



RESEARCH ARTICLE

CERVICAL CANCER SCREENING AND ASSOCIATED FACTORS AMONG WOMEN ATTENDING GYNECOLOGY OUT -PATIENT DEPARTMENT AND MATERNAL AND CHILD HEALTH ATMETTU KARLREFERRALHOSPITAL, SOUTH WEST, ETHIOPIA, 2018

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ABSTRACT

Introduction: Globally, Cervical cancer is the greatest threat to women's health, which is the fifth cause of death accounting for all types of cancer deaths among women. Globally, 528000 new cases each year and the second most common in developing countries around 445,000 new cases develop cervical cancer each year. Cervical screening behavior is the recommended for effective methods for prevention and early detection of cervical cancer. To increase the awareness of cervical cancer screening behavior health education is pivotal in any prevention program aimed in reducing the overall prevalence of cervical cancer in the community. **Objective:** To assess cervical cancer screening behavior and associated factors among women attending gynecology out -patient department and maternal and child health at mettukarl referral Hospital, South west, Ethiopia, 2018. **Methods:** Institutional based cross-sectional study was carried among 321 patients. Systematic random sampling was applied to select study subject and descriptive analysis were employed to describe the percentages and number distributions of the respondents for socio-demographic characteristics. The data was collected through interviewing of respondents and the data was entered EPI data version 4.2 and analyzed by using SPSS version 20. Bivariate analysis was also used to see the association of independent with the dependent variable. Crude and adjusted odds ratios with the corresponding 95% confidence intervals were computed. A P-value less or equal to 0.05 was considered statistically significant in this study. **Result:** In this study a total of 321 clients were participated in the study. The mean age was 35.79 with SD±11.46. The majority of participants 225(70.1%) were not intended cervical cancer screening while 96 (29.9%) were intended cervical screening respectively. Age ≥50 (AOR=26.603; 95% CI=8.167,86.662), age between 40-49 (AOR=4.152,95% CI=1.630,10.576), had smoking (AOR=0.179; 95%CI=0.087,0.369), women's who had STD AOR=0.169; 95% CI=0.82, 0.347), multiple sexual partner of the husband (AOR=1.221; 95% CI=0.687, 2.200) and were used contraceptive (AOR=0.172; 95%CI=0.070, 0.422) were found to have strong association with cervical screening behaviors. **Conclusion and Recommendations:** According to this finding, the overall rate of those participants who had good screening for cervical cancer behaviors were about 29.9%. Maternal age, using smoking, using contraceptives, presence of sexually transmitted disease, and having multiple sexual partner of the husband are predominantly stated factors associated with cervical screening behaviors.

Key words: Cervical Cancer, Screening Behavior, Associated Factor.

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INTRODUCTION

Globally, cervical cancer is always the greatest threat to women's health, it is the fifth cause of death accounting for all types of cancer deaths among women (Society, 2014). Globally, 528000 new cases cervical cancer each year and the second most common in developing countries around 445,000 new cases develop cervical cancer each year (Ferlay, 2015). The cervical cancer screening is to create access to early detection of cervical cancer and preventative therapy for millions of women worldwide (Harcourt *et al.*, 2014).

Global studies showed that early detection and treatment can prevent 75 per cent of cancers in developing countries, like other screening tests (Harcourt *et al.*, 2014). Early detection through screening and treatment of pre-cancerous lesions remains the best possible protection against cervical cancer (Guvenc *et al.*, 2011). Globally evidence shows that utilization of screening for prevention is very poor in developing countries. Unfortunately, it is estimated that one in every three U.S. adults is not getting screened as recommended (Debbie *et al.*, 2012; Harcourt *et al.*, 2014). In the US Screening for cervical cancer, which diagnosed in more than 12,990 women in 2016, can both detect cancer at early stage (Solomon, 2007). Prevalence and mortality rates are highest in developing countries; particularly sub-Saharan African nations estimated

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528,000 new cases of cervical cancer. Cervical cancer commonly occurs in women aged ranged from 25-65 years (Lee, 2014). It is caused by infection by human papilloma viruses that transmitted from individuals to individuals by sexual intercourse which may infect the areas around the cervix, anus, mouth and throat (Solomon, 2007). Of all the cancers, cervical cancer is the only one that has both an effective vaccine and screening program that can prevent disease and death (Adewole *et al.*, 2013). Cervical cancer, which is a malignant neoplasm, can be asymptomatic sometimes in early stages (Report, 2012). The symptoms that can be seen normally in advanced stages are persistent pelvic pain, unexplained weight loss, unusual bleeding during periods, bleeding and pain after sexual intercourse (Carmen *et al.*, 2016). Cervical screening behavior is recommended effective methods for prevention and early detection of cervical cancer (Birhanu *et al.*, 2012). However, awareness and knowledge about cervical screening behavior is lacking among lower socio-economic status and high cost and low awareness were found to be the primary barriers to cervical cancer (Catherine *et al.*, 2012). Cervical cancer screening is recommended in Ethiopia, but due to the limited resources, awareness and knowledge is not yet easily available (Gebremariam, 2016).

To increase the awareness of cervical cancer screening behavior, health education is pivotal in any prevention program aimed in reducing the overall prevalence of cervical cancer in the community. For health education to be effective and have an impact and good outcomes on cervical screening behavior (Solomon, 2007).

