ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCE

SCHOOL OF NURSING AND MIDWIFERY

DEPARTMENT OF NURSING

‘KNOWLEDGE TOWARDS CERVICAL CANCER SCREENING AND ASSOCIATED FACTORS AMONG URBAN ‘FEMALE HEALTH EXTENSION WORKERS’ AT ADDIS ABABA, ETHIOPIA, 2020

By: TIRUNEH ARARSA

THESIS SUBMITTED TO SCHOOL OF NURSING AND MIDWIFERY COLLEGE OF HEALTH SCIENCE, ADDIS ABABA UNIVERSITY IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTERS OF ONCOLOGY NURSING.

JUNE, 2020

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APPROVAL SHEET

ADDIS ABABA UNIVERSITY

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The undersigned MSc student, declare that I have submitted my original work on a title of knowledge towards cervical cancer screening and factors associated among urban female health extension workers at health centers in Addis Ababa, Ethiopia, 2020.

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DEDICATION

I dedicate this work to God almighty, my wonderful brothers D.r Sori Ararsa as well as my ever-supportive me through thick and thin. I could not have come this far without your words of encouragement and massive support.

Lastly, a big thanks also goes to my friends Debela Gela, Hika Fitesa and Eba Bekele for giving me unreserved encouragement all through my research. Thank you for the immense support. God richly bless each and every one.

ACKNOWLEDGMENT

First of all, I would like to extend my pleasure to Addis-Ababa University, College of Health Sciences, School of Nursing and Midwives for giving me this chance and Library of Addis Ababa University, also others who have contributed for this work.

I would also like to express my genuine thankfulness to my advisors: Mr. Niguse Tadele and Yohannes Ayalew (BSc, MSc) who continuously and tirelessly dedicated a lot of their time to advice, guide and gave me fundamentals of carrying throughout this research thesis work.

My greatest gratitude also goes to all the participants who made this work possible (urban health extension workers those working in selected health center) for their collaboration in giving me the vital response. Finally, to all my class matte students, thank you for the enormous support. God richly bless each and every one.

TABLE OF CONTENTS

DEDICATION I
ACKNOWLEDGMENT II
LIST OF TABLES VI
LIST OF FIGURS V
LIST OF ANNEXES VII
ACRONYMS AND ABBREVIATION VIII
ABSTRACT IX
1. INTRODUCTION 1
1.1. BACKGROUND 1
1.2. PROBLEM STATEMENT 3
1.3. SIGNIFICANCE OF THE STUDY 4
2. LITERATURE REVIEW 5
2.1. FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING 7
2.2. CERVICAL CANCER SCREENING 9
2.3. KNOWLEDGE TO WARDS OF CERVICAL CANCER SCREENING 10
2.4. CONCEPTUAL FRAMEWORK 13
3. OBJECTIVE 14
3.1. GENERAL OBJECTIVE 14
3.2. SPECIFIC OBJECTIVE 14
4. METHODOLOGY 15
4.1. STUDY AREA 15
4.2. STUDY DESIGN AND PERIOD 15
4.3. SOURSE OF POPULATION 15
4.4. STUDY POPULATION 15
4.5. SAMPLE SIZE 16
4.6. SAMPLING PROCEDURES 17
4.7. DATA COLLECTION TOOL AND PROCEDURES 18
4.8. OPERATIONAL DEFINITION AND MEASUREMENTS 18
4.9. DATA ANALYSIS PROCEDURES 19

4.10. STUDY VARIABLES 20
4.10.1. DEPENDENT VARIABLES (OUTCOME VARIABLE) 20
4.10.2. INDEPENDENT VARIABLES 20
4.11. INCLUSION AND EXCLUSION CRITERIA 20
4.11.1. THE INCLUSION CRITERIA FOR THE STUDY INCLUDES: 20
4.11.2. EXCLUSION CRITERIA 20
4.12. DATA QUALITY MANAGEMENT 21
4.13. ETHICAL CONSIDERATION 21
4.14. DISSEMINATION OF RESULTS 21
5. RESULTS 22
5.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF RESPONDENTS 22
5.2. LEVEL OF KNOWLEDGE TOWARDS CERVICAL CANCER SCREENING 24
6. DISCUSSION 30
7. CONCLUSION AND RECOMMENDATION 35
7.1. CONCLUSION 35
7.2. RECOMMENDATION 35
8. STRENGTH AND LIMITATION OF THE STUDY 34
8.1. STRENGTH OF THE STUDY 34
8.2. LIMITATIONS OF THE STUDY 34
10. REFERENCE 36
Annex. I. ENGLISH VERSION 41
Annex. II. CONSENT FORM 43
ANNEX II AMHARIC VERSION 47

LIST OF TABLES

Table 1: Scio-demographic characteristics of respondents of cervical cancer screening and factors associated of urban female health extension workers, 2020 (N= 312). 22

Table 2: Level of knowledge towards cervical cancer screening based on mean score……24

Table 3: Knowledge towards about cervical cancer of cervical cancer screening and associated factors among urban female health extension workers, 2020. 25

Table 3: Perception of cervical cancer screening among urban female health extension worker in Addis Ababa, 2020..... 26

Table 5: Association factors with cervical cancer screening among urban female health extension worker, 2020. 29

LIST OF FIGURES

Figure 1: All over the knowledge towards cervical cancer screening based on mean score.....25
Figure 2: source of information about cervical cancer screening……...26

Figure 4: All over the perception of cervical cancer screening among urban female health extension workers in Addis Ababa, 2020..... 28

LIST OF ANNEXES

Annex 1- Structured questionnaire English version in order to asses knowledge towards about cervical cancer screening ……...……44

