COLLEGE OF HEALTH SCIENCE, SCHOOL OF MEDICINE

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POSTGRADUATE PROGRAMM

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COLLEGE OF HEALTH SCIENCES, SCHOOL OF MEDICINE, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

POSTGRADUATE PROGRAM

KNOWLEDGE, ATTITUDES AND PRACTICES TOWARDS CERVICAL CANCER SCREENING AMONG HEALTH CARE PROFESSIONALS IN ADDIS ABABA CITY ADMINISTRATION;ADDIS ABABA,ETHIOPIA ,2021

CROSS-SECTIONAL STUDY

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APPROVAL SHEET

ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES, SCHOOL OF MEDICINE, DEPARTMENT OF OBSTETRICS AND GYNECOLOGY, POSTGRADUATE PROGRAM

I, Dr. Tujo Dechasa, hereby declare that this thesis entitled "**Knowledge, Attitudes And Practices Towards Cervical Cancer Screening Among Health Care Professionals In Addis Ababa City Administration;Addis Ababa,Ethiopia ,2021,** " in line with the requirement of graduate studies was fully undertaken by me under the guidance of my advisors and that I have, to the best of my knowledge and effort, avoided plagiarism or duplication of materials unless and otherwise cited and/or acknowledged and that it has not been so far submitted for any form of publication or consideration before the final approval.

Tujo Dechasa (MD) _____ _____

Principal investigator Signature Date

We hereby certify that we have read and evaluated this research thesis relating to **Knowledge, Attitudes And Practices Towards Cervical Cancer Screening Among Health Care Professionals In Addis Ababa City Administration;Addis Ababa,Ethiopia ,2021,** under our guidance from its inception up to in its current format and that it can be submitted for final approval in partial fulfillment to the Degree of Specialty in Obstetrics and Gynecology..

_____ _____ _____

1. Advisor Signature Date

_____ _____ _____

2. Advisor Signature Date

As a member of the MSc research open defense examination, I certify that I have read and evaluated the thesis prepared by Tujo Dechasa (MD), and examined the candidate. I recommend that the thesis be accepted as fulfilling the thesis requirements for the Degree of Specialty in Obstetrics and Gynecology.

_____ _____ _____

Examiner Signature Date

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ABBREVIATIONS AND ACRONYM

AAU	Addis Ababa University
AOD	Adjusted odd Ratio
EPI	Ethiopian national expanded program on immunization
HPV	Human Papilloma Virus
IARC	International Agency for Research Center
ICO	Institute of Catalan Oncology
IESO	Integrated Emergency Surgery Officers
MD	Medical Doctor
TASH	Tikur Anbessa Specialized Hospital
UK	United Kingdom
VIA	Visual Inspection with Acetic Acid
VILI	Visual Inspection with iodine
WHS	World Health Surve

Abstract

Back-ground: Cervical cancer is the commonest gynecologic cancer in the developing world. Over the past several decades, the incidence of cervical cancer has decreased in industrialized countries. This is mainly attributed to increased awareness and more effective screening and prevention strategies employed in these countries. Although there are evidence-based, affordable, fewer resources requiring, feasible interventions to carry out in low-level health facilities, and effective treatment modalities; the utilization of these screening methods is limited in low-income countries like Ethiopia. Prevention of cervical cancer in low-resource settings can be conducted by increasing the knowledge of cervical cancer screening and its practice by primary health care professionals (1, 2)

Objective: To assess the knowledge, attitudes, and practice of cervical cancer screening among health professionals working in Addis Ababa City Administration Health Facilities

Method: a cross-sectional study was conducted from May 1, 2021- June 15, 2021, among health professionals working in selected health Centers in Addis Ababa . A pre-tested, structured questionnaire and a checklist were used to collect data .The data was collected from 8 randomly selected health centers involving health professionals. Data was analyzed using SPSS version 25. Binary and multiple logistic regression analysis were used to look for an association between cervical cancer screening knowledge and socio-demographic variables.

Result: In this study 36% of the participants had good knowledge on cervical cancer screening, , Majority of participants 71(57%) had favoreable attitude towards cervical cancer screening. Untrained, lost to follow up ,and difficulty of doing the screening procedure were some reasons not to do cervical cancer screening practice. Age ≥40 years (AOR=20.8, 95%CI=3.6,118.9), male health provider(AOR=2.3, 95%CI=1.27, 4.22) ,working area,and having functioning Cervical Cancer screening(AOR=5.2, 95%CI=1.71,16.5) were the factors associated with better knowledge of cervical cancer screening.

Conclusion : The knowledge of the study participants on cervical cancer screening was low. Even those who had good knowledge on cervical cancer screening, has limited attitude and quite

low practice at Work. There is a need to look into the cervical screening services and the health provides role in the Uptake of the service in Addis Ababa.

1. Introduction

1.2 Back-gound

Cervical Cancer of the cervix uteri is the 3rd most common cancer among women worldwide, with an estimated 569,847 new cases and 311,365 deaths in 2018. (3). Cervical cancer is the 2nd most common female reproductive organ cancer in women aged 15 to 44 years in the world and Ethiopia. (1, 2) .About 6,294 new cervical cancer cases are diagnosed annually in Ethiopia, estimates for 2018. (2).The estimated coverage of cytology-based cervical cancer screening in Ethiopia is 1.6% in urban settings and 0.4% in rural areas (3).