Statement of the problem: The incidence of cervical cancer screening varies greatly between developing and developed countries, where cervical cancer cases have been considerably abridged since the implementation of effective screening programs in developed countries (Bruni, 2016). However, in developing countries, the burden from cervical cancer remains high because of the difficulty in implementing cytology-based screening programs (Pap smear, AVI) (Chang, 2014). There are several barriers to the uptake of cervical cancer screening in low and middle-income countries (LMICs), which include low levels of knowledge of cervical cancer, limited awareness of prevention and early detection methods, fear of stigma associated with cancer diagnosis, concerns about spousal disapproval of screening, and concerns about violations of religious and cultural obligations of modesty during screening procedures (Guvenc, 2011).

Even though there is no national Cancer registry in Ethiopia, a survey from federal Ministry of Health and Addis Ababa Cancer registry shows that 64,000 new cases of Cancer occur annually where Cervical and Breast Cancer constitute the significant majority of these cases. The problem rose from too little people's awareness about cancer, very limited treatment facilities and too little governments and other stakeholder's intervention (WHO, 2014). Most of the women in the country visit health institution already with the advanced stage of cervical Cancer when they show up at the Hospitals. Cervical cancer is the leading cause of cancer mortality among Ethiopian women over the age of 30(17). On the other hand, the other study records show that 7600 Ethiopian women are diagnosed annually with cervical cancer and of these, 6000 die of the disease each year. Cervical cancer screening has been shown as the most

effective way to decrease cancer mortality among all women (Carmen, 2016). In Ethiopia, only 0.6% of all women, 1.6% of urban and 0.4% of rural women aged 18-69yrs screened every 3yrs (Knowledge, 2015; Li-Wei *et al.*, 2011). The major factors associated with cervical cancer screening are inadequate knowledge about the disease process, and Pap smear testing and clients negative attitude towards the procedure (Catherine, 2011; Ebabekela, 2016). Besides, poor knowledge about cervical cancer, and lack of awareness of available screening methods have been identified as the most important factors hindering the use of available cervical cancer screening services. Cervical cancer screening services are available in some areas of in Ethiopia (Maree, 2011), but screening is mostly conducted only when a woman seeks medical care for other reasons. Sometimes, screening is offered only if the woman presents with symptoms (Gebrie *et al.*, 2015). Despite the evidence that universal screening is important, women without symptoms are not routinely screened in many locations in Ethiopia. In Ethiopia methods for screening are different in compared to high-resource countries (Abate, 2015). Gap identified in Ethiopia is most of the women have no awareness about cervical cancer screening behavior. Little is known about the relative incidence of cervical cancer screening behavior. So this study is aimed to assess cervical screening awareness among women attending atmettukarl referral Hospital, South west, Ethiopia, 2018.

Significance of the study: Understanding cervical cancer screening is the key for identifying appropriate interventions for improvement of maternal health. Therefore, this study will provide more evidence on the screening behavior of cervical Cancer. The Finding of this study will give an insight to policy makers on cervical Cancer screening behavior and subsequent planning and implementation of maternal health programs in the Ethiopian communities. It will be used to increase the awareness of women on cervical screening behavior and as base line information for researchers, health professionals, NGOs and as a whole the society to understand about the cervical cancer screening.

Literature review: Cervical cancer screening Prior to WHO's recommendation to use Visual Inspection with Acetic Acid (VIA) as screening methods in low resource countries, multiple research studies examined VIA for their accuracy and sensitivity in detecting Cervical Cancer (Ali, 2012). Both these tests were established to be convenient, affordable, and accurate (NorMasitah, 2017). Descriptive study found in Tanzania that VIA has a higher accuracy than Pap test for detection of precancerous lesions of the cervix, and affirmed that this test is adequate and cost-effective. VIA screening also has been found to be as sensitive and accurate in detecting any precancerous cells, which are identified by the Pap test and confirmed by cervical biopsy (Mosavel, 2010). According to study done in Ethiopia early screening for cervical cancer is a key intervention in reduction of maternal deaths. Health care workers have a significant contribution to improve cervical cancer screening practice among women and inexpensive, "screen and treat" approach to cervical cancer prevention (Lyimo *et al.*, 2012; Dulla1, 2017). Universal screening is not yet available for women, the services that are available may not be utilized to their full potential (WHO, 2015). The high prevalence of morbidity and mortality associated with cervical cancer among Ethiopian women underscore the importance of identifying the factors that contribute to the current low utilization of available screening services (Carmen, 2016).

In Ethiopia studies identifies cervical cancer screening as an effective strategy to prevent and cure for women in low-resource countries (Solomon *et al.*, 2007). To prevent suffering, death, and other consequences that can result from Cervical cancer, effective education and intervention programs to increase cervical cancer screening essential (Mihret, 2014). If education and intervention are to be effective, it is essential to investigate, identify, and incorporate the predictive belief factors of Ethiopian women that impact cervical cancer screening implementation (Addis Tesfa, 2010). While it is understandable that women may not undergo cervical cancer screening when there are structural barriers (College, 2012). It is imperative to investigate the belief factors that may contribute to their behavior when the structural barriers are mitigated. The findings of the present study will help reveal the belief factors that predict or influence the utilization of cervical cancer screening, potentially increasing the effectiveness of current education and intervention efforts. The association between belief factors and cervical cancer screening acceptance has been studied with various populations in different countries (Africa, 2015).

