knowledge, attitude and Practice towards cervical cancer screening.

Recommendations

Based on the findings here are recommendations:

- An intervention should be under taken from all concerned bodies (Government or Non-government) to increase awareness and practice of cervical cancer screening services, given Jimma University is planted in the center of the city the University and University community who are working in the area should give due emphasis to the emerging burden due to the prevalent of the disease.
- Should work at large on women's health, to increase early screening and treatment.

ANNEX

English version questionnaire

Jimma University: Collage of Medical Sciences, Department of Obstetrics and Gynecology

Information sheet of the participants

Greetings….

My name is _____ I am working as data collector in a study conducted by Jimma University post graduate student on **Knowledge, Attitude and practice regarding Cervical Cancer screening and associated factors Among Age Eligible Women in Jimma Town South west Ethiopia: Community based cross sectional study**. I would like to ask you a few questions about your personal characteristics; your knowledge and attitude towards cervical cancer screening and associated factors, this will help us to improve the prevention, control and treatment activities of cervical cancer by the information you provide us. Your response is very important and highly appreciable. I expect the interview may take only about 15-20 minutes.

You do not need to provide your name. Please be assured that all the information gathered will be kept strictly confidential. You can prefer not to respond to all or some of the questions and you can stop the interview at any time. Are you willing to participate in our study?

Thank you for your cooperation!!!

If you have any question, you can contact the principal investigator by the following address

Mobile phone: +251 913 98 89 41 Email: fanta026@yahoo.com

Declaration of informed voluntary consent (Informed consent sheet).

I understood the purpose, procedures, risks and benefits, issues of confidentiality, the rights of participating and the contact address for any queries. Therefore, I declare my voluntary consent to participate in the study and assure it with my signature.

Signature if the interviewee _____Date_____

Keble of the HH_____House number: _____Questionnaire code: _____

Name of the interviewer_____Date_____Signature_____

Name of the supervisor_____Date_____ Signature_____

	Questionnaire on Knowledge, Attitude and Practice regarding cervical cancer screening and associated factors in Jimma Town South West Ethiopia Among reproductive age women.	
1.0	**Socio demographic characteristics and economic questions**	
1.1	House hold ID **Lakkofsa Eenyummaa Maatii**	
1.2	**Zone** **Godina**	
1.3	**Kebele** **Ganda**	
1.4	**Head of household name** **Maqaa abbaa maatii/haadha maatii**	
1.5	**State your age in year**	----------years
1.6	**State your Religion?** 1.Orthodox Christian 2. Protestant 3. Catholic 4. Muslim 5. Other specify	----------
1.7	**Your current Marital status** 1. Single 2. Married 3. Divorced 4. Widow 5. Separated	
1.8	**How many people are living in your household?** How many children are there in your family between 1 to 9 years? How many infants are below 12 months?	---------- people

1.9	**Who decides on your own health?** 1.Only my husband 2. I myself 3. Both jointly 4. Others, specify	----------
10.0	**The highest level of education you have attained** 1. Not able to read & write 2. Able to read and write 3. Primary (1-8) 4. Secondary school (9-12) 5. College/University	
11.0	**Your main occupation** 1.Farmer 2. Government employee 3.Non-governmental employee 4. Merchant 5.Dailylaborers 6. House wife 7. Unemployed 8. Others	
12.0	**Are you the head of your household**	1.Yes 2. No
13.0	**What is the total monthly income of your family**	----------
14.0	**Sexual experience** a. Yes b. No	
15.0	**Age at first sex**	----------years
16.0	**Number of sexual partner** a. Single b. Multiple	
2.0	**Socio cultural & individual related question**	
2.1	Ever habit of smoking a. Yes b. No	
2.1.1	Are you still smoking? a. Yes b. No	
2.2	If yes for how many years	----------
2.3	Ever chewed chat a.Yes b. No	
2.3.1	Are you still chewing a. Yes b. No	
2.4	If yes for how many years	---------