Ethiopia launched a pilot Human Papilloma Virus (HPV) vaccination project in December 2015 targeting adolescent girls in the 9-13 year age group in Oromia and Tigray regions.Then scaled-up to Addis Ababa City in 2018 through a school-based approach to reach all eligible girls in both private and public schools. In 2019, Ethiopia incorporated *HPV vaccination as* a routine immunization program.

VIA screening combined with access to cryotherapy was piloted in Ethiopia by the FMOH in collaboration with Pathfinder. The service was introduced in 2009 as a single-visit approach to cervical cancer prevention integrated into a comprehensive care package for people living with HIV at 14 Hospitals.
The service was subsequently initiated in eleven additional health facilities (clinics of the Family Guidance Association of Ethiopia (FGA), Military Hospitals, and some other facilities) making the service available in a total of 25 health institutions.

Persistent infection of the cervix with “high risk” genotypes of human papillomavirus (HPV) is the major cause of precancerous lesions, which can lead to invasive cervical cancer if they are not treated. Progression to cancer usually takes many years, which allows clinicians for early

detection and time to treat lesions when they are found during screening. The goal of cervical cancer screening is to accurately detect high-grade precursor lesions of the cervix to allow timely treatment of cervical intraepithelial neoplasia (CIN). Persistent high-risk HPV infection is the causative agent of virtually all cervical cancers and its precursors. HPV test that can accurately detect high-risk HPV can be used both to identify women with existing precursor lesions and also to predict those who may be at risk for developing cervical pre-cancer at a later date. Therefore, the HPV test plays an important role in cervical cancer prevention programs. (4)

Visual inspection with acetic acid (VIA) is direct visual assessments of the cervix using a 3-5% acetic acid solution to visible whiten cervical lesions, which temporarily produces what is known as an aceto-white lesion (Sensitivity 66-96% and specificity 64-98%). It is low-cost, does not require laboratory infrastructure, and can provide immediate results. Furthermore, VIA is a key aspect of the "screen and treat" paradigm, where a patient can feasibly undergo treatment after VIA (or other screening technique in the paradigm) within a single visit. (4)

HPV vaccines are another way of preventing cervical cancer. Both vaccines are highly effective in protection against pre-cancer caused by HPV types 16 and 18 in 93–99%, which will result in a significant reduction of new cases of invasive cancer in the future. (4)
Most patients with cervical cancer in Ethiopia present at advanced stages leading to adverse outcomes. The late presentation of patients with cervical cancer in Ethiopia could be due to a lack of knowledge and awareness among these patients and inadequate screening mechanisms for early detection. Moreover, it has been found that the cost of treating late-stage cervical cancer is substantially higher than that of early-stage cancer. (5).

1.2. Statement of the Problem

Even though there are effective strategies in preventing cervical cancer;the application of these preventive methods varies across the world; especially the practice of cervical cancer screening. The uptake of cervical cancer screening and treatment is constrained by different categories of barriers at the individual, institutional, community, and public policy levels.(7, 9,10,11,12,13,14)

The Health Policy of Ethiopia integrated the cervical cancer prevention program to national health police to achieve the sustainable development goal(SDG).The Primary health care, particularly the Health Extension Program (HEP) and health centers, will play a central role in promoting the health of the community via health promotion and disease prevention to address risk factors for cervical cancer. Essential cervical cancer prevention, screening, treatment and care should be provided within the PHC (HCs and primary hospitals) and services need to be linked to the higher level through a functional referral network.

Litrature showed that there was a significant gap on overall knowledge of cervical cancer as well the availability of different cervical cancer screening methods among health providers in Ethiopia (6, 15, 16, 17, 19). Healthcare workers can play a central role in raising awareness of the general public, and therefore, their knowledge needs to be assessed and updated regularly.

2. Literature Review

Cervical cancer remains a major cause of morbidity and mortality among women in the world. Early screening for cervical cancer is a key intervention in the reduction of women's deaths. Health Care workers have a significant contribution to improve cervical cancer screening practice among women (6)

Cervical Cancer is the 3rd most common cancer among women worldwide. Cervical cancer is the 2nd most common female reproductive organ cancer in the women aged 15 to 44 years in the World, and, in Ethiopia. Several common risk factors recognized to be associated with cervical cancer worldwide include sexually transmitted diseases reproductive and sexual factors, behavioural factors and host factors Abnormal vaginal bleeding, foul-smelling vaginal discharge, and contact bleeding are recognized as the major symptoms of cervical cancer, and in many cases, women with cervical cancer report no symptom. HPV 16 and, 18 are the most common subtypes of HPV causing cervical cancer and are responsible for most of the cervical cancers worldwide. The association of cervical cancer and HPV implies that cervical cancer can be prevented by HPV vaccination.