Ethiopia has a population of 29.43 million women ages 30 years and older who are at risk of developing cervical cancer. Current estimates indicate that every year 7600 women are diagnosed with cervical cancer and 6000 die from the disease. Cervical cancer ranks as the 2nd most frequent cancer among women in Ethiopia and the leading cause of cancer related deaths among Ethiopian women (Adewole, 2013). Several barriers to cancer screening have been reported; these include a lack of awareness of the importance of screening, inadequate access to healthcare, aversion to the discomforts of screening, fear of finding cancer and logistic barriers such as having to take time of work for screening (College, 2016) However, there is a little study conducted on cervical cancer screening behavior in Ethiopia. Some findings of the study conducted in Tigray begin the development of evidence needed to improve the utilization of cervical cancer screening and thereby decrease cervical cancer incidence among women in Ethiopia (Ferlay, 2015). It is also expected that the number of new Cancer cases could rise to 70 % over the next two decades that is from 14 million to 22 million in 2030. Unfortunately more than 60 % of the world's total new Cancer cases occur in developing countries like Ethiopia (Jung, 2015). Lack of screening in this low-resource country could be related to structural factors, such as affordability, accessibility, and availability (Satyal, 2013; Determinants, 2012) Most of the services that are available, especially in hospital settings, are opportunistic at best. Opportunistic screening refers to services provided, such as Cervical cancer screening, only when a woman presents to seek medical care for other reasons (Satyal, 2013).

Cervical cancer screening Finding of the study done in Thailand revealed that nurses who were age greater than thirty were less knowledgeable about cervical cancer screening behavior than who were less than age 30 (Fatjonakamber, 2014). According to the study done in China on cervical cancer screening behavior and its predictors among women aged 50 years or above. A population-based sample of 959 women selected, and examine the factors independently associated with cervical screening behavior. Nearly half the sample (48%) had never had a cervical smear test. Multivariable analyses showed that age, educational level, marital status, family history of cancer, smoking status has direct related to behavior

of CC. Misconceptions concerned with menopause may reduce women's perceived susceptibility to cervical cancer, especially if they are 50 or above, and exert a negative effect on their screening behavior (Carmen, 2016). Cross sectional study done in Zimbabwe revealed low knowledge levels, negative beliefs about the risk of developing cervical cancer and poor screening behaviors among health workers in Mudzi district. Training in cervical cancer, therefore, recommended for the health workers. However, the training should be combined with setting up facilities for cervical cancer screening behavior (Tarwireyi, 2015). According to study done in Ethiopia various factors including cultural, and beliefs about the disease and the health care system were found to affect the treatment seeking behavior for CC. One of the barriers included: stigma associated with disease, limited access to health services, the lack of awareness, and the asymptomatic nature of the disease. Major barrier to seeking treatment is the stigma and discrimination affected women experienced by their family and the community. As the community commonly believes the cause of CC is due to unacceptable social behaviors, women are therefore reluctant to disclose their condition due to the social consequences (Carmen, 2016).

Factors associated with CC screening: There are several factors influencing CC screening behavior. Involve **Personal**, demographic, and organizational factors. These predictable factors overlap in influencing CCS participation. Personal factor. More than 85% of the global burden occurs in developing countries, where it accounts for 13% of all female cancers for example High-risk regions are Eastern and Western Africa it is greater than 30 per 100,000, South America 23.9 per 100,000 Rates are lowest in Northern America and Australia/New Zealand(ASRs less than 6 per 100,000) (HPV, 2010). According to the study conducted in Kenya when asked about risk factors associated with the development of cervical cancer, previously screened women believed vaginal bleeding (15%), having multiple sex partners (30%), smoking (10%), having sexually transmitted diseases (10%), or use of contraceptives (20%) were associated with cervical cancer. Nearly all previously screened women (92%) believed that cervical cancer was curable if detected early, and 86% felt that screening should be conducted annually (sudenga, 2014).

According to the study conducted in Ethiopia there were several personal factors associated with poor utilization of cervical cancer screening. These include smoking, multiple sexual partners, high parity, age at first intercourse, age at first marriage, immune-suppression, and long-term use of contraceptives (Abate, 2015). Additionally, the consequence may include detecting Cervical Cancer at stage when it is difficult or impossible to treat (Lyimo, 2012). Thus, a lack of screening can also be considered an underlying attribute contributing to the diagnosis of Cervical Cancer in Ethiopia has the highest age-standardized incidence and mortality rate of Cervical Cancer (WHO, 2014). Therefore, a woman has to seek CCS when she is healthy and asymptomatic. If the pre-cancerous cells are treated, then the CC may be prevented (18). Although research has established that HPV vaccine is one of the most effective measures in preventing CC, its use in Ethiopia is challenging due to low public awareness and high cost (Debbie *et al.*, 2012). In other words, even though there may be occasional vaccination programs, HPV vaccination is reported to be impractical for Ethiopia due to resource scarcity (Li-Wei, 2011). Study done showed Arbaminch the

respondents had low awareness of cervical cancer and was not utilizing the services. There was also a lack of understanding of risk factors for cervical cancer. The major factors identified by the women that influence screening utilization were lack of knowledge about the need for cervical screening, fatalistic attitudes about cervical cancer and other aspects of health, low perceived susceptibility, having many contending issues, financial constraint, and emotional barriers (fear of having a positive result, embarrassment and anticipated shame (Gebru, 2011).