2.5	History of alchol drinking a. Yes b. No	
2.5.1	Are you still drinking? a. Yes b. No	
2.6	If yes for how many years	----------
2.6	Do you know some one diagnosed with cervical cancer a. Yes b. No	
3.0	**Cervical cancer screening Knowledge related question**	
3.1	Have you ever heard about cervical cancer? 1.Yes 2. No	
3.2	**If yes where /who is the source of your information?** 1.Healthworker2.Internate/social media 3. Family 4. School 5. Other specify	
3.3	**Do you know any causes of Cervical Cancer?** a. Yes b. No	
3.4	**What are the causes of cervical cancer? (circle all that apply)** Initiation of intercourse at Early age Having Multiple sexual partners Having intercourse with person who has cervical Ca Sexual transmitted infection (STI) HIV infection Human papilloma virus (HPV) Old age	
3.5	Have you ever heard about cervical smear? a. Yes b. No	
3.5.1	If yes source----------	
3.6	Do you know how to prevent cervical cancer? a. Yes b.No	
3.7	What are the preventive mechanisms of cervical cancer? Avoiding multiple sexual partners	

	Avoiding HPV infection Vaccination against HPV other	
3.8	Do you know how to treat Cervical Cancer? a. Yes b. No	
3.9	What is the treatment option for cervical ca? a. Surgery b. Chemotherapy c. Radiotherapy d. Herbal remedies e. other	
3.10	Have you ever heard of HPV (Human Papillomavirus)/viral infection of Cervix? 1.Yes 2. No	
3.11	If yes, did you think HPV causes cervical cancer? 1.Yes 2. No	
3.4	If yes did you think HPV is a sexually transmitted virus? 1.Yes 2. No	
3.5	Are you aware of other risk factors for cervical cancer? 1.Yes 2. No	
3.6	If yes, which of the following have you heard? 1.Smoking 2. Immunosuppression (HIV) 3. Chlamydia infection 4.OCP (Oral contraceptive pills)/ Hormonal contraception.5. Exposure to sexually transmitted infections 6.Sexually active before age 20 7. Multiple sexual partner 8. Chronic corticosteroid use 9.Other specify	
3.7	**Symptoms of cervical cancer & risk factors:** Vaginal bleeding is symptom of cervical cancer: a. Yes b.No Vaginal foul smelling is symptom of cervical cancer: a. Yes b. No Post coital bleeding is symptom of CA a.Yes b. No Pain during sex is symptom of CA a. Yes b.No Post-menopausal bleeding is symptom of CA a. Yes b.No	

	Presence of Vaginal Discharge is symptom of CA a.Yes b.No Presence of Pelvic Pain is symptom of CA a.Yes b. No I don't know	
	Multiple sexual partners are a risk factor: a. yes b. No Early sexual intercourse is a risk a. Yes b. No Acquiring HPV is a risk a. Yes b. No Cigarette smoking is a risk a. Yes b. No Sexually transmitted infections a. Yes b. No Genetic predisposition a. Yes b.No I don't know	
3.7.1	**Prevention Methods (circle all that apply);** Avoiding multiple sexual partners prevent cervical cancer Avoiding early sexual intercourse Quitting smoking prevent cervical cancer Vaccination HPV prevent cervical cancer Screening prevent cervical cancer	
3.7.2	Did you know cancer of cervix can be treated a. Yes b. No c. Don't know	
3.7.3	Know cost of cervical cancer treatment: a. Free of charge b. Reasonable price c. Moderately expensive d.Very expensive e.Don't know	
3.7.4	Frequency of screening interval(frequency): a.Once a year b. Every three-year c. Every five-year d. Any other e. Don't know	
3.7.5	Who should be screened: a. Women of >25years b. Prostitutes c. Elderly women d. others specify	----------
3.7.6	For whom women did you think priority should be given for screening: a. Age 30-49 b. Age>25 years c.Age < 49 years d. I don't know	

3.7.7	Procedures used in cervical cancer screening a.VIA b.Pap smear c.Biopsy d. I don't know	
4.0	**Cervical cancer screening Attitude related question**	
4.1	**Carcinoma of cervix is cause of death.** a. agree b. strongly agree b. neutral d. Disagree e. strongly disagree **Any woman acquires cervical cancer** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Carcinoma of the cervix cannot be transmitted** a. agrees b. strongly agree c. neutral d. Disagree e. strongly disagree **Screening helps in prevention cervical cancer** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Screening for Cervical cancer benefits** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Any women should be willing for screening** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Screening for cervical cancer is not expensive** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **If screening for cancer is free, I will be screened** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Cervical cancer is highly prevalent in Ethiopia** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **All females can acquire cervical cancer** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Cervical cancer spreads from person to person** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Precancerous cervical cancer screening can prevent cervical cancer**	