A cross-sectional study by Leilah Zahedi et al from Haiti, Central Plateau in 2013, found out 81% health care workers in Haiti were stated pre-cancerous cells could be detected through screening, however, only 14.8% had ever performed a pap smear. (7)

A cross-sectional study by Rahman H, Kar S. done in India in 2012-2013 showed that 79.1% were aware of cancer cervix screening. Only 16.6% nurses, who were aware of a Pap smear (11.9% of the total sample), had ever undergone a Pap smear test. (8)

A cross-sectional study by AL-Amro et al from Jordanian, in 2020 found out only 156 (31.2%) of Jordanian women had been screened for cervical cancer. The study also showed that Healthcare provider encouragement was significant predictors of cervical cancer screening. To improve cervical screening uptake, structured screening program needs to be implemented in

collaboration with national partner and institutions to decrease the incidence of cervical cancer in Jordan. (9)

A cross-sectional study has done by MC CAREY, Catherine Grazia *et al.* in Cameroon in 2011 to assess knowledge and awareness of cervical cancer prevention among Cameroonian health care worker which includes doctors, nurses, midwife, and medical students in medical school showed 86.9% had a good level of knowledge on cervical cancer, 77.1% knew that there is a procedure used to detect premalignant cervical lesions and 37.6% of them mentioned visual inspection with acetic acid as a screening method. 11.4% of the respondents were screened for cervical cancer. (10)

A cross-sectional facility-based did by Charles Nkurunziza, Diomede Ntasumbumuyange, Lisa Bazzett-Matabele et al. in Rwanda in 2019 showed that only 17.2% reported having received training on visual inspection with acetic acid (VIA) cervical cancer screening and 56.3% of participants were found to have adequate basic knowledge of cervical cancer symptoms and appropriate next step in the case of symptoms. The study also showed that as there is a large gap in the number of care providers with enough skills to perform cervical cancer VIA screening at health centres. (11)

A descriptive cross-sectional study by Awodele, O. Adeyomoye, A.A.A., Awodele, D.F. *et al in Nigeria showed that* Nurses have good knowledge of cervical cancer, but they have a limited understanding of the types of cervical cancer screening techniques and poor disposition towards undergoing cervical cancer screening. They recommended that institutions should periodically organize seminars and training for health workers especially, the nurses which form a group of professionals that should give health education to women about cervical cancer. (12)

A cross-sectional study was done by C. C. Ifemelumma et al from Nigeria in 2019 on female nurses showed a big gap between knowledge of cervical cancer and the utilization of cervical screening services among female health workers. The study demonstrated that no organized educational programs and improved quality service delivery were the reason for not screening. Sensitization of female health workers about cervical cancer and the importance of screening through organized national programs for cervical cancer screening and having clear national policy guidelines on cervical cancer screening and accessible screening services with good treatment modalities and follow up programs for those screened in the country because these health workers play a pivotal role in educating and encouraging other women to use. (13)

Another cross-sectional study from Urasa M, Darj E. on Nurses work in Tanzania Hospital in 2011 showed that less than half of the nurses had adequate knowledge regarding cervical cancer and 84.6% had never had a Pap smear examination. The authors also found that not know where to go for the test, seeing no reason for the test, being afraid of the procedure, and being afraid of bad results were the most common reasons not to be screened (14)

The descriptive cross-sectional study was done in Machakos County, Kenya by Agnes Wavinya Nzioka et al. in 2018 to determine the utilization of cervical cancer screening services by Female health care worker showed that as only 25% of HCWs had utilized cervical cancer screening services. Professional levels and age are significant factors in the utilization of cervical cancer screening services. (15)

An institution-based cross-sectional study was conducted to assess the magnitude and factors affecting the practices of cervical cancer screening among female nurse in Mekelle Town, Tigray, Northern Ethiopia, by Mihret Gebreegziabher et al in 2014 found that cervical cancer screening practice was 10.7%. Attitude and workplace of the respondents were significantly associated with a history of cervical cancer screening practices. The study showed that the magnitude of cervical screening practice is very low among nurse health professionals (16).

Another cross-sectional study conducted in Arba Minch town and Arba Minch Zuria by Seyoum T. et al in 2016 showed that utilization of cervical cancer screening is 9.6%. The study also showed that association between service year utilization of cervical cancer screening knowledge of cervical cancer screening and utilization of cervical cancer screening. (17)

A Cross-sectional study was done by Catherine M. Kress et al. among health care professionals in Ethiopia in 2012 showed that overall knowledge surrounding cervical cancer was high, but awareness of aetiology and risk factors was low among nurses and midwives. 33% of health professionals performed any type of cervical cancer screening (18)

A cross-sectional study by Tsidkayehu Berhanu et al. on Health Extension Workers in Addis Ababa in 2018, Showed that more than half of health extension workers had a poor level of knowledge about cervical cancer and only 9.3% of the respondents were screened in the past five years. Feeling healthy fear of pain during screening and felt free of risk factors were common reasons for not being screened. Their attitude towards screening and practice of getting screened is also poor. (19)

To assess cervical cancer services and knowledge of health service providers in public health facilities.

A cross-sectional study by Getahun et al in Addis Ababa in three public health facilities in 2019 found that 93.5% of study participants know as cervical cancer was a preventable disease, 25.9% knew the screening intervals (20).

A systematized literature review of evaluations of cervical cancer screening programs implemented in resource-limited settings showed that visual inspection of the cervix with acetic acid (58.8%) was the most prevalent screening method followed by cytology testing (39.2%). It concluded that the number of cervical cancer screening implementation reports is limited globally, especially in low-income countries. Building collective implementation knowledge for cervical cancer screening services globally by program managers is recommended. (21)

3. Significance of the Study

In Ethiopia, although several studies have been conducted to assess the knowledge and practices of cervical cancer screening in the general population, especially in young girls, studies on healthcare staff have been limited. Healthcare workers can play a central role in raising awareness of the general public, and therefore, their knowledge needs to be assessed and updated regularly.