Annex 2- Amharic version questionnaire …….……..…46

ACRONYMS AND ABBREVIATION

ACS	American Colposcopy society
ASCCP	American Society for Colposcopy and Cervical Pathology
CC:	Cervical cancer
CDC	Centers for Disease Control and Prevention
CIN	Cervical intraepithelial neoplasia's
DNA	Deoxyribonucleic acid
HEW	Health extension workers
HIV	Human immunodeficiency virus
HPV	Human Papilloma Virus
KPNC	Kaiser Permanente Northern California
Pap	Papanicolaou
PHCC	Primary Health Care Centre
NCSP	National Cervical Screening Program
WHO:	World Health Organization?
USPSTF	United State Preventive Services Task Force (USPSTF).
VIA	Visual inspection Acetic acid

ABSTRACT

Background: Cervical cancer is preventable and remains a leading cause of avoidable death among women in the world. In developing country, the knowledge of screening for cervical cancer behavior still very low, the converge of cervical cancer screening was from 2.0% to 20.2% in urban areas and from 0.4% to 14.0% in rural areas. Previous findings of research were indicated that the magnitude of screening for cervical cancer in Ethiopia is very low, which is about 0.6%, this indicated the knowledge of women is low because, of the women did not come to screened for cervical cancer.

Materials and Methods: A cross-sectional study design was used. Data were collected using a structured self-administered questionnaire. Analysis was conducted using SPSS version 23.

Results: About 312 urban health extension workers were included in this study. The mean age (±) standard deviation) of the study participant was 20.41 years ± SD, 3.73 years). Based on this finding, about 48.4% of the participants have good level of knowledge about cervical cancer screening and about 43.3% of the participant who were source of information were health professionals. A multiple logistic regression were performed to identify the existence and significance of association, work experience and monthly income were significantly associated [AOR = 4.32, 95% CI: (1.71, 10.94], monthly income [AOR = 3.75, 95% CI: (1.49, 9.41) and (A0R= 3.08 95% CI: (1.06, 8.98) were associated.

Conclusion: This study has revealed that the knowledge towards cervical cancer screening was poor among urban health extension workers of Addis Ababa, health centers. Generally, information could be subordinate than seems in this explore. In conclusion, knowledge towards cervical cancer screening and when should be screening showed several misunderstandings. Based on this misunderstanding, continuing delivering information to encourage screening including health extension workers to raise the knowledge of women.

Keywords: knowledge, cervical cancer, screening, perception.

1. INTRODUCTION

1.1. BACKGROUND

Cervical cancer is preventable and remains a leading cause of avoidable death among women worldwide. About 90% of women in their lifetime are at risk of cervical cancer (CC) in all age groups(1). It is a serious global public health problem accounting the fourth and second most common cancer-affecting women in developed and developing countries respectively. The burden of cervical cancer is becomes worth, recent data account over 529,000 new cases each year in globally, and about 80% of the cases occur in low-resource countries like Latin America, Southeast Asia and Africa(2). In 2018, a report indicates that globally estimated of cervical cancer is about 569,847 cases and 311,365 deaths noted among screened for cervical cancer (3).

According to World Health Organization control of cervical cancer guide, the success of control and prevention of cervical cancer, largely depend on HPV vaccination and cervical cancer screening to a great extent. Furthermore, from the huge number of cervical cancer cases occurred in the world, about 85% of cases were found in economically in the poorest countries. Any unusual bleeding from the vagina where the main symptom of cervical cancer. The resulting changes in the cells through screening can benefit to avoid cancer from developing. Furthermore, females' sensitivity towards screening of cervical cancer, HPV and its vaccine greatly influences the uptake of vaccination and participation in screening(3).

In 2015 data reported in the United states, significantly decreased the numbers of deaths from cancer of the cervix after the engagement of cervical screening were widespread to continue towards were declined, from 2.8 to 2.3 per 100,000 of women (4). However, in developing countries, the coverage of screening remains very low, ranging 2.0% to 20.2% in urban and ranging from 0.4% to 14.0% in rural(2). Cervical cancer screening finding abnormal change in the cervix before confirmations of any symptoms that could lead to cancer and having or developing a disease. When cancer cell is precipitate it could be easier to manage before cancer begun to spread. Cervical cancer screening involves a complex process of cytology, human papillomavirus (HPV) testing, colposcopy, and a multitude of algorithms for the identification of pre invasive disease and prevention of invasive disease (5).

Every woman has the right to became across cervical cancer screening for at least once in her lifetime. Globally, the most common screening tests with widely used include tests for human papillomavirus (HPV), cytology (Pap test), and visual inspection with acetic acid (VIA). These tests could be used for a single test or in a sequence. Once's come across with a lonely examination, a positive outcome should be specifying a requirement for treatment. When using a classification test, women who test positive on the initial test, to be conduct another test and only those who test on another positive test should be treated. Cervical cancer screening intervals in women, those who test negative with VIA test or Pap smear test, based on this screening interval, should be repeat screening every three to five years and also if could be the HPV tests were negative, rescreening should be done after five years(6, 7).

Screening guideline was revised in 2012, for cervical cancer and its precursors were developed and approved by the ACS, ASCCP, and ASCP, this new screening guidelines includes: young women of 21 to 24 ages; pregnant women; postmenopausal women; and women of 65 years and older. The new recommendations involve longer screening intervals and co-testing. Annual screening is not suggested for any age group; HPV testing should not be used as a separate test for screening; Co-testing every 5 years is preferred for women aged 30 to 65 years; Screening with cervical cytology alone every 3 years is recommended for all women of 21 to 65 years if co-testing is not available; and co-testing is not advised for screening women of 21 to 29 years. Co-testing is ideal for females of 30 to 65 years because cervical cytology alone is not as sensitive and co-testing were reductions the figure of follow-up visits (8). According to Ethiopian Guideline for cervical cancer, prevention and control were recommended screening every five years following normal result irrespective of HIV status and following an abnormal result should treatment and recommend repeat screening in one year. The aim of this study is to address knowledge of cervical cancer screening to ovoid deaths of due to cervical cancer(9).