Organizational factor: United States' standards recommend that women must have CCS by 21 years of age and be screened at least every two years there are marked differences in guidelines for coverage of CCS between high-resource and low resource settings(8). In Colombia, researchers assessed the accuracy of VIA and concluded that VIA are a "good alternative" for screening. A review of the literature clearly indicates that VIA are cost-effective, accurate, and valid tests. Even with the accurate and cost-effective method for screening and established guidelines, however, the utilization of services that are available is not nearly optimal (Ahmedin Jemal, 2011). The study done in Nepal the lack of resources contributes to lower screening rates in low-resource countries (Satyal, 2013). In Tanzania, evaluated the feasibility and performance of screening for CC using VIA or VILI with a sample size of 10,378 and found that both screening tests were accurate (Remes, 2012). These barriers involve structural, and belief factors. These predictable factors overlap in influencing CCS participation. The literature suggests there is a pattern of structural factors influencing the CCS participation or behavior, by first influencing women's perceptions and beliefs (Abate, 2015). Finding of study done in Ethiopia based screening programs is problematic in low-resource settings due to barriers such as difficulties in contacting patients, transportation availability and cost, clinic hours, and childcare needs(19). Three general categories of barriers to cervical cancer screening have been identified in literature the first category includes the structural barriers, some of which include availability, accessibility, and affordability. The second category includes the demographic attributes, and the third category includes the belief factors (Jemal, 2012)

Socio-economic factors: The study done in china states that respondents in older age groups were less likely to have had a cervical smear test Odds Ratios (OR) for women aged 60–69, 70–79 and 80 or above. Study reported in Zimbabwe that age, income, smoking status, and education were significant predictors of adherence to CCS (Abate, 2015). Further, while investigating women's knowledge of the perceived barriers to CCS, the thematic analysis identified that interplay of social and personal barriers influenced women's poor presentation for CCS. In another quantitative study conducted in Nigerian women aware of CCS (N=3,712) to evaluate reasons behind failure to participate in CCS, researchers found that knowledge of CC, education, income and age made a significant impact on CCS (Babatunji, 2013). According to the study done in Ethiopia among the total participants (209), 167(79.90%) were between 20-24 years of age with a mean age of 21(SD ± 1.60) years. more than half of the respondents were orthodox (53.59%) and 118 (56.46%) were Amhara in ethnicity. Regarding to marital status the majority 187(89.47%) was single. Most of the respondent, (59.33%) had monthly income of 200- 500 birr (Kebadnew Mulatu, 2016). According to study done in hosanna the median age of the study subjects was

found to be 28 years with standard deviation of ±6.83. Most of the respondents, 366 (62.8%), were currently married. Majority of the respondents, 127 (21.8%), were government employees in their occupation. the minimum and maximum monthly income of study participants was 11USD and 1913USD respectively (Yitagesu Habtu, 2017).

Summary of the literatures: Early screening for cervical cancer is a key intervention in reduction of maternal deaths. . Health care workers have a significant contribution to improve cervical cancer screening practice among women and inexpensive, "screen and treat" approach to cervical cancer prevention. Increasing awareness on Cervical cancer screening as an effective strategy to prevent and cure for women in low-resource countries. Cervical cancer screening behavior various factors including cultural, and beliefs about the disease and the health care system were found to affect the treatment seeking behavior for CC. One of the barriers included: stigma associated with disease, limited access to health services, the lack of awareness, and the asymptomatic nature of the disease. Therefore, the purpose of this study isto assess Cervical cancer screening behavior and associated factors among women attending gynecology out -patient department and maternal and child health at mettukarl referral Hospital, South west, Ethiopia, 201

Objective

General objective: To assess awareness on Cervical cancer screening and associated factors among women attending gynecology out -patient department and maternal and child health atmettukarl referral Hospital, South west, Ethiopia, 2018.

Specific objectives

- To asses awareness on the cervical cancer screening among women attending GYN OPD and MCH at, mettukarl referral Hospital, South west, Ethiopia, 2018
- To identify factors associated to cervical cancer screening among women attending GYN OPD and MCH atmettukarl referral Hospital, South, west, Ethiopia, 2018

METHODS AND MATERIALS

Study area and period: The study area was governmental hospitals in Ilubabor zone. One of oromia region which is located 600 km away from the capital city, Addis Ababa, Ethiopia. It is bordered on the south by the south nation , nationality and Peoples , on the southwest by the Gambela, on the west by kelemwelega zone , on the north by mirabwellega zone , and Benishanigul -gumuz Region, on the northwest by misirakwelega zone , and on the east by Jima zone . with an area of 15,135.33 square kilometers. There are two public hospitals (mettukarl referral hospital and darimu hospital) which are delivering maternal and child health service.

Study design: Institutional based cross sectional study design was used to assess cervical cancer screening awreness and associated factors among women attending Gynecology, out -patient department and maternal and child health at mettukarl referral hospital.

Source of Population: All women's who came to mettukarl referral hospital outpatient department for all service during data collection period.

Study populations: All women patients who visiting to Gynecology out-patient department and maternal and child health at mettukarlreferral Hospital during data collection period.

Inclusion and exclusion criteria

Inclusion Criteria

All women attending gynecological out patients at the time of data collection

Exclusion Criteria

Women who are acutely sick at the time of data collation and age less than 21

Sample size determination: Sample size calculation is based on single population proportion formula as follow.

$$n = \frac{(z\alpha/2)^2 p (1-p)}{d^2}$$

$$n_0 = \frac{(1.96)^2 0.572(1-0.572)}{(0.05)^2}$$

$$n = 376$$

Since the total population is less than 10,000, correction formula is used as follows:

$$n = \frac{n_0}{1 + \frac{n_0}{N}}$$

$$n = \frac{376}{1 + \frac{376}{2006}}$$

$$n = 292$$

Then, considering 10% non-response rate:

$$n = 292 \times 10\% + 292$$

$$n = 321$$

Where:

- ❖ n = Sample size required for the study
- ❖ $Z_{\alpha/2} = 1.96$, standardized normal distribution curve value for the 95% confidence interval
- ❖ p = 0.572 from previous study
- ❖ d = 0.05 degree of margin of error
- ❖ N = Total population for the study

Sampling and sampling procedure: Mettukarl referral hospital is selected for this study, Gynecology outpatient department and MCH is selected purposively from the hospital. Total sample size is allocated to each compartment proportionally. Finally the actual study participants are selected by systematic random sampling technique which is $K = N/n = 2006/321 = 6$, then 2 is randomly selected. Then individual patients was selected every six by considering their order of visit as sampling frame.