The purpose of this study is to assess knowledge and awareness of cervical cancer screening, as well as attitudes towards cervical cancer screening practices among health care providers in Ethiopia involved in women's primary care. Since cervical cancer screening is the primary care screening, assessing knowledge, awareness, and practice of cervical cancer screening in these health providers can decrease the incidence of cervical cancer because they are the first line to teach the general population and screen womens who are illegible for screening. This study will change the currently existing gap in knowledge and low practicing of screening cervical cancer in the country.

4. Objective

4.1 General Objective

- To assess health providers related factors associated with cervical cancer screening in Addis Ababa City Administration health facilities as one input to impove the screening program in Ethiopia.

4.2 Specific Objective

- To assess the knowledge of cervical screening amongst health care professionals working in Addis Ababa City Administration health facilities, Addis Ababa.

- To see the attitudes of cervical cancer screening amongst health care professionals working in Addis Ababa City Administration health facilities; Addis Ababa

- To assess the practice of cervical cancer screening among health care professionals working in Addis Ababa City Administration health facilities; Addis Ababa

5. Methods

5.1 Study Site and Design

This study was conducted in May1, 2021 to June 15, 2021, in Addis Ababa City, which is the capital city of Ethiopia. Administratively, the city is divided into ten sub-cities. There are 54 Hospitals and more than 100 health centers. The study design was facility-based cross-sectional study on eight Public health facilities selected conveniently from one sub-city of Addis Ababa City Administration.

5.2 Source of Population

Health professionals working in Addis Ababa, who were on service for the fiscal year of 2021

5.3 Study population

Health professionals (General practioner , nurses, and midwife, Health Officers) working in a Selected public health facilities in Addis Ababa health centers during the study period.

5.4 Inclusion Criteria

Health professionals (Nurses, and Midwives, Health Officer) working in Addis Ababa health centers with at least one year of clinical experience.

5.5 Exclusion Criteria

- Health workers who are unwell and unwilling to respond during data collection
- Health workers who are on leave during data collection
- Other health professionals (Laboratory Technologist, Radiographer and pharmacist) because are not primarily involved in providing cervical cancer screening

5.6 Sampling Technique

For the assessment of the health service providers knowledge cervical cancer screening, diagnosis and treatment, firstly, out of ten sub-cities in Addis Ababa, randomly one sub-city was selected by simple random sampling and eight health centers were selected and all health service

providers working that directly involved in women health care (Nurse, Health Officer, Midwifes) were included in the study.

5.7 Sampling Size

Using Single Population Proportion Formula; by assuming 95% confidence interval, 5% margin of error and proportion of cervical cancer screening practice 33% from the previous study was taken from a similar study done among Ethiopian health care workers (18)

$n = \frac{z\,2\,x\,(pq)}{d\,2}$ = 1.96 x1. 96 (0.33x 0.67) /0. 05x 0.05 =340

Adding 10% of no respondent participants

340+ 0. 1x 340= 368

5.8 Independent Variables

- ✓ Socio-demographic variables
- ✓ Years of work experience
- ✓ Type of profession
- ✓ Working place

5.9 Dependent Variables

- ✓ Knowledge
- ✓ Attitude
- ✓ The practice of cervical cancer screening

5.10 Operational Definitions

- **Cervical cancer screening**: Cervical Screening is testing of all women at risk of cervical cancer, most of who will be without symptoms.

- **Good knowledge**: Health professionals who score above mean on knowledge questions about cervical cancer screening.
- **Poor knowledge**: Health professionals who score below mean on knowledge questions about cervical cancer screening.
- **Favorable Attitude**: Health professionals who score above mean on attitude questions towards cervical cancer screening.
- **Unfavorable Attitude**: Health professionals who score below mean on attitude questions towards cervical cancer screening.
- **Good Practice**: A Health professional who has ever done screening for their clients during the time of study
- **Poor practice**: A Health professional who never screened a client for cervical cancer.

5.11 Data Collection and analysis

Data was collected by a structured questionnaire developed from previous Published literature and translated from English to Amharic language. The reliability of the questionnaire was checked and the questionnaire was used to elicit information from the respondents. Then the was questionnaire translated back to English language and entered into SPSS and analyzed using the statistical package SPSS version 25.

5.12 Data Quality Assurance

Training was given for data collectors and supervisors. Data completeness was checked and strictly controlled by the principal investigator and supervisors. Double data entering and random checking was done to ensure the validity of the study. Confidentiality and privacy of the participants will be kept during the training session and data collection time.

5.13 Ethical Consideration

The letter of permission was obtained from Addis Ababa University, School of Medicine and Gynecology and obstetrics department ethics committee for a review then to the college of health science and Addis Ababa city Health Bureau ethical review committee and Areda Kifle Katama

sub-city health Bureau and written informed consent was obtained from study participants before data collection. The anonymity and confidentiality of the participants were kept during data collection and analysis.

5.14 Dissemination Plan

The finding of this research will be submitted to the department of Gynecology and obstetrics and after approval it will be submitted to the Ethiopian minister of health and concerned NGO in the form of PowerPoint. The manuscript of the study will be submitted to relevant national and international journals for publication. The copy of the article will be placed in the library of the college of health science, AAU for future reference

6. Result

6.1 socio-demographic characteristics of study participants

In this study, 346 participants were involved making a response of 94%. Majority (55.5%) of the participants were in the age group of 25-29 years with mean age(SD) 29.7(5.5). Two-third (68.8%) of the study participants were Females, 67.3% orthodox in religion and more than half (54.3%) of them were single. Majority (59%) of the participants were nurses and 39.6% of them have ≤4 years' experience.