1.2. PROBLEM STATEMENT

Cervical cancer is one of the carcinomas of the uterine cervix; it is curable if detected early through screening. Cancer disease is a public health problem, and a priority concern disease and the main wreath of life over the next 12 years (2018 to 2030) the number of cancers of the cervix is predictable to rise from 570,000 to 700,000 in the world(10). In developing country, the knowledge and attitude of women regard of cervical cancer screening, behavior still very low, the converge of cervical cancer screening was from 2.0% to 20.2% in urban areas and from 0.4% to 14.0% in rural areas. Different studies show that a very few women in sub-Saharan Africa and other developing countries are ever screened for cervical cancer, because of low levels of awareness and the other reason of with inaccessibility and the distance from screening services are answerable for very slight amount of women's presence to be complex in screened programs(2).

One of the common persistence of women were not enduring for screening cervical cancer conferring to the study result as shows, lack of knowledge towards the disease, the non-appearance of symptoms and other problems was described. The major reason was not experiencing of screening for cervical cancer, because of deficiency of information's and other reasons were fear of test result, performing screening for cervical cancer is painful, lack of symptoms and not knowing where the place of screening were made (11).

An individual lifestyle was one of the major risk factors of cervical cancer. Women who have smoking history are almost four times more likely to have cervical cancer, when compared to those who had no smoking history and also, women who had multiple sexual partners in their life time sexual partners were 2.2 times more probable to develop cervical cancer. The other risk factors for cervical cancer regards of women's who start first sexual intercourse at less than 18 years were about 6.6 times more probable to have cervical cancer, when compared to those who had first intercourse at 18 years or above years(12). Cervical cancer is a most important public health alarm among women in the country as present insufficiency of information on knowledge towards of screening related to the service in the country. This aimed at reducing the incidence and mortality associated with the disease through early diagnosis and treatment and to determine the knowledge towards cervical cancer screening and associated factors of screening services in Addis Ababa, Ethiopia.

1.3. SIGNIFICANCE OF THE STUDY

Among all cancer diseases, cervical cancer needs special attention next to breast cancer. One of the common health care facilities where pro-active health care, such as screening of cervical cancer should be sited, are insufficient, over-burdened and under-resourced in maximum in developing countries. Most low-resource countries have limited material that is used for cancer screening, treating and diagnostic care services. Globally, cervical cancer is increasingly growing as a common health problem of the public in both high economic countries and low economic countries. Cancer is one of the heaviest economic enforce and also social burden, but it is quickly increasing have low resource income and have limited treatment and diagnosis or non-existent. In Ethiopia at 35.9 per 100,000 women figures from the population of Addis Ababa cancer registry showed that breast and cervical cancers, there is information limited about awareness and factors associated for cancer of cervix prevention and were in the community level.

If the government and society give attention, about 40% of cervical cancer is preventable. Primary prevention should be careful cost-effective way of fighting the cancer. Cervical cancer should be detected early and treatment reduce the cervical cancer greatly and reduce the burden of cancers and bring good progress outcomes. Women of this generation are lucky because nowadays the strategy of the HPV vaccine provides the opportunity to substantially reduce transmission of both high risk types 16, 18 and low risk types 6, 11; by doing so it will reduce the morbidity and mortality related to cervical cancer and even though the people do not have information about the availability of the vaccine.

Concerning cervical cancer, insufficiency of information on knowledge towards screening and factors associated with the uptake of the service in the country, which are needed for effective program implementation. Therefore, the major purpose of this study was to determine the knowledge about screening, cancer of the cervix and factors associated of screening services among urban female health extension workers in Addis Ababa, Ethiopia. The results of the study helpful to increase the low level of knowledge of cervical screening, cancer among the health extension workers and helpful in providing information like that of health education and promotion regarding the disease. It is also helpful for policy makers and national programs in the creation of awareness in the prevention of the disease.

2. LITERATURE REVIEW

Cervical cancer is one of the most common public health problems in the world. A global figures of cervical cancer prevalence shows, about 527,624 annually new case and about 265,672 cervical cancer deaths were reported. The prevalence of cancer of the cervix were highest in Eastern Africa with including Zimbabwe and lowest report in western Asia (13).

In the worldwide, the cancer of the cervix account about 500,000 new case were identified annually and about 273,000 cervical cancer deaths were reported, from the data shows about 80% arise from low in economic countries(14). Cancer of the cervical cases were from developing countries, accounted about 370 000 out of the total of 466 000 cancer of cervical cases were estimated to occur in the world. Cervical cancer account annually lost the lives of individual of women about 231,000 in the worldwide, from this account about 80% were living in low in economic countries (15).

The prevalence of cervical cancer account in Europe about 23.4% of the total case of the cancer and about 20.3% deaths from the disease of cancer, while it signifies about 9% of the population of the world, followed by the Americas'21% of prevalence and 14.4% of rate of mortality in worldwide. In differently from low economical counties, the prevalence of deaths due to cancer in Asia about (57.3%) and Africa (7.3%) remain difficult than the prevalence by (48.4% and 5.8%, respectively) because of the distribution were different types of cancer fatality case is higher burdens in these regions(16).

Cervical cancer screening by HPV DNA report ranged from 83.6% in Europe/North America to 96.5% in south Asia. The lower prevalence in Europe/North America and Central/South America is fundamentally explained by prevalence observed in Spain (80.1%) and Colombia (74.4%). HPV frequency were extended about 100% in sub-Saharan Africa and about 93.3% in South Asia. The type of HPV-16 was the predominant varying from all regions, about 69.7 in North America/Europe to Sub-Saharan Africa is about 47.7%. In the worldwide the second most common types of HPV-18, with fluctuating the frequency from 12.6% significant in South America to 25.7% in south Asia(17).