Proportional allocation,

$$n_j = \frac{n \times N_j}{N}$$

Where: n_j = is the sample size of the jth unit

N_j = is population size of the unit

$n = n_1 + n_2 + n_3 + n_4 \dots$ is the total sample size (321)

$N = N_1 + N_2 + N_3 + N_4 + N_5 \dots$ is total population size (2006)

Variables

Dependent variables

- Cervical cancer screening

Independent variables

Socio demographic factors

- Age
- Sex
- Income
- Marital Status
- Ethnicity
- Religion
- Educational status

Personal factor

- Multiple sexual partners
- Early initiation of sex
- Multiparity
- Contraceptive use
- Fear of screening
- Smoking status

Organizational factor

- Availability
- Accessibility
- Resource

Operational Definitions: For the purpose of this study, the following definitions will be applied and used within the context in which they are explained:

Cervical cancer- means a disease in which cancer cells grow in the cervix.

Cervical cancer screening - means procedure used to detect abnormal cells of the cervix. In this study, screening procedures refer to VIA or a Pap smear.

Multiple sexual partners: Having lifetime partners greater than two.

Multiparty: Having parity greater than two

Early initiation of sex: Starting first sexual intercourse before the age of 18 years.

Contraceptive use: Defined as use either of the contraceptives: oral contraceptives (pills), injectable, implants, IUCD for more than or equals one month period.

Organizational barriers: Organizational barriers were factors which affected the accessibility of healthcare services to the women.

Data Collection technique: An interviewer administered semi structured questionnaire was adapted by reviewing similar studies (50). Data was collected by 6 trained nurses. Data was collected from the clients after getting verbal consent through informed consent in the health facility. Data was collected using structured interviewer administered questionnaire was prepared in English after reviewing literatures of similar surveys that have been carried out previously then final modified English questionnaire was translated to Amharic. The interview was taken 20 to 30 minute.

Data Quality Assurance: The questionnaires were pre-tested on 5% of the sample size at darimu district Hospital to avoid any confusion during actual data collection period. The data collectors were trained before actual data collection and the principal investigator was supervising the data collector closely. During data collection, both principal investigator and data collectors were check the data for its completeness and missing information at each point. Furthermore the data was coded, checked and cleared during entry.

Data Analysis After the collection of data, the questionnaire was checked for completeness and consistency. Then, the data template format was prepared, coded and entered in to Epi Data version 4.2. Then data was exported to SPSS version 21 for analysis. Descriptive analysis was employed to describe the percentages and distributions of the respondents for socio-demographic characteristics. Bivariate and multivariate analysis was used for association of independent variable with dependent variable. Crude and adjusted odds ratios with the corresponding 95% confidence intervals were computed. P-value <0.05 was considered statistically significant in this study. Then, the results were presented in the form of tables, graphs and charts

Ethical considerations: Paper of approval and letter for permission was obtained before the beginning of data collection from review board of School of Nursing and Midwifery, College of Health Sciences, mettu University. Permission letter was provided for mettukarl referral hospital. After that participants were explained clearly about the purpose and procedure of data collection, and then confidentiality and privacy were guaranteed. It is also cleared that participation were fully based on the willingness of participants using verbal consent.

RESULTS

Socio-Demographic Characteristics: This study assessed awareness on cervical cancer screening and associated factors. The total of 320 clients was participated in the study giving a response rate of 99% and most of the respondents(34.9%) were in the age range between 30-39 years, with the mean age of 35.79 with SD±11.46. Regarding to religion, the majority of the participants 169(52.6%) were orthodox Christian and the least

covers for catholic 33(10.3%). All the socio demographic characters are presented in the table below (Table1).

Reproductive health characteristic: Among the study participant, 253(78.8%) currently use contraceptives, among the reported, the majority of the participants 117(36.4%) were used implant as shown in the figure below. Among the study subjects, 147(45.8%) had regular menstrual history, and the least 28(8.7%) were no menses. The majority of respondents 184(57.3%) of their age at menarche were ≤ 12, 24(7.5. %) 15 and above years, respectively. Regarding coital bleeding the majority of participants 228(71.0%) had bleeding. Among the study subjects, 133(41.4%) had parity 2-4, were 58(18.1%) of the study participants had parity >5. Age of the respondents when they gave birth to their first child, 160(49.8%) was less than 20 years old, in the mean and standard deviation of age at first birth 1.59± 0.814years respectively. In addition, 199(62.0%) had average birth interval less than two years, were 52(16.2%) had average birth interval 2-3years. Among the participants 6(1.9%) had history of abortion and 127(39.6%) had family history of cervical cancer (see table 2).

Intention to use cervical cancer screening and barriers: characteristics of women screened for cervical cancer The majority of participants 225(70.1%) were not intended cervical cancer screening behavior while 96 (29.9%) were intended cervical screening respectively. Among women who had cervical screening test, 49(15.3%) were positive and 46(14.3%) were negative. Regarding the main reason for not intending to have cervical screening was lack of health education programs in this area 70(21.8%) while 37(11.5%) were due to the cost of price. Among participants, 147(45.8%) had cervical cancer screening plan as shown in the table below. Lifestyle and sexual behavior factors barriers characteristics of women screened for cervical cancer. Among the study participants 53(16.5%) had history of smoking. Concerning age for first sex, at the age of 17years old and above 249(77.6%) of the respondents had started sex and 72(22.4%) were age at first sex less than 16 years old. Among the study participants, 178(55.5%) had history of pelvic infection, 53(16.5%) had history of STI, and 51(15.9%) had history of STI in their husband (see Table 4).