Table 1. sociodemographic characteristics of participants on knowledge, attitude and practice of cervical cancer screening in Addis Ababa, Ethiopia, 2021.(N=346)

Variable	frequency	Percent
Age of participant		
≤24	21	6.1
25-29	192	55.5
30-34	85	24.6
35-39	26	7.5
≥40	22	6.4
Sex of participants		
Male	108	31.2
Female	238	68.8
Marital status		
Singe	188	54.3
Married	153	44.2

Widowed	3	.9
Others	2	.6
Religion of participants		
Orthodox	233	67.3
Muslim	50	14.5
Catholic	13	3.8
Protestant	50	14.5
Profession of participants		
Health Officer	73	21.1
Nurse	204	59.0
Midwifery	69	19.9
year of experience		
≤4	137	39.6
5—8	144	41.6
≥9	65	18.8
working area(station) of participant		
maternity service room	62	17.9
Screening room	17	4.9
FP & EPI	82	23.7
ART clinic	33	9.5
OPD	152	43.9

6.2 Knowledge of participants about cervical cancer screening

In this study ,124(36%) had good knowledge as shown in the figure below.

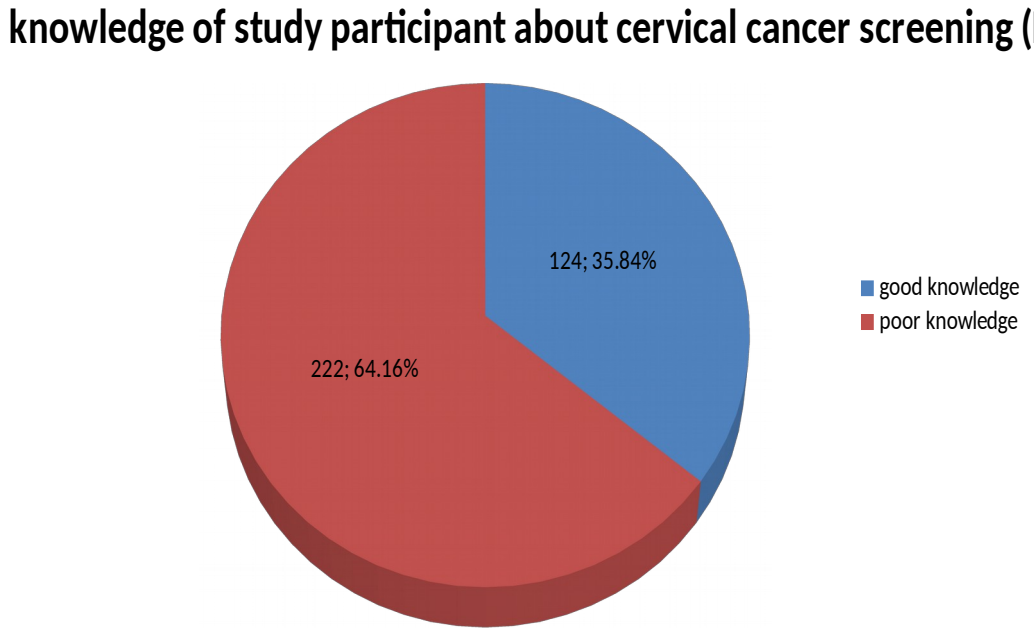

Figure 1. the overall knowledge of study participants on cervical cancer screening

The specific knowledge-based assessment indicator showed that, (96%) of participants knew as HPV etiology for Cervical Cancer, (98.8%) knew Cervical Cancer is preventable diseases. Majority of the participants (74%) knew HPV vaccine and regular cervical cancer screeing are preventive methods of cervical cancer. VIA or VILI test, Pap smear and HPV test are identified as cervical cancer screening by (64.7%), (39.9%) and (49.1%) of participants respectively. On the other hand, (99%)of study participants knew as precancerous cervical lesion is the treateable diseases and (53.2%), (51.4%), and (14.6%) of participants knew cryotherapy, LEEP,and cold knive conization treatment options for the precancerous cervical lesions respectively as shown on the table below

Table 2. knowledge-based characteristics of study participants on cervical cancer screening *(N=346)*

Variables	Frequency	Percent

HPV as Etiology of cervical cancer	332	96.0
Female infected by HPV	274	79.2
Clinical manifestation		
-post coital bleeding	224	64.7
-Intermenstrual bleeding	102	29.5
- Pain during sex	247	71.4
-Foul smelling vaginal discharge	232	67.1
-Unexplained weight loss	95	27.5
-Anemia	61	17.6
-cervical swelling		41.3
Risk factor		
-Smoking	143	41.3
-multiple sexual partners	250	72.3
-Multi-parity		
-Early sexual intercourse	198	57.2
-long term hormonal contraceptive use	33	9.5
-immune deficiency	39	11.3
Prevention methods		
-Cervical cancer is preventable cancer?	342	98.8
-Abstinence of sexual activity	101	29.2
-Use of condom	62	17.9
-Vaccination	249	72.0
-Regular Cervical cancer screening	257	74.3
-Age of vaccination	286	82.7
-Age of cervical cancer screening		
➢ age less than 30 years with risk factor	57	16.5
➢ age between 30-49 years	222	64.2
Screening method		
-VIA or VILI	224	64.7
-Pap smear	138	39.9
-HPV test	170	49.1