But know a days, in 2015 record show in the United states, significantly decreased the numbers of death from cancer of the cervix after the engagement of cervical screening widespread to continue

towards were decline, from 2.8 to 2.3 per 100,000 of women(4). After the initiation of screening in U.S, study reported estimated significant cervical cancer is expressively reduction were reported. Screening cervical cancer is frequently unaccountable, to contribution in the United States; about 89% population were targeted to screening of cervical cancer and about 70 million of women were screened (18).

Based on the presented data from existing screening register, the screening test coverage were taken the program on population-based were less than 80% in altogether programs, shifting from 10% to 79%. However, in several countries the cervical cancer screening were even over the capacity and in most of EU members states screening capacity were satisfactory (19).

In Australia the possibility of cancer of cervix case, illness and death reduction were based on the foundations of National Cervical Screening Program, (NCSP) is a great contribution. The study shows cervical cancer screening case in 2016, by 92.3% of more than 2.1 million tests performed were negative for cervical abnormalities. In 2016, about 100 tests with Pap were performed, based on this significant data about 5.2 abnormalities were detected. The substandard abnormalities were more common, with 4.0 out of 100 Pap tests noticed, however 1.2 out of 100 test with Pap were noticed a high-grade irregularity(20). The study conducted in 2012, in Finland the prevalence of screening cancer of cervical was 2.5 per 100,000 person per years with the HPV arm and 1.4 per 100,000 in the Pap test. Accordingly, the incidence of barred cancers was 17.5 per 100,000 person-years in the HPV arm and 18.6 in the Pap test(21).

In South Africa study conducted among University students, about screenings of cervical cancer were result shows about 52.2% had ever heard the screening of cervical cancer and having negative knowledge relationship significantly with barriers to screening of cervical cancer from the study student who perform test with Pap test, had a significantly higher average score on knowledge (7.23 vs. 5.32)%, when compared not perform test a Pap among the participant students (22). In Nigeria, only about 14.1% of the study conducted in 2012, had perform with Pap test(14, 23).

The study reported from Tanzania, on screening knowledge of cervical cancer transmission of HPV, risk factors, and symptoms of cancer of the cervix. From the study participant were infection of HPV and hereditary tendency was 38.7% and 23.4% respectively(24) . In 2005, in Ghana's first national policy about cervical cancer prevention were suggested VIA screening coupled with

Cryotherapy used for women aged 25-45 from report of the study, the prevalence of cervical cancer was 61.5% cervical cancer screening around 7.7% of women tested VIA positive and received Cryotherapy (25).

Study reported from Nigeria, among study participant did not know about screening of cervical cancer and also do not know the methods of screening cervical cancer. Study participant report were getting more information from health professionals about screening cervical cancer. Illiteracy and ignorance is foremost factors influence utilization of screening of cervical and do not know about cervical cancer screening(23). In 2016, study conducted in Kenya, on cervical cancer screening prevention method among nurse were about 79.82% of the participant knowledgeable and 10.53% participant very knowledgeable while only 10.53% of the participant had poor knowledgeable of cervical cancer screening (26).

Ethiopia is one of the countries, screening of cervical cancer rate is extremely low, about (2.9%) of other factors associated with women who living in urban areas (6.9%) and were undergone cervical cancer screening than the rural (0.9%), those women living in urban more getting information than rural women's(27). There are multiple Study conducted in Ethiopia related to cervical cancer screening, cross sectional research studied conducted northern Ethiopia in Mekelle with factors affecting practices of cervical cancer screening on nurse were result about 10.7% (2).

The study reported from Hosanna, result show the level of knowledge about (46.3%) of poor knowledge, about (9.9%) of been screened about (34.8%) of negative attitude in Hosanna (28). In 2019, research conducted in Bishoftu, result show from the participant reported heath professional were the main source of information about cervical cancer screening and 25% among the participant were uptake of screening for cervical cancer (29).

2.1. FACTORS ASSOCIATED WITH CERVICAL CANCER SCREENING

Research conducted in Portland, on associated factors with the uptake of screening the cancer of the cervix among women report show, having sex at a younger age and having multiple sexual partners. Practically, about (30%) one-third of women who had never had a Pap test and about (30%) from the reported were they had sex before age of 16 when compared to (19%) of women who required forever needed a Pap smear. However, other factors associated were about (31%) one-third of reported they were required partners with other coexisting partners, and about (23%)

of the partaker were report oral contraceptives used about (6%) of the participant were have history of transmitted sexually infections and about (5%) of the participant were report have history of smoking (30). In Malaysia, study report on factors affecting uptake of screening of the cancer of cervix among African women those who have, marital status was significantly associated with Pap smear uptake in the past 3years, married women are 2 times more probable to have a good uptake screening for cervical cancer(31).

In 2016, the study conducted in Kenya, factors associated with uptake of (VIA) for screening, of cancer of the cervix report show included: older patients, patients living with HIV were having a factor association (32). The other study conducted in Hawassa, on screening cancer of the cervix with factors associated among HIV positive women's report show, the most common risk factors were the result of CD4 count of each individuals, level off educational, average monthly income, knowledge about risk factors, about the prevention of cervical cancer, having multiple sexual partner knowledge about benefit of screening, parity, and other is the age of the respondent(11).

A study conducted Northwest Ethiopia, with screening of cancer of the cervix and factors associated among women was significantly associated with: status of educational, status of occupational, pregnancy history, ever used modern contraceptive, knowing anyone with cervical cancer, pregnancy, ever used up-to-date contraceptive, history of having sexually transmitted disease, knowledge on cancer of the cervix, awareness of cervical cancer screening (33). Study result shows in Jimma about associated factors with screening cervical cancer variables were, occupational status, knowing somebody with cancer of the cervix, educational status, and for the gynecologic examination, should preferring gender of physicians for gynecological examination and also advice from health care workers(34).