	a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **Precancerous cervical cancer screening doesn't harm** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree **If Precancerous cervical cancer screening doesn't harm it is good to be screened** a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree	
	All women who screen for cervical cancer should be offered HIV testing and counselling a. agrees b. strongly agree b. neutral d. Disagree e. strongly disagree	
5.0	**Cervical cancer screening practice related questions**	
5.1	Have you ever screened for cervical cancer a. Yes b. No	
5.2	When was last time you screened a. Within past 3 years b. More than 5 years ago	
5.3	VIA test result a. positive b. negative	
5.4	How was the procedure in terms of infection prevention measures? Rate in terms of (excellent, v. good, good, poor, v.poor) Hand washing : PPE Environmental cleanliness Instrumental processing	
5.5	Are you aware of various screening procedures for cervical cancer? 1.Yes 2. No	
5.6	How many times you screened a. Once b. More than once	
5.7	Did you receive posttest counselling? A. Yes b. No	
5.6	If not screened yet, reason for not screened: a. It may be pain full b. I feel shy c.I am healthy d. My husband wouldn't agree e. screening test reveal ca f.it is expensive g. I'm not informed h. Haven't decided	

6.0	**Health facility related factors**	
6.1	Is there near by health facility? a. yes b. No	
6.2	How many hrs. it takes to reach health facility	----------hrs.
6.3	Did you ever told about cervical cancer screening during your previous visits to health center? a. Yes b. No	
6.4	If yes who do that? A. nurse in charge b. doctor in charge c. other specify	----------
6.5	How did you rate the service you got from health service about cervical cancer screening? a. Excellent b.V. good c. Good d.Satisfactory e.Poor	
6.6	How did you rate the cleanliness of the health facility usually you visit? a. Very clean b. somehow clean c. very dirty and have foul smell	
6.7	How did you rate the accessibility of service related to cervical cancer screening in nearby health center? a. Excellent b. V. good c. Good d. there is no kind of service at all	
7.0	**Medical and obstetrics related factors**	
7.1	Have you been pregnant before? a. Yes b. No	
7.2	Number of children	
7.3	Have you ever attended ANC a. Yes b. No	
7.4	Birth interval----------	
7.5	Age of first sexual intercourse	--------years
7.6	Age at first marriage	--------years
7.7	Number of sexual partners in life time a. One b. two c. more than two	

7.8	Age at first child birth	---------years
7.9	History of abortion a. Yes b.No	
7.10	Family history of cervical cancer a. Yea b. No	
7.11	Menstrual History a. Regular b. irregular c. post coital bleeding d.menopause	
7.12	Parity a. No b. 1-3 c. 4-5 d.>5	
7.13	Ever use of contraceptive methods, a. Yes b. No	
7.14	Type of contraceptive method a. Injectable b.OCP c. IUCD d.Implant e. Tuba ligation f.Condom	
7.15	Other corticosteroid use history a. Yes b. No	
7.16	HIV status (self-report) a. positive b. Negative c. unknown	
7.17	STI status a. Yes b.No	
7.18		
7.19	Did you have exposure to media like TV, Radio, internate to get health related information a. Yes b. No	

Thank you for your time and cooperation!

Ani maqaan koo_____kanaan jedhamu, ga'een hojii kootii funaanaa yaada qorrannoo waa'ee **Gaaffilee waa'ee beekumsaa, ilaalichaa fi gochaa haala qorrannoo kaanserii fiixee gadamessaa fi isa waliin kan walqabate dubartoota umurii walhormaataa keessa jiran irratti hunda'ee gaafatamu, magaalaa Jimmaa keessatti godhamu**: Yaada qooda fudhattootaa sassaabuu.

Yoo fedha keessan ta'e Gaaffilee muraasa waa'ee amala, beekumsa, yaadaa fi gochaa keessanii waa'ee kaanserii fiixee gadameessaa fi waantota isaa waliin walitti hidhata qaban baruuf isin gaafachuun barbaadda. Kunis, faayidaa isaa inni dhukkuba kana ittisuu, to'annoo jala oolchuu fi yaaluu irratti hubannoo akka argamannu nu gargaara jennee waan abdannuuf. Deebii isin nuuf kennitan faayidaa olaanaa nuuf qaba. Walumaa galatti naannoo daqiiqaa 15-20 isinitti fudhata. Maqaan keessan hin dha'amu/hin barbaachisu, akkasumas iccitiin keessan sirriitti eegamaa dha/ eenyuyyuu hin dhaga'u yookiin hin argu. Gaaffii keessaa sinitti hin tolle irratti deebii kennu dhiisuu Ni dandeessu.