Diagnotic Methods			
-punch Biopsy		171	49.4
-Colposcopy		60	17.3
-Endocervical curettage		195	56.4
Cold knife Conization		74	21.4
Is it possible to treat pre-cancerous cervical lesion?			
	Yes	344	99.4
	No	2	0.6
Treatment Options			
-Cryotherapy		184	53.2
-LEEP		178	51.4
-Cold knife Conization		50	14.6

6.3 Attitude of participants who have good knowledge cervical cancer screening

Among the participants with good knowledge,(124/ 346), favaourable attitude towards cervical cancer screening was found on 71(57%) while 53(43%) had unfavoreable attitude as shown in the figure below

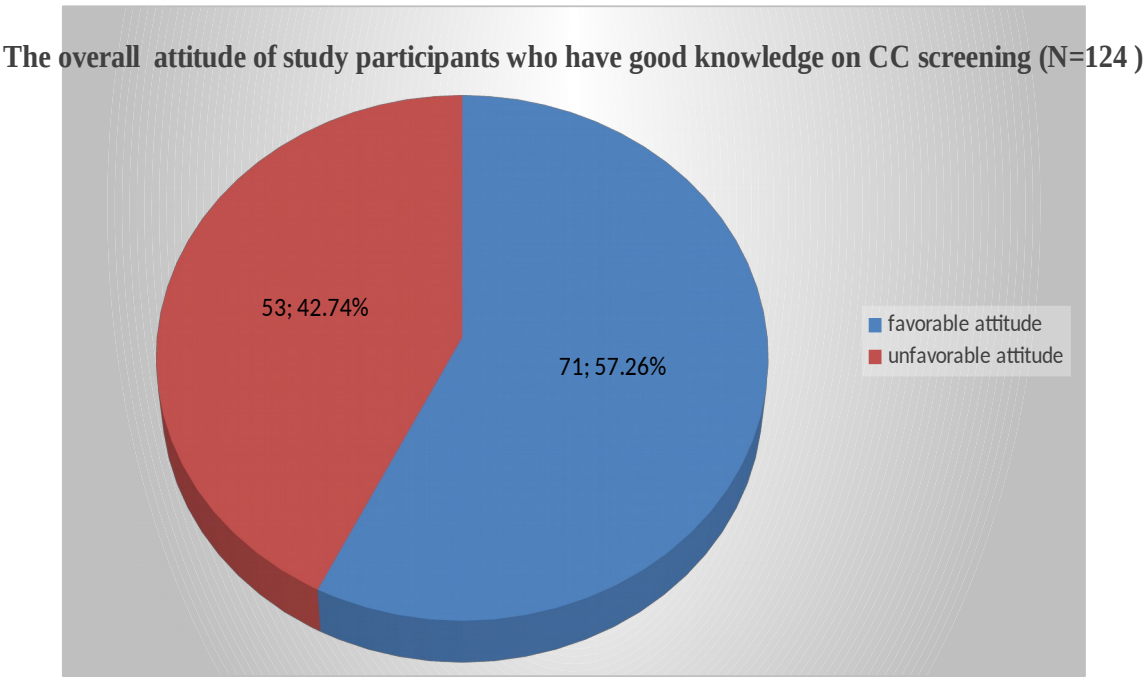

Figure *2*. the overall attitude of study participants on cervical cancer screening

In this study, all of the participants with good knowledge strongly agree on important of cervical cancer screening for improved women health, majority, (69.4%) also strongly agree that Cervical cancer is a serious disease as shown the table below.

Table 3. the attitude-based characteristics of study participants on cervical cancer screening (N=124)

Variable	Strongly disagree	disagree	neutral	agree	Strongly agree
Cervical cancer screening is essential of women health	-	-	-	-	**124(100%)**
cervical cancer is serious diseases	6(4.8%)	3(2.4%)	-	**29(23.4%)**	**86(69.4%)**

In Addis Ababa, a cervical cancer screening program is accessible to women in all.	**27(21.8%)**	**53(42.7%)**	-	39(31.5%)	5(4%)

6.4 cervical cancer screening Practice

In this study, among those particpants with good knowledge 124 (36%) , only 18/124(15%) were doing cervical cancer screening for their clients, inspite of the service being available at their facility.Majority of them 59(46.7%) were willing to refer their clients for pap smear.

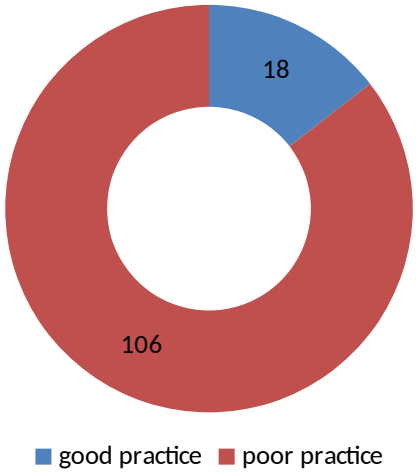

Figure 3. Overall practice of study participants on cervical cancer screening

Majority (83.7%) health professionals inspite of good knowledge and attitude towards cervical cancer screening have no training of VIA..