Factors of cervical cancer screening: Bivariate analysis revealed that sixteen out of thirty two variables showed a significant association with cervical cancer screening behavior at a 5% level of significance. For further analysis, all independent variable which fulfilled the minimum requirement for multivariable logistic regression (had significant association at a p <0.25) were entered. The highest risk factors for not good cervical cancer screening behavior was found in those individuals with educational level Don't write and read 67 (20.9%), ≥901 average monthly income 200 (62.3%), age ≥18 at first marriage 211(65.7%), <2 average birth interval 99(62.0%). However, bad cervical cancer screening behavior was not statistically different among the above variables (P>0.05). The study participants those who have age greater than or equal to 50 were fourteen times more likely have bad cervical screening behavior (COR=13.830, 95% CI 5.466, 34.990) than those who have age 21-29 years. The participants who were use contraceptive had odds of 0.206 times cervical cancer screening (COR=0.206, 95% CI=0.094, 0.447) than those who did not use contraceptive. The participants who were smoking of had 23.9 times cervical cancer screening with (COR=0.239; 95% CI=0.130, 0.438) than

Table 1. Socio-demographic characteristics among women attending gynecology OPD and MCH at MK referral hospital, 2018

Socio demographic variables		Frequency(n)	Percent (%)
Age	21-29	109	34.0
	30-39	112	34.9
	40-49	68	21.2
	≥50	32	10.0
	Don't write and read	67	20.9
Level of education	Only read and write primary(1-4)	36	11.2
	primary(5-8)	48	15.0
	primary(5-8)	46	14.3
	secondary(9-10)	44	13.7
	Preparatory	26	8.1
	Diploma	32	10.0
	Higher	22	6.9
Marital status	Single	43	13.4
	Married	165	51.4
	Widowed	41	12.8
	Divorced	41	12.8
How old when you firstmarriage?	Separated	31	9.7
	≤15	18	5.6
	15-17	49	15.3
income	≥18	211	65.7
	451-900	116	36.1
Occupation	≥901	200	62.3
	House	89	27.7
	Merchant	57	17.8
	daily laborer	52	16.2
	Governmental	44	13.7
	Private	48	15.0
	Others	31	9.7
	Orthodox	169	52.6
Religion	Muslim	56	17.4
	Protestant	63	19.6
	Catholic	33	10.3

Table 2. Related to reproductive health characteristics among women attending gynecology OPD and MCH at MK referral hospital, 2018

Variables	Frequency(n)	Percentage (%)	
How old were you menarche	≤12	184	57.3
	13-14	113	35.2
	≥15	24	7.5
Menstrual history	Regular	147	45.8
	sometimes	98	30.5
	Always irregular	48	15.0
Coital bleeding	No menses	28	8.7
	No	228	71.0
Have you ever give birth	Yes	93	29.0
	No	49	15.3
How old when you give first birth	Yes	272	84.7
	<20	160	49.8
	20-25	71	22.1
	26-30	33	10.3
Average birth interval	>31	8	2.5
	<2	199	62.0
	2-3	52	16.2
Experience abortion	>3	22	6.9
	No	218	67.9
How many times do You have abortion	Yes	103	32.1
	1	82	25.5
	2-4	133	41.4
	>5	58	18.1
Family history	No	194	60.4
	Yes	127	39.6

Table 3. Intention to use cervical cancer screening and barriers characteristics among women attending gynecology OPD and MCH at MK referral hospital, 2018

Variables	Frequency(n)	Percentage(%)	
Screening test	Positive	49	15.3
	negative	46	14.3
Barrier of cervical cancer screening	1	38	11.8
	2	37	11.5
	3	70	21.8
	4	43	13.4
Do you have a plan for cervical screening	Yes	147	45.8
	No	63	19.6

Table 4. Lifestyle and sexual behavior factors barriers characteristics of women screened for cervical cancer in MK, Southern, Ethiopia, 2018

Variables		Frequency (n)	Percentage (%)
Have you ever smoke	No	268	83.5
	yes	53	16.5
How old were you when you first had sex	<16	72	22.4
	>17	249	77.6
Pelvic infection	No	143	44.5
	yes	178	55.5
Do you have STI	No	268	83.5
	yes	53	16.5
Partner STI	No	270	84.1
	yes	51	15.9
Sexual partner	1	178	55.5
	2	136	42.4
	≥3	7	2.2
	0	212	66.0
If yes how many	1	49	15.3
	≥2	60	18.7

Table 5. Results of bivariate and multivariate analysis for Cervical cancer screening behavior and associated factors among women attending gynecology out-patient department and maternal and child health at MK referral Hospital, South west, Ethiopia, 2018