Kanaafuu, hirmmaachuuf/deebii naaf kennuuf qophiidhaa?

Waan Na gargaataniif galanni keessa guddaa dha!!!

Yoo gaaffii qabaattan, teessoo kanaa gadiitiin gaaffii gaafachuu ni dandeessu.

Lakk bilb: +251913988941 E-mail: fanta026@yahoo.com

Unka waliigaltee fedhii qabaachuu gaaffii fi deebii taasisuuf guutamu:

An, waa'ee faayidaa, haala itti godhamu, bu'aa fi midhaa qorrannoo kanaa, iccitiin eegamuu yaada akkasumas itti hirmaachuu dhiisuu danda'uu fi gaaffii gaafachuu danda'uu hubadheen jira. Kanaaf, ani fedha kootiin itti hirmaachuu koo mallattoo kootiinan mirkaneessa.

Mallattoo itti hirmaataa qorannochaa:_____ Guyyaa_____

Ganda_____Lakk Manaa_____ Koodii Gaaffii_____

Maqaa isa gaafatuu_____ Guyyaa_____ Mallattoo_____

Maqaa hoogganaa qorrannoo_____Guyyaa_____Mallattoo_____

Gaaffilee waa'ee beekumsaa, ilaalichaa fi gochaa haala qorrannoo kaanserii fiixee gadamessaa fi isa waliin kan walqabate dubartoota umurii walhormaataa keessa jiran irratti hunda'ee gaafatamu, magaalaa Jimma, Kibba Lixa Itoophiyaa, bara 2020.

1.Umurii_____

2.Bakka Jireenyaa_____

3.Haala Ga'eelaa: A. Kan hin heerumne

B. kan heerumte C. kan hiikte D. Kan du'aan gargar bahan

4.Saal qunnamtii kan jalqabee? A. Eeyyee B. Lakki

5.Baayyina ijoollee_____

6.Haala barumsaa A. Dubbisuu fi barreessuu kan hin dandeenye

B. Dubbisuu fi barressuu kan danda'u

C. Sadarkaa tokkoffaa (1-8) kan xumure

D. Sadarkaa lammaffaa (9-12) kan xumure

E. Dippiloomaa fi isaa ol

7. Hojii idilee A. Hojii dhunfaa

B. Hojii Oggummaa

C. Hojii mootummaa

D. Hojii mana keessaa

E. Hojii kan biroo (ibsi)_____

8. Galiin ji'aa kan maatii keetii meeqa ta'aa? _____

9. Baayyina maatii waliin jiraatan kan umuriin isaanii wagga 10 ol ta'e meeqa?

_____

10. Ijoollee umuriin isaanii waggaa 1-9 ta'e meeqatu mana kana keessa jira?

_____Kan umuriin isaanii waggaa 1 gadi ta'e hoo meeqatu jira?

_____

11.waa'ee kaanserii gadameessaa dhagessee beektaa? A. Eeyyee B. Lakki

12.Waa'ee vaayirasii "human papilloma virus" jedhamu dhagessee beektaa? A. Eeyyee B. Lakki

13. Eeyyee yoo ta'e:

(a) vaayirasiin kun kaanserii gadameessaa akka fidu hubbannaa qabdaa?

A. Eeyyee B. Lakki

14. (b) vaayirasiin kun Saal qunnamtii daangaa hin qabneen akka daddarbu beektaa? A. Eeyyee B. Lakki

15. (A)Karaa kan biraa dhukkuba kanaaf nama saaxilu beektaa/hubbannaa isaa qabdaa?

A. Eeyyee B. Lakki

(B) Yoo Eeyyee ta'e isaan armaan gadii keessaa kam dhageessee beektaa?