Study conducted in 2019, in Arba Minch, result reported factors associating among the participant were those who have smoking history and those who has start at less than 18 years age at first sexual intercourse, those who have STI history, positive HIV seropositive status and having many sexual partners were significant association(12). A cross sectional study conducted in Amhara, regional state result shows factors associated among cervical cancer, were 5 times more likely develop cervical cancer among those whom have STI a history when to women compared to who having not history of STI individuals. The other factors associated factors of women's those

vaginal walls were abnormality had more than 4 times more likely to develop cancerous cervical lesion when compared to individual. From the result report from the study were of those who had specifically commercial sex worker nearly 5 times more anticipated to develop precancerous cervical lesion when compared to individual with those who had a non-commercial sex worker(35).

2.2. CERVICAL CANCER SCREENING

The American Colposcopy society (ACS) estimates cancer of cervix prevalence and mortality rate were significantly declined later after the introduction of the Papanicolaou (Pap) test in the mid-20th century. Form the period of 2002 to 2011, cervical cancer rate is decreased by 1.2% per year (36). “In 2012, based on the recommendation after initiation of American Society for Colposcopy (ACS) and Cervical Pathology (ASCCP), and the American Society for Clinical Pathology guidelines of cervical cancer screening suggested different option based on the age of the women, her screening history, related risk factors and methods of screening test choice” (37): “Later on the update guidelines released from ASCCP released updated guidelines for the organization of abnormal screening outcomes reference were differed from 2013 and from 2012 recommendations”. “In 2013, recommended guideline based on newer evidence from the Kaiser Permanente Northern California (KPNC) database that women with HPV-negative ASC-US results returned for screening within 3 years rather than 4 years” (37, 38).

Cervical cancer is rare before age of 21 years of women, however, in the worldwide cervical cancer Screening should initiate at the age of 21 years of women. In the first face screening start from age of 21 to 30 women should receive screening with cytology every 3 years (37). Early detection of precancerous lesions and prevent cancer of the cervical were focused on screening those women who had active sexually, tests with using cytology smears and treating precancerous lesions as soon as detected. Women who were living in the most developed countries; health professions should be advised women to test after sexually active and based on this evidence first smear test subsequently should perform once every 1–5 years. As a recommended indifferent guideline from different nationals endure currently moving towards were less frequent smear tests (once every 3–5 years), because of cervical cancer develop a lesion slowly over several years(15). In U.S. among women with cervical cancer the prevalence rates were become declined by 50% later the implementation of routine with Pap test of screening after initiating of conduct screening in the

1950s. The new primary prevention introduction was in 2006, became of the available of HPV vaccination was introduced, the advisory committee on immunization practices recommends the Nonvalent HPV vaccine series for females and males at the ages of 11–12 until age 26(39).

Mainly in recent times, the cervical cancer anticipation has been shifted toward substitute secondary prevention approaches using primary HPV DNA testing. Before in the United States, preventive services task force (USPSTF) guidelines were initiated from 2012, was recommended routine cytology test every 3 years of screen for cervical cancer among women ages from 21 to 65 years of each individual and the option of co-testing with cytology and HPV testing every 5 years for women ages 30–65 years (Moyer, 2012).

Study conducted in South west Ethiopia, among the participant women, only about (15.5%) were perform screening for cervical cancer and about (48.9%) of the participant was undergo for screening for cervical cancer due to different gynecologic reasons and only about (55.3%) of women were screened because of personal interest to perform cervical cancer screening and other rest of the participant recommended due to notice by health professionals and most of the participant about (45.5%) were perform for gynecologic checkup and could prefers gender and about (88.2%) of the participant were prefer female gynecologist(34).

2.3. KNOWLEDGE TO WARDS OF CERVICAL CANCER SCREENING

According to the Journal of Oncology research indicated, the study participant was lack of knowledge about awareness of cervical cancer screening were (93%, 92%, and 87%), respectively(40). Among the women was performed cervical cancer screening, the level of knowledge in Swaziland, shows among the participant about 53.5% of women had knowledgeable about the symptoms and signs of cervical cancer. The other study participants were indicated about 69.4% were having abortions and also about 48% of the participant report women, those who, having multiple sexual partners were one of the exposing for cervical cancer and about 35% of the participant were believes that, using family planning should be in the primarily exposing for cervical cancer (41).

In India, Uttar Pradesh study result shows, about 46% participants knew that screening should initiate at the age of 21 years and within the 3 years of activity sexual were started, whichever is earlier. Among study participants about 64% of women believed screening should be started after

30 years of age each individual, and about 83.8% of the participant were agreed that all married women should be started screening for cervical cancer at least once during their lifetime (42). Study conducted in Bahrain, shows that nearly about 65% of the participant had heard about the Pap smear and about 51.5% of the participants getting source of information were from physicians and while 18% of them were heard about cervical cancer screening from their relatives and friends, from media about 13.4% of the participant from physicians, about 12.4% of the participant, and while 3.6% of were heard from the nurse professionals were reported from study participant.

Based on the study result, approximately about 64% of the participant believed that Pap smear could be detecting the pre-cancer were reported and about 44.3% of the participant were believed that Pap smear should be using ones at least in every 3 years, and about 67.7% of among the participant were knew the purpose of conducted with Pap smear should be detect abnormal cells in the cervical cancer (43).

In Nigeria, results indicated that among study participant of women were about 12.8% of the participant were heard about the screening of cervical cancer and the majority of the women among study participant about 90% of women were did not knew the risk factors of cervical cancer. From the participant mentioned the symptom of cervical were about 5.6% of among the study participant believe that those who having vaginal discharge with foul-smelling were reported, and about 1.7% of the study participant believe that, those who having heavy vaginal bleeding and about 0.7% were report that, after sexual intercourse having vaginal bleeding were notices. The prevalence of screening of cervical cancer about 92.1% should be known and HPV immunization 98.4% were reported. Among study participants most of the respondents ‘indicated that main source of information about cervical cancer were primary from the media and from health institution like health center and hospital(44).