Variable	Cervical screening		COR(95%CI)	AOR(95%CI)
	Yes, n (%)	No, n (%)		
Age	21-29	23(71.9%)	9(28.1%)	
	30-39	33(29.7%)	79(70.3%)	2.261(1.171, 4.364)
	40-49	23(33.8%)	45(66.2%)	2.766(1.345,5.689)
	≥50	17(15.6%)	92(84.4%)	13.830(5.466,34.990)
	Single	16(37.2%)	27(62.8%)	
Marital status	Married	37(28.7%)	128(71.3%)	2.032(0.715,5.775)
	Widowed	23(56.1%)	18(43.9%)	0.991(0.396,2.482)
	Divorce	13(31.7%)	28(68.3%)	4.381(1.543,12.44)
	Separated	7(22.6%)	24(77.4%)	1.592(0.547,4.634)
Used contraceptive	Yes	90(93.7%)	6(6.3%)	
	No	163(72.4%)	62(27.6%)	0.206(0.094,0.447)
IUCD	Yes	15(15.6%)	81(84.4%)	
	No	11(4.9%)	214(95.1%)	0.278(0.122,0.630)
	Regular	38(25.8%)	109(74.2%)	
Ministerial history	Sometimes	26(26.5%)	72(73.5%)	0.165(0.069,0.396)
	Always irregular	13(27.1%)	35(72.9%)	0.171(0.069,0.425)
	No menses	19(67.8)	9(32.2)	0.176(0.064,0.486)
Coital bleeding	Yes	42(43.7%)	54(56.3%)	
	No	51(22.7%)	174(77.3%)	0.377(0.226,0.627)
Parity	1	22(25.6%)	60(74.4%)	
	2-4	30(22.6%)	103(77.4%)	0.367(0.180,0.151)
	≥5	29(50%)	29(50%)	0.291(0.746,0.56)
Experience abortion	Yes	50(52.1%)	46(47.9%)	0.283(0.171,0.470)
	No	53(23.6%)	172(76.4%)	
Smoking	Yes	31(32.3%)	65(67.7%)	
	No	22(9.8%)	203(90.2%)	0.239(0.130,0.438)
Pelvic infection	Yes	81(84.4%)	15(15.6%)	0.140(0.076,0.258)
	No	97(43.1%)	128(56.9%)	
Presence of STD	Yes	38(39.6%)	58(60.4%)	0.109(0.109,0.212)
	No	15(6.6%)	210(93.4%)	
Partner STD	Yes	36(37.5%)	60(62.5%)	0.119(0.061,0.232)
	No	15(6.7%)	210(93.3%)	
sexual partners of the women	1	51(24.5%)	157(75.5%)	
	≥2	45(39.8%)	68(60.2%)	0.491(0.300,0.803)
Other lifetime sexual partners of the husband	0	43(21.7%)	155(78.3%)	
	1	21(30%)	49(70%)	0.200(0.109,0.368)
	≥2	32(60.4%)	21(39.6%)	0.754(0.352,1.6160)

P<0.05*, P<0.01**, P<0.001***

not practicing smoking, Women who had history of sexual transmitted diseases of had odds 0.109 times cervical cancer screening with (COR=0.109;95%CI=0.56,0.212) compared to those who did not have history of sexually transmitted diseases and Having two or more life time sexual partners of the husband had odds0.754 times bad cervical cancer screening behavior with(COR=0.754;95%CI=0.352,1.6160) compared to those individuals who had one sexual partner.

Those participants who had age ≥50 were about twenty six times more likely with (AOR=26.603 ;95%CI=8.167,86.662), age between 40-49 (AOR=4.152,95%CI=1.630,10.576)were four times more likely and age between 30-39 three times more likely had bad cervical screening behavior compared to those age between 21-29. In this study individuals who had smoking practices were a factor of 0.179 times less likely with (AOR=0.179;95CI=0.087,0.369) had bad cervical cancer

screening than those who had no smoking practices. Participants who were used contraceptive with a factor of 0.172 times less likely had cervical cancer screening behavior with (AOR=0.172; 95%CI=0.070, 0.422) compared to those who were not used any contraceptive. In addition, women's who had STD were more likely had association with cervical cancer screening behaviors with (AOR=0.169; 95%CI=0.82, 0.347) than who had no STD and respondents who had two or more life time sexual partners of the husband had a factor of one times more likely at risk for cervical cancer screening behavior with (AOR=2.973; 95%CI=1.414-6.247) compared to those respondents who had one sexual partner of the husband. (Table 5).

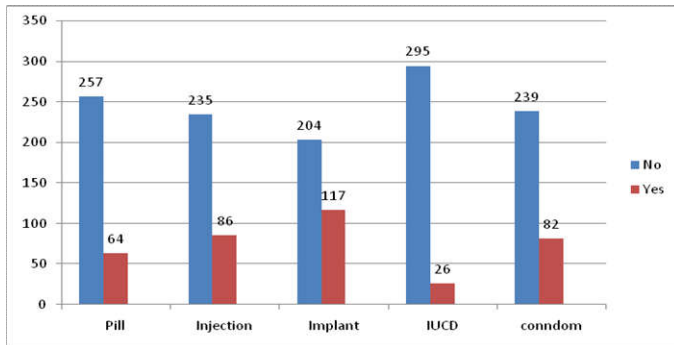


Figure 2. Description of women's contraceptive usage among women attending gynecology OPD and MCH at MK referral hospital, 2018

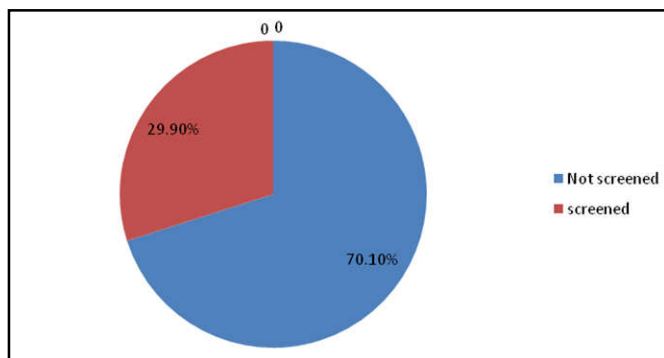


Fig 3. Intention to use cervical cancer screening and barriers characteristics of women screened for cervical cancer