A. Tamboo xuuxuu
B. Dhukkuba HIV qabaachuu
C. Dhukkuba coopxoo qabaachuu
D. Qoricha ulfa ittisu fayyadamuu
E. Ijoollee hedduu da'uu
F. Umurii ijoollumaatti da'umsa jalqabuu
G. Hiyyummaa
H. Maatii dhukkuba kaanserii qaban irraa dhalachuu
I. Nyaata madaalamaa argachuu dhabuu

J. Abbaa warraa dhukkuba kanaaf saaxilamuu danda'u waliin jiraachuu

K. Haadha warraa nama biroo waliin deemtu waliin jiraachuu

L. Umurii xiqqoon saal qunnamtii jalqabuu

16. (A) Waa'ee qorrannoo duraa kaanserii fiixee gadameessaa dhageessee beektaa?

A. Eeyyee B. Lakki

(B) Yoo dhageesseetta ta'e, kan armaan gadii keessa kam dhageesse?

1. Ijaan ilaaluu (VIA) 2. Paappi ismiirii 3. Kolpooskoppii 4. Kan biroo(ibsi)_____

(C) Yoo dhageesseetta ta'e, eenyurraa odeeffannoo argatte?

1. Mana yaalaa 2. Hiriyaa 3. Kitaaba dubbisuun/ barruulee irraa 4. TV/ Raadiyoo 5. Nama dhukkubichaan kanaan dura qabame irraa 6. Mana barnootaatii 7. Abbaa manaa irraa 8. Kilinika fayyaa waa'ee kanaa hubbannaa kennu 8. Kan biroo(ibsi)_____

17. (A) Waa'ee qorrannoo kaanserii fiixee gadameessaatiif kan kanaa gadii gootee beektaa?

1. Gadameessa kee qubaan ogeessi si ilaalee beekaa? A) Eeyyee B) Lakki

2. Gadameessa kee meeshaa gadameessa keessa galuun ilaalamtee beektaa?

A) Eeyyee B) Lakki

3. Paappi ismiiriin siif hojjetamee beekaa? A) Eeyee B) Lakki

4. Kan biroo(ibsi)_____

(B) Yoo Eeyyee ta'e, yoom siif hojjetamne? _____

(C) Yoo siif hin hojjetamne ta'e maaliif?

1. Akka hojjetamu hin barre

2. Akka barbaachisaa ta'e hin beeku

3. Bakka/Iddoo itti hojjetamu hin beekne

4. Yoo narratti argame jedhee waanan sodaadheefan

5. Gatiin isaa qaaliidha jedhee waanan yaadeef

6. Yaala isaa sodaadheen

7. Yaadan namoota irraa dhaga'een (dhukkubbii qabaachuu, durbummaa namaa balleesuu)

8. Kan biroo(ibsi)_____

18. (A) Waa'ee jiraachuu mala ittisa/ talaallii kaanserii fiixee gadameessaatiif kennamu dhageessee beektaa? 1. Eeyyee 2. Lakki

(B) Yoo dhageesse, eenyurraa dhageesse?

1. Mana yaalaa/ buufata fayyaa

2. Hiriyaa irraa

3. Kitaaba/ barruulee irraa

4. TV/ Raadiyoo/gaazetaa

5. Nama kanaan dura dhukkubichaan qabame irraa

6. Mana barnootaatii

7. Abbaa manaa / miseensa maatii irraa

8. Kilinika hubannoo akkasii kennan irraa

9. Kan biroo(ibsi)

19. (A) Yoo talaalliin kaanserii fiixee gadameessaa kenname haala fudhannaa keetii?

1. Ofii keetii? A. Eeyyee B. Lakki

2. Mucaa keetiif? A. Eeyyee B. Lakki

3. Firoota keetiif? A. Eeyyee B. Lakki

(B) Yoo Eeyyee jette sababa maaliif fudhachuu barbaadda?

1. Akka dhukkubicha ittisu waanan amanuuf

2. Waan ogeessi fayyaa akkan fudhadhu natti himeef

3. Waanan odeeffannoo isaa midiiyaalee irraa dhaga'eef

4. Of eeguun barbaachisaa waan ta'eef

5. Kan biroo (ibsi)_____

(C) Yoo lakki jette maaliif?