Table *4.* the practice-based characteristics of study participants on cervical cancer screening (N=124)

The practice-based characteristics of study participants on cervical cancer screening (N=124)	Frequency	Percentage
Are you trained for VIA?		
Yes	18	14.5
No	106	85.5
Is your health facility providing cervical cancer screening?		
Yes	116	93.5
No	8	6.5

Reason not Practicing cervical cancer screening		
- no trained person	8	6.5
-unable to follow after screening	4	3.2
-work over -load	4	3.2
ever did VIA or VILI for your clients?	23	18.5
have you ever treated VIA/ VILI positive clients?	18	14.5
Have ever order pap smear for your client?		
Yes	59	47.6
No	65	52.4

6.5 Determinants of participants' knowledge about cervical cancer screening

The association of participants' socio-demographic characteristics, participants' practice and attitude on knowledge about cervical cancer screening were examined, strengths of relationships were quantified using Odds Ratio (AOR) and 95% confidence interval. Accordingly, age, sex, working area, practice on cervical cancer screening had associations with knowledge about cervical cancer screening by using bivariate logistics regression model.

The report of multi-variable logistics regression findings indicates that age ≥40 years had 20 folds higher knowledge of Cervical Cancer screening than those age ≤24 years (AOR=20.8, 95%CI=3.6,118.9) .Male health provider had 2.3 times higher knowledge on Cervical Cancer screening than their counterparts. (AOR=2.3, 95%CI=1.27, 4.22). Participants who work in cervical cancer Screening Room, FP , EPI and ART clinic were 13.4, 2.6- and 3.1-times higher knowledge on Cervical Cancer screening than those who work in Maternity service area respectively. Participants who had good practice in Cervical Cancer screening had 5.2 times good knowledge than those having poor practice in Cervical cancer screening (AOR=5.2, 95%CI=1.71,16.5).

The association of participants' socio-demographic characteristics, participants' practice and attitude on knowledge about cervical cancer screening were examined, strengths of relationships were quantified using Odds Ratio (AOR) and 95% confidence interval. Accordingly, age, sex, working area, practice on cervical cancer screening had associations with knowledge about cervical cancer screening by using bivariate logistics regression model.

The report of multi-variable logistics regression findings indicates that the odds of having age ≥40 years had 20 folds higher knowledge of Cervical Cancer screening than age ≤24 years (AOR=20.8, 95%CI=3.6,118.9) and male health provider had 2.3 times higher knowledge of Cervical Cancer screening than female participants (AOR=2.3, 95%CI=1.27, 4.22). Participants who work in cervical cancer Screening Room, FP & EPI and ART clinic were 13.4, 2.6- and 3.1-folds higher knowledge of Cervical Cancer screening than those work in Maternity service area respectively. Participants who had good practice in Cervical Cancer screening had 5.2 times good knowledge than those having poor practice in Cervical cancer screening (AOR=5.2, 95%CI=1.71,16.5).

Table 5. The bivariable and multivariable logistic regression on the effects of independent variables on knowledge of Cervical Cancer screening in Addis Ababa health personnel, Ethiopia, 2021(N=124)

variable	Knowledge on cervical cancer screening		p-v	COR	P-V	AOR
	Good	poor				
Age of participant						
≤24	8	13	1		1	
25-29	51	141	0.266	0.6(0.23,1.5)	0.857	1.1(0.30, 4.10)
30-34	36	49	0.723	1.2(0.44,3.18)	0.280	2.1(0.55,7.92)
35-39	11	15	0.770	1.2(0.36,3.85)	0.335	2.1(0.46, 9.68)
≥40	18	4	0.005	7.3(1.81,29.5)	**0.001**	**20.8(3.6,118.9)**
Sex of participant						
male	49	59	0.013	1.8(1.13, 2.88)	**0.006**	**2.3(1.27, 4.22)**
female	75	163	1		1	
working area of participant						
maternity service room	19	43	1		1	
Screening Room	14	3	0.001	10.6(2.7,41.10)	**0.001**	**13.4(2.78,64.5)**
FP & EPI	33	49	0.236	1.5(0.76,3.06)	**0.032**	**2.6(1.1,6.20)**

ART clinic	17	16	0.048	2.4(1.0, 5.74)	**0.027**	**3.1(1.14, 8.6)**
OPD	41	111	0.588	0.8(0.43,1.59)	0.746	1.2(0.42, 7.21)
Score of practice						
poor practice	106	214	1		1	
good practice	18	8	0.000	4.5(1.91, 10.78)	**0.004**	**5.2(1.71,16.5)**

6.6 Determinant of participants' attitude about cervical cancer screening

The association of participants socio-demographic characteristics, participants practice and knowledge on attitude about cervical cancer screening were examined, strengths of relationships were quantified using Odds Ratio (AOR) and 95% confidence interval. Accordingly, sex, profession and working area on cervical cancer screening had association with attitude about cervical cancer screening using bivariate logistics regression model.

The report of multivariable logistics regression findings indicates that the odds of being female health provider is 4.7 folds higher attitude on CC screening than male health provider (AOR=4.7, 95%CI=1.67, 13.64) and experience of 9 and above years had 5.6 times higher attitude on CC screening than less than 4 years' experience (AOR=5.6, 95%CI=1.56, 19.73). Participants who work in maternity service had 2.5-folds higher attitude on CC screening than who works in OPD.