A study conducted in Tanzania, about the screening of cervical cancer, among the participant about 63.2% of them were ever heard about the screening of the cervical cancer and about 39.4% of the participant were having the awareness about screening of cervical cancer program available in the countries. Among the participant about 84.0% of the women were did not know about the screening of cervical cancer, and about 11.1% of the participant believe that cervical cancer screening should begin at the age of eighteen years of each individuals of women, only about 0.7%

of the participant stated properly at the age of 30 years of women's should began screening, about 7.8% of the participants report that cervical cancer should be prevent through toking vaccine of human Papilloma Virus. Among the study participant about their knowledge of women about the cancer of the cervix options of the treatment were, about 6.5% of them were mentioned as one treatment option were mentioned and among the participant about 33.6% of them were mentioned at least one treatment option was mentioned from the list. About 4.9% of the participant says surgery were specifically belied among the treatment options. Only one participant or about 0.3% mentioned radiation therapy were belied as treatment option for cervical cancer(45).

A study conducted in Southern Ethiopia, the report was indicated about 86.9% of among the participant health workers were having good level of knowledge about cervical cancer and about 92.9% of the participant had heard about cancer of the cervix. Among the study participant one of the main sources of information about screening of cervical cancer, and about 63.2% of the participant were heard from college or school, about 29.2% of them got information were heard from media, about 21.8% of the participant report were from friends or colleagues, and about 10.9% the participant were from leaflets or prints, 1.6% of them were heard from the a religious institution.

A majority of the respondents, about 83.4% of the participant were known cervical cancer screening test was used for the purpose of medical checkup. Regarding of cervical cancer screening services, about 43.1% of the respondents were mentioned that had no cervical cancer screening service was begin in their institution(46). A study conducted in southwest Ethiopia, result report shows about 71.1% and 65.7% of the participant was ever heard about screening of cervical cancer respectively. Among the respondent about (20.6%) of women ever heard about cervical cancer and had a good knowledge and the main source of information for the participant about cervical cancer screening was media/ radio(34).

Other study conducted in Hawassa, result report among the participant about 36.6% of were lack of knowledge were testified about screening of cervical cancer and awareness was the main reason for not undertaking screening for cervical cancer and other reasons were fear of test result, and others participant believe that it is painful during the producer were conducting, lack of symptoms and not knowing where the place of screening were performed(11).

2.4. CONCEPTUAL FRAMEWORK

Two types of variables were used to assess knowledge towards cervical cancer screening. The dependent variables are knowledge towards cervical cancer screening. And independent variables, socio demographic, service availability, sources of information, perception and other factors. This conceptual framework was developed using information from different literatures.

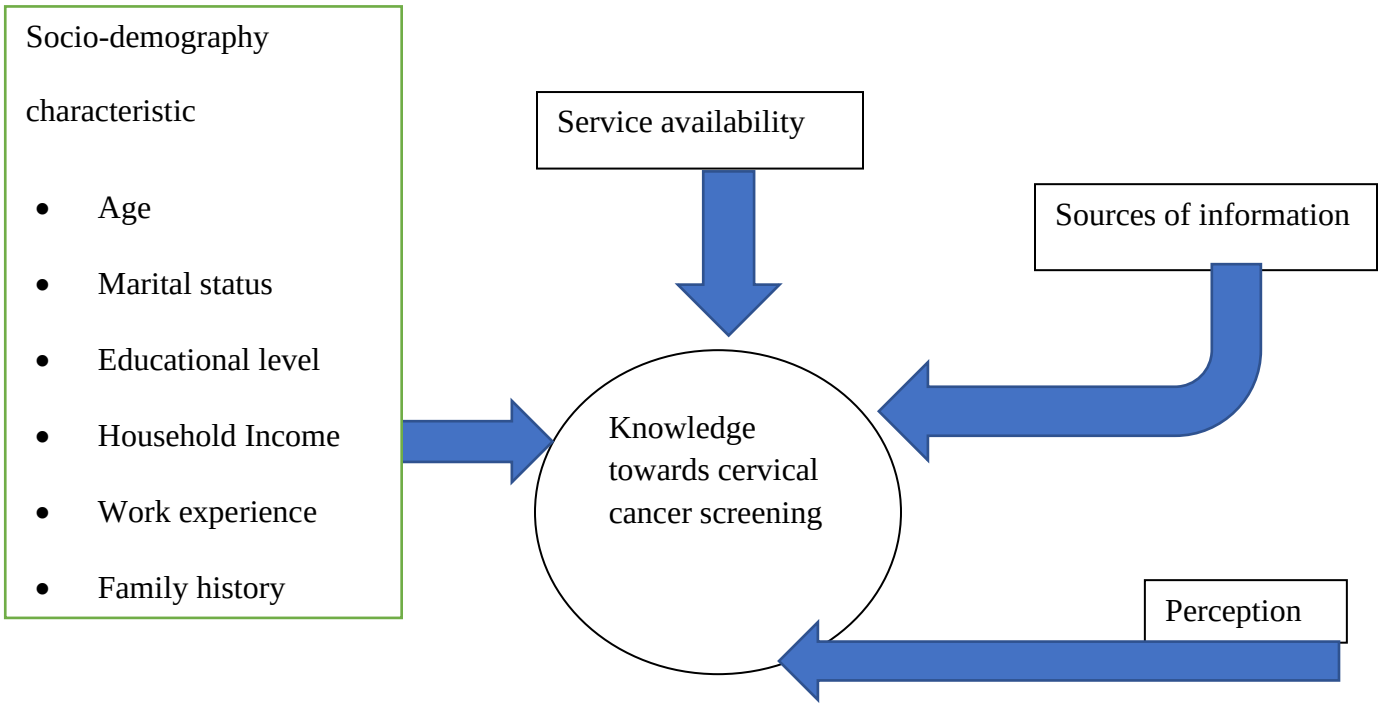

Figure 1: Conceptual framework for assessment of knowledge towards cervical cancer screening among urban health extension workers in Addis Ababa, Ethiopia, 2020.(44, 46, 47)

3. OBJECTIVE

3.1. GENERAL OBJECTIVE

To assess knowledge towards cervical cancer screening and associated factors among urban female health extension workers in Addis Ababa, Ethiopia, 2020.