1. Odeeffannoo ga'aa waanan hin qabneef

2. Yaala midhaa dabalataa/hin barbaachifne waan na yaaddessuuf

3. Dhibecha sirriitti ittisa jedhee waanan itti hin amanneef

4. Gatiin isaa qaalii waan ta'eef

5. Namoonni waan sirriitti hin fudhanneef

6. Talaalliin akkasii akka namoonni saalquunnamtii namoota garaa garaa waliin raawwatan kakaasa

7. Haala amantii fi qomoo kootiitu na daangessa

8. Yeroo dheeraaf ni ittisa amantii jedhu waanan hin qabneef

9. Kan biroo (ibsi) _____

Annex III: Amharic version Subject information sheet

የተጠያቂውየመረጃቅጽ

Amhric ስሪት መጠይቅ

ጅማ ዩኒቨርስቲ-የህክምና ሳይንስ ኮሌጅ ፣ የማህፀንና ፅንስ ክፍል

የተሳታፊዎቹ የመረጃ ወረቀት
ሰላምታ…. ----------
ስሜ _____ ነው በጅማ ከተማ በደቡብ ምዕራብ ኢትዮጵያ ውስጥ በዕድሜ ብቁ ከሆኑት ሴቶች መካከል የጅማ ዩኒቨርሲቲ የድህረ ምረቃ ተማሪ በእውቀት ፣ በአመለካከት እና በተግባር ላይ በተደረገው ጥናት የጅማ ዩኒቨርሲቲ የድህረ ምረቃ ተማሪ በሠራው ጥናት ላይ እሰራለሁ ። ስለ የግል ባህሪዎችዎ ጥቂት ጥያቄዎችን ልጠይቅዎት እፈልጋለሁ; ስለ ማህጸን በር ካንሰር ምርመራ እና ተያያዥ ምክንያቶች ያለዎት እውቀት እና አመለካከት ይህ በሰጡን መረጃ የማህፀን በር ካንሰርን የመከላከል ፣ የመቆጣጠር እና የህክምና እንቅስቃሴዎችን ለማሻሻል ይረዳናል ። የእርስዎ ምላሽ በጣም አስፈላጊ እና በጣም አድናቆት ያለው ነው። ቃለመጠይቁ ከ15-20 ደቂቃ ያህል ብቻ ሊወስድ ይችላል ብዬ እጠብቃለሁ ። ስምዎን መስጠት አያስፈልግዎትም ። እባክዎ የተሰበሰቡት መረጃዎች በሙሉ በሚስጥር እንደሚጠበቁ እርግጠኛ ይሁኑ። ለሁሉም ወይም ለአንዳንድ ጥያቄዎች መልስ ላለመስጠት መምረጥ ይችላሉ እናም ቃለመጠይቁን በማንኛውም ጊዜ ማቆም ይችላሉ ። በእኛ ጥናት ውስጥ ለመሳተፍ ፈቃደኛ ነዎት?
ለትብብርዎ እናመሰግናለን!!!
ማንኛውም ጥያቄ ካለዎት ዋናውን መርማሪ በሚከተለው አድራሻ ማነጋገር ይችላሉ
ሞባይል ስልክ: +251 913 98 89 41
ኢሜል: fanta026@yahoo.com

በመረጃ የተደገፈ ፈቃደኝነት መግለጫ (በመረጃ የተደገፈ የስምምነት ወረቀት)።

ዓላማውን ፣ አሰራሮችን ፣ አደጋዎችን እና ጥቅሞችን ፣ ሚስጥራዊነትን ጉዳዮች ፣ የተሳትፎ መብቶችን እና ለማንኛውም ጥያቄዎች የግንኙነት አድራሻ ተረድቻለሁ ። ስለሆነም በጥናቱ ለመሳተፍ በፈቃደኝነት ፈቃዴን አሳውቃለሁ በፊርማዬም አረጋግጣለሁ ።

ቃለ-መጠይቅ አድራጊው _____ ቀን_____ ከሆነ ፊርማ_____

የ HH_____ የቤት ቁጥር ኬብል _____ የጥያቄ መጠይቅ ኮድ _____

የቃለ መጠይቅ አድራጊው ስም_____ ቀን_____ ፊርማ ____

የተቆጣጣሪው ስም_____ ቀን_____ ፊርማ ____

በጅማ ከተማ በደቡብ ምዕራብ ኢትዮጵያ የማህፀን በር ካንሰር ምርመራን እና ተያያዥ ጉዳዮችን አስመልክቶ በእውቀት ፣ በአመለካከት እና በተግባር ዙሪያ መጠይቅ ከስነ ተዋልዶ ዕድሜ ሴቶች መካከል ።