DISCUSSION

The broad purpose of this research was to better understand cervical cancer screening and associated factors among women attending Gynecology, out-patient department and maternal and child health at MK referral hospital. Among the total of study participant 320, the current study found that the participation rate in screening for cervical cancer is about 29.9%. However, this finding is higher than 9.6% in GamoGofa, 18.8% in studies carried out in Nepal, 19.8% in Mekele and less than another study conducted in Uganda 48% (51,23,51,53). This may partly be due to difference in socio-demographic characteristic of the subjects of the studies and sample size difference. According to the current study, the main reason of not taking cervical cancer screening service is lack of health education. Factors associated with cervical cancer screening were also assessed. This study reveals that women's age, contraceptive usage, intending smoking, presence of STD and multiple sexual partner of the husband were found to be associated factor for cervical cancer screening behaviors. In this study age group of ≥ 50

years 26.603 times had association with cervical cancer screening awareness with (AOR=26.603; 95%CI=8.167, 86.662) compared to age between 21-29, while age 30-39 years 3.227 times had significant association cervical cancer screening behavior (AOR=3.227, 95% CI=1.396, 7.461) compared to age between 21-29. There are also researches with the same findings in Mekele, which showed that all other age groups of women years were have association with cervical screening behavior compared with age ≥ 50 . Additionally, study conducted in northwest Ethiopia showed that, woman in the age range of 30-39 were 1.78 times (AOR = 2.78, 95% CI = 1.71-7.29) higher than women age 21-29 had significantly associated with cervical cancer screening behavior (Tinsae, 2017; Carmen, 2016). This study also revealed that women's who had intended smoking were found to be 17.9% times associated factors for bad cervical cancer screening with (AOR=0.179; 95% CI=0.087, 0.369). Similar studies conducted in Kenya and this study showed that those participants who were used contraceptive had significant association cervical cancer screening behavior with (AOR=0.172; 95%CI=0.070, 0.422) than those who had no contraceptive usage. This is comparable with similar study conducted in Kenya showed that those individuals who were used contraceptive had significant association with cervical screening behavior (Sudenga, 2014). Another finding of the current study is having history of multiple sexual partner of the husband also found to have 2.973 times association for cervical cancer screening with (AOR=2.973; 95%CI=1.414-6.247) compared to having one sexual partner of the husband while having one sexual partner of the husband also found to have one times association for cervical cancer screening behavior than not having multiple sexual partner of the husband. The same result reported from mekelle showed that women who have history of multiple sexual partners were 1.635 times association for cervical cancer screening behavior with (AOR = 1.635, 95%CI = 1.094-2.443) Also study conducted in Yirgalem showed that having multiple sexual partner of the husband had significant association with cervical cancer screening behavior with (AOR=40; 95% CI: 22.44, 70.204) (Tinsae, 2017). In this study having history of sexual transmitted disease was 0.169 more likely had association with cervical cancer screening behavior with (AOR=0.169; 95%CI=0.82, 0.347). In addition, similar findings of study conducted in Finote Selam Town North west Ethiopia showed that having history of STDs were nearly 2.75 times had association with cervical cancer screening behavior with (AOR= 2.75, 95%CI: 1.24, 6.04) same result was also reported from Mekele, where women with history of sexually transmitted disease were 4.129 times had significant association with the cervical screening behavior with (AOR = 4.129, 95%CI = 2.281-7.476) (Teshahun Hailemariam1, 2017; Tinsae, 2017).

Strengths and limitations of the study

Limitations

- As the respondents had to remember when they had performed cervical cancer screening, there might have been recall bias.
- Being a cross sectional study; it cannot show cause-effect relationship between the variables studied.

Strengths

- Data quality control was maintained thoroughly by giving intensive training.

- This study to assess cervical cancer screening behavior is conducted for the first time in this area.
- The study might be useful for planning new intervention or education for cervical cancer screening.
- Multiple logistic regression was used to control the possible confounding factors in order to assess the relative effect of independent variables

Conclusion and Recommendation

Conclusion

According to this finding, the overall rate of those participants who had awareness on cervical cancer screening were about 29.9%. Maternal age, using smoking, using contraceptives, presence of sexually transmitted disease, and having multiple sexual partner of the husband are predominantly stated factors associated with cervical screening.

Recommendation

IHubabor Zone health bureau

- Focus preventive health measures for cervical cancer screening and its prevention.
- Should provide awareness campaigns targeting illiterate groups can be conducted in community so that they become motivated towards cervical cancer screening
- Should provide educational interventions to improve uptake of cervical screening with time and to increase self-efficacy and perceived focus of control about cervical cancer.
- Should done on awareness creation and sensitization of health workers on cervical cancer screening and sustaining national screening programs widely.

MK Hospital health professionals who are assigned to cervical cancer screening clinics and community health workers

- Health workers need to be marked at first since they have role in any potential screening activities in order to achieve screening coverage in the community.
- Conduct health education programs to the women eligible for screening attending gynecological clinic regarding prevention of cervical cancer and importance of cervical cancer screening.
- Should provide women with choice from whom they want to be screened
- Ministry of Health together with other stakeholders
- To embark on intensive awareness creation campaigns on cervical cancer to complement health education in health facilities.
- Ethiopian Cancer Association and other health groups should reading materials as well as different campaign for awareness creation.

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Annex

ABBREVIATIONS AND ACRONYMS

- AAPBCR Addis Ababa population based cancer registry
 CC Cervical Cancer
 CCS Cervical Cancer Screening
 CI Confidence Interval
 FIGO International Federation of Gynecology and Obstetrics
 GP General Practitioner
 HPV Human Papilloma Virus
 MOH Ministry Of Health
 MKH Mettu Karl Hospital
 ETB Ethiopian Birr
 VIA *Visual Inspection with Acetic Acid*
 PaP *Papanicolaou test*
 SPSS Statistical Packages for Social Sciences
 WHO World Health Organization