3.2. SPECIFIC OBJECTIVE

- To assess knowledge towards cervical cancer screening among urban female health extension workers in Addis Ababa, Ethiopia, 2020.
- To determine factors associated with knowledge towards cervical cancer screening among urban female health extension workers in Addis Ababa, Ethiopia, 2020.

4. METHODOLOGY

4.1. STUDY AREA

The study was conducted in Addis Ababa. Addis Ababa is the capital city of Ethiopia, as well as the seat of the African Union. Addis Ababa city is selected because, it accommodates people with different cultural backgrounds, norms and values and it has a considerable diversity of socio-demographic status, clinical characteristics, knowledge and factors associated with cervical cancer screening among urban female health extension worker at Addis Ababa Ethiopia, 2020.

Addis Ababa city has ten sub-cities and 116 woredas. There are 4 hospitals owned by the Addis Ababa health bureau, 4 by the federal ministry of health and 1 by Addis Ababa University, 3 by non-governmental Organizations, 3 by defense force and police and 34 by private owners. There are 99 public health centers and more than 700 private clinics out of which 75 are higher clinics.

Under Addis Ababa health bureau about 1200 health extension workers were currently working in different health centers. Urban health extension workers are diploma nurse by their professional and additional trained offered on the package of health extension programs including cervical cancer screening, then requited among female diploma nurse for urban health extension. This study was conducted in six sub-city in Addis Ababa (Addis ketema, kolfe keranyo, Areda, Gulele, kirkose and Lideta) sub-city's, from this six-sub city about 36 health centers were selected by using simple random sampling technique.

4.2. STUDY DESIGN AND PERIOD

A facility based cross-sectional study design was employed from Feb 2020 to May 30, 2020.

4.3. SOURSE OF POPULATION

The source population for this study is all urban female health extension workers at health centers of Addis Ababa, Ethiopia.

4.4. STUDY POPULATION

The study population was the sample urban female health extension workers who are working in selected health center in Addis Ababa, during study period.

4.5. SAMPLE SIZE

The sample size for the study was estimated by using single population a proportion formula at 95% confidence level (CI), Z (1-ά/2) = 1.96), proportion of 50% prevalence estimate and, 5% margin of error. Using the above assumptions, the sample size was calculated as follows.

P: 0.05

Z: 1.96

d: 0.05

$$n = \frac{(z/2)^2 P(1-p)}{d^2} = \frac{(1.96)^2\, 0.05(1-0.05)}{(0.05)^2} = 384$$

Therefore, using correction formula to adjust the sample size

N= 1200

n= 384

$$n = \frac{n_0}{\left(1 + \frac{n_0}{N}\right)}$$

$$\frac{384}{1 + \frac{384}{1200}}$$

the total sample size was = 291

We considered the non-response rate of 10 % in the estimation of the sample size required for the study. Therefore, the final sample size was = **320.**

4.6. SAMPLING PROCEDURES

The sample was selected by systematic random sampling technique.