የስነሕዝብ ዝርዝሮች

1. ዕድሜ----------
2. ነዋሪ----------
3. የጋብቻ ሁኔታ- 1. ያላገባ/ች 2.ያገባ/ች 3. የተፋታ/ች 4. የሞተበት/ባት 5.ሌላ
4. ወሲባዊ ንቁ- 1. አዎ 2.የለም
5. የልጆች ብዛት 1. ≤3 2. 4 – 6 3.≥7
6. ትምህርታዊ ሁኔታ 1. ማንበብና መጻፍ 2. የመጀመሪያ ደረጃ ትምህርት 3. ሁለተኛ ደረጃ ትምህርት 4. ከፍተኛ ትምህርት
7. የስራ ሁኔታ;
   1. ሥራ የሌለው
   2.- የመንግስት ሰራተኛ
   3.- የግል ሰራተኛ
   4. የንግድ ሥራ ባለቤት
   5.የቀድሞው / የአሁኑ ወታደራዊ አባል
   6.የቀድሞው / የአሁኑ የርቀት አሽከርካሪ
   7.የቀድሞው / የአሁኑ የንግድ ወሲባዊ ሠራተኛ
   8.ሰ-ዕለታዊ ሠራተኛ
   9. ጡረታና

8. የቤተሰብዎ አጠቃላይ ወርሃዊ ገቢ ስንት ነው? ----------
9. በቤተሰብዎ ውስጥ ከ 10 በላይ ስንት ሰዎች አሉ?----------
10. ከ 1 እስከ 9 ዓመት ባለው ጊዜ ውስጥ በቤተሰብዎ ውስጥ ስንት ልጆች አሉ? ስንት ሕፃናት ከ 12 ወር በታች ናቸው? ----------
11. ስለ የማህጸን ጫፍ ካንሰር ሰምተሃል? 1.አዎ 2. አይ
12. ስለ ኤች.ፒ.ቪ (ሂውማን ፓፒሎማቫይረስ)/ስለ ሰርቪክስ የቫይረስ ኢንፌክሽን ሰምተሃል? 1. አዎ 2.አይ
13. አዎ ከሆነ 1. ኤች.ፒ.ቪ የማህጸን ጫፍ ካንሰርን እንደሚያመጣ ያውቃሉ? 1.አዎ 2.አይ
14. ኤች.ፒ.ቪ በግብረ ሥጋ ግንኙነት የሚተላለፍ ስለመሆኑ ዕውቀት አለዎት? 1.አዎ 2. አይ
15. ለማህጸን በር ካንሰር ሌሎች ተጋላጭነት ያላቸውን ምክንያቶች ያውቃሉ? 1.አዎ 2.አይ
16. አዎ, ከሆነ ከሚከተሉት ውስጥ ስለ የትኛው ሰምተው ያውቃሉ?
   1. ማጨስ
   2. የበሽታ መከላከያ (ኤች.አይ.ቪ)
   3. ክላሚዲያ ኢንፌክሽን
   4. ኦ.ሲ.ፒ (በአፍ የሚወሰድ የእርግዝና መከላከያ ክኒን) / የሆርሞን መከላከያ ።
   5. ብዙ የሙሉ ጊዜ እርግዝናዎች

6. ወጣት ዕድሜ በመጀመሪያ የሙሉ ጊዜ እርግዝና
7. ድህነት / ዝቅተኛ ማህበራዊ-ኢኮኖሚያዊ ሁኔታ
8. የማህፀን በር ካንሰር የቤተሰብ ታሪክ
9. አመጋገብ (በአትክልትና ፍራፍሬ አነስተኛ ነው)
10. ከፍተኛ ተጋላጭነት ያለው ወንድ አጋር
11. ብዙ ተጋላጭነት ያላቸው ሴቶች
12. በኩይስ ዕድሜ ላይ ያለ ዕድሜ

17. ለማህጸን በር ካንሰር የተለያዩ የማጣሪያ አሰራሮችን ያውቃሉ? 1.አዎ 2.አይ

አዎ ከሆነ ስለ የትኛው አሰራር ሰምተሃል?

1. ቀጥተኛ የእይታ ምርመራ
2. የፓፕ ስሚር
3. የኮልፖስኮፒ
4. ሌሎች (እባክዎን ይጥቀሱ_____)

አዎ ከሆነ የመረጃ ምንጭዎ ምንድ ነው?