Table 3. The bivariable and multivariable logistic regression on the effects of independent variable on attitude on CC screening in Addis Ababa health personnel, Ethiopia, 2021 (N=124)

variable	Attitude for cervical cancer screening (N=124)		p-v	COR	P-V	AOR
	favorable	unfavorable				
Sex of participant						
male	20	29	1		1	
female	51	24	**0.003**	**3.1(1.45, 6.51)**	0.003	**4.7(1.67, 13.64)**
profession of participant						
Health Officer	12	15	1		1	
Nurse	43	31	0.225	1.7(0.71, 4.22)	0.333	0.55(0.16,1.84)
Midwifery	16	7	**0.048**	**2.9(1.89, 9.19)**	0.052	1.4(0.62, 8.69)
year of experience						
≤4	26	26	1		1	
5--8	25	20	0.585	1.3(0.56, 2.78)	0.288	1.7(0.64, 4.41)

≥9	20	7	**0.043**	**2.9(1.03, 7.91)**	**0.008**	**5.6(1.56, 19.73)**
working area of participant						
maternity service	16	3	**0.004**	**7.5(1.89, 29.95)**	**0.045**	**2.5(1.15, 11.2)**
Screening Room	8	6	0.312	1.9(0.552, 6.42)	0.099	4.2(.76, 22.82)
FP & EPI	17	16	0.389	1.5(0.59, 3.78)	0.992	1.0(0.32, 3.2)
ART clinic	13	4	**0.020**	**4.6(1.27, 16.52)**	0.088	3.4(.83, 14.18)
OPD	17	24	1		1	

6.7 Determinant of participants practice about cervical cancer screening

No variable was statistically significant for the practice of study participant those having good knowledge on cervical cancer Screening.

Table 6 . The bivariable and multivariable logistic regression on the effects of independent variable on practice of CC screening in Addis Ababa health personnel, Ethiopia, 2021

variable	practice for cervical cancer screening (N=124)		p-v	COR	P-V	AOR
	good	poor				
profession of participant						
Health Officer	4	23	1		1	
Nurse	7	67	0.448	0.6(0.16, 2.24)	0.443	0.59(0.16, 2.23)
Midwifery	7	16	0.191	2.5(0.63, 10.04)	0.226	2.4(0.58, 9.68)
year of experience						
≤4	6	46	1		1	
5--8	8	37	0.386	1.7(0.53, 5.20)	0.583	1.4(0.43, 4.55)
≥9	4	23	0.679	1.3(0.34, 5.19)	0.840	1.2(0.28, 4.69)

7. Discussion

Most of participants knew as HPV is etiology for Cervical Cancer and as Cervical Cancer is preventable cancer. HPV vaccination and regular cervical cancer screeing are idenfied methods of cervical cancer prevention by 74% of study participants. VIA or VILI, Pap smear and HPV test are identified as cervical cancer screening techniques by of participants this study. This finding was similar to the study done in Haitan(7),Cameroon(10), and Ethiopia (18,20).

On the other hand, almost all of study participants knew precancerous cervical lesion is a treateable diseases and knew that cryotherapy, LEEP,and cold knive conization treatment options for the precancerous cervical lesions .This finding was heigher than the study finding done in India(16.6%),(8) and Cameroon(37.6%),(10). This is may be those health professional had a better chance of getting training or more experienced at work on screening clinics or being in the capital city might increase awareness though different outlets in addtions to standard training opportunities. The difference in population under the study cannot be undermined.

Age ≥40 years (AOR=20.8, 95%CI=3.6,118.9) , Men provider (AOR=2.3, 95%CI=1.27, 4.22) ,non materinity service areas ,and practicing Cervical Cancer screening(AOR=5.2, 95%CI=1.71,16.5) were the factors associated with good knowledge of cervical cancer screening.This study finding is similar with study done in Northern Ethiopia in Tigrai region Mekele town(16),and Southern Ethiopia in Arba Minch(6,17).

In this study all of the participants with good knowledge strongly agree on the importance of cervical cancer screening for better women health, 69.4% of participant also strongly agree on the serious disease of cervical cancer. women participants (AOR=4.7, 95%CI=1.67, 13.64) and health providers with work experience of 9 and above years (AOR=5.6, 95%CI=1.56, 19.73) significantly associated with good attitudes towards cervical screening. This finding was higher than the study done in Udaipur (23). This is may be due to the study population, the personal intention deference for cervical cancer screening or the study design.

In this study quite few 18(15%).health providers practice cervical cancer screening at their site of work. . Our finding is higher than the study done in Mekelle(10.7%)(16),and Arba minch (9.6%) (17). This difference is may be availablilty of cervical cancer screeing services in their health facility assignment of more experanced health professionals in the screening clinics and being in Addis ababa by increasing access to practice and training in facilities other than the place of work.

8. Conclusion

The overall knowledge of study participants on cervical cancer screening was low. Even those who with good knowledge on cervical cancer screening don't practice screening due to poor attitude towards it..

Long years of experience, male provider , working in non materity clinics favored with better knowledge ,attiude and practice.

9. Recommendation

To improve cervical cancer screening service at health centres in-service training will be detrimental. Expanding the screening services to those professional in maternity care is one option of increasing access to Screening of cervical cancer. The deep rooted reasons for health providers low practice need to be studied further..

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