1. የሆስፒታል ምንጭ /የቤተሰብ ዶክተር
2. ጓደኞች
3. መጽሐፍት/መጽሔቶች
4. ቴሌቪዥን/ሬዲዮ /ጋዜጣ(ሚዲያ)
5. ቀድሞውኑ የማሕፀን በር ካንሰር ካለበት ሰው
6. ትምህርት ቤት
7. ባል/ሌሎች የቤተሰብ አባላት
8. የግንዛቤ ክሊኒክ

18. ለማህፀን በር ካንሰር የሚከተለውን የማጣራት ሂደት አካሂደዋልን?

1. በሴት ብልት ምርመራ 1. አዎ 2. የለም
2. በአንድ የትምህርት መስጫ ፈተና 1. አዎ 2. የለም
3. ፓፕ ስሚር 1. አዎ 2. አይ
4. ሌሎች (እባክዎን ይጥቀሱ_____)

1. አዎ ከሆነ ለመጨረሻ ጊዜ መቼ ነበር? _____
2. አይ ከሆነ ለምን?

1.አላወቀም / አላወቀም
2. ምንም ፍላጎት እንደሌለ ተሰማ
3.በአከባቢው የት ሊከናወን እንደሚችል አታውቁም
4.አዎንታዊ ውጤትን መፍራት
5.በጣም ውድ
6.ህክምናን መፍራት
7.የውሸት እምነት (ድንግልና ማጣት ፣ አሳዛኝ አሰራር)
8.ሌሎች (ይጥቀሱ_____)

19.የ HPV በሽታ እና የማህጸን በር ካንሰርን ለመከላከል እንደ ፕሮፊለቲክ እርምጃ ስለ ማህጸን በር ካንሰር ክትባት(ኤች.ፒ.ቪ ክትባት-ቢቫለን እና አራት ማዕዘን) ሰምተሃል? 1.አዎ 2. አይ

1. አዎ ከሆነ የመረጃ ምንጭዎ ምንድ ነው?
   1. የሆስፒታል ምንጭ / የቤተሰብ ዶክተር
   2. ጓደኞች
   3. መጽሐፍት / መጽሔቶች
   4. ቴሌቪዥን / ሬዲዮ / ጋዜጣ (ሚዲያ)
   5. ቀድሞውኑ የማሕፀን በር ካንሰር ካለበት ሰው
   6. ትምህርት ቤት
   7. ባል / ሌሎች የቤተሰብ አባላት
   8. የግንዛቤ ክሊኒኮች
   9. ሌሎች (ይጥቀሱ _____)
20. ክትባቱን ብትቀበል / ክትባቱን ብትጠቀም?

   1. ለራስዎ 1. አዎ 2.አይ
   2. ለሴት ልጅዎ 1.አዎ 2. የለም
   3. ለሌሎች ዘመዶች 1.አዎ 2. አይ

1.አዎ ከሆነ ምክንያቶችዎ ምንድ ናቸው?

1. በሽታውን ይከላከላል ብሎ ማመን
2. በጤና እንክብካቤ አቅራቢ የሚሰጡ ክትባቶች እንዲሰጡ የተሰጡ ምክሮች
3. በመገናኛ ብዙሃን የተጫወቱት አዎንታዊ ሚና
4. አንዱን መጠበቅ አስፈላጊ ነው
5. ሌሎች (ይግለጹ_____)

2. መልስዎ ካልሆነ ፣ ምክንያቶችዎ ምንድናቸው?

1. ስለ ክትባቱ እና ስለ ማህጸን በር ካንሰር መረጃ እጥረት
2. የጎንዮሽ ጉዳቶች እና ደህንነት አሳሳቢ ጉዳዮች
3. ስለ ክትባቱ ውጤታማነት አሳሳቢ ጉዳዮች
4. የገንዘብ ወጪ
5. ደካማ የታካሚ ተቀባይነት
6. ከ STD ጋር የተዛመደ ክትባት ወሲባዊ እንቅስቃሴን የሚያበረታታ ነው
7. ሃይማኖታዊ እና ጎሳዊ
8. የረጅም ጊዜ ጥበቃ ዋስትና የለውም
9. ሌሎች (ይግለጹ_____)

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