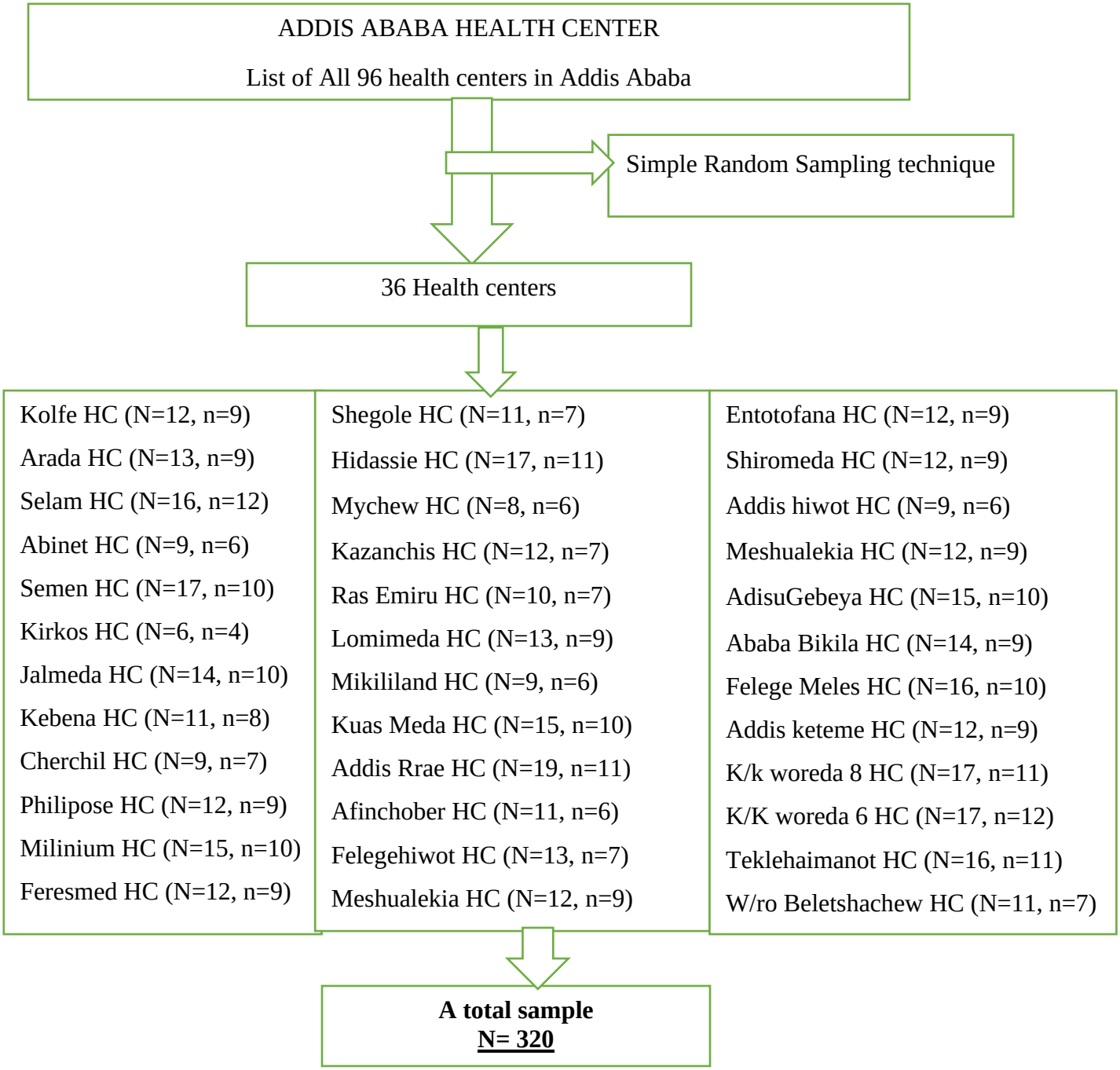

Figure 2: Schematic presentation of the sampling procedure used in the study, Addis Ababa, Ethiopia, 2020.

4.7. DATA COLLECTION TOOL AND PROCEDURES

The data were collected using a structured self-administered questionnaire, initially developed in English and translated into Amharic version for better understanding of enumerators and the study participants. The translated Amharic version was translated back to English to ensure consistency. The questionnaire was designed based on the study objectives, and adopted from validated questionnaire and studies available on the topic added with content specific questions(48, 49). The questionnaire included socio-demographic characteristics (age, religion, educational status, marital status, family average monthly income and work experience), reproductive characteristics (age of first sexual intercourse, parity, history of STD, family history of cervical cancer and history of HIV/AIDS) and questions regarding the knowledge and perception about different aspects of cervical cancer screening. Data collectors were four nurses (two data collectors and two supervisors from black lion hospitals). A self-administered questionnaire. The data collection was supervised by BSc nurse which was qualified supervisors. Completed all questionnaires ought by qualified BSc nurse supervisors for completeness and consistency at field level.

4.8. OPERATIONAL DEFINITION AND MEASUREMENTS

Knowledge towards cervical cancer screening: We used thirty-one items, for each item, the participants were asked to choose one of the three options: “Yes,” “No,” or “Don’t know.” And for multiple answers questioners also converting each item “Yes” or “No” or” Don’t know’, a composite score of the knowledge to measure the knowledge level of respondents regarding vulnerable groups, predisposing factors, risk factors, sign and symptoms and screening methods, treatment modality and benefits of screening of cervical cancer screening were included in the questionnaire. The cumulative mean score of knowledge of study participant about the screening of cervical cancer was valued using mean score. Based on this, those who had scored less than the mean was considered to have **poor knowledge** and those who had scored greater than or equal to the mean value was considered as having **good knowledge**(46, 50, 51).

Perception

Perception should be assessed using a Likert scale. The perception scoring system was used: strongly agree =5, agree=4, neither agree nor disagree=3, disagree=2 and strongly disagree= 1 For comfort giving outcomes, answers for strongly agree and agree and for disagreeing and strongly disagree were combined. The cumulative mean score of perception of the study participant towards cervical cancer screening who had scored less than the mean score was **negative perception** and those who score greater than or equal to the mean value was considered as having **positive perception**(2, 52).

HEWs should be operationally defined.

4.9. DATA ANALYSIS PROCEDURES

The data entry and cleaning were undertaken using Epi-data version 3.5.1 and analysis was undertaken using SPSS version 23. Each variable was checked for missed values. The strength of an association between dependent and independent variables and its significance were computed using odds ratio with 95% confidence interval. Binary and multiple logistic regression was used to identify associated factors with outcome variables (knowledge) regarding cervical cancer screening, predisposing factors, its risk factor, screening mothed, frequency of cervical cancer screening of women and benefit of screening. Odds ratio at 95% CI was computed to show the strength of the association between the outcome and the descriptive variables. All variables which showed statistically significant results with knowledge, for cervical cancer screening in the bivariate logistic regression were entered to multivariate logistic regression to identify the independent contribution of each explanatory variable. P-value <0.05 was considered to decide statistically significant association between the independent and dependent variables. Results was presented in different frequency tables, graphs and descriptive summaries were used to describe the variables.

4.10. STUDY VARIABLES

4.10.1. DEPENDENT VARIABLES (OUTCOME VARIABLE)

- knowledge towards cervical cancer screening.

4.10.2. INDEPENDENT VARIABLES

- Socio-demography characteristic
    - Age
    - Marital status
    - Educational level
    - Monthly house hold income
    - Work experience
    - Work experience
    - Family history
- Service availability
- Sources of information
- Perception

4.11. INCLUSION AND EXCLUSION CRITERIA

4.11.1. THE INCLUSION CRITERIA FOR THE STUDY INCLUDES:

The health extension workers, working in the health center at the time of data collection.

4.11.2. EXCLUSION CRITERIA

The health extension who were non-consent to participate in the study and those who were on maternal live during the data collection.

4.12. DATA QUALITY MANAGEMENT

The questionnaire was pretested on 5% of the sample size in (mean about 15 health extension worker) Nifas silk Lafto (woreda 3 and woreda 1) health center to ensure its consistency, completeness and appropriate modifications was done before the actual data collection which was not included in the actual study. The contented and aspect of validity of the questionnaire was done in previous studies(48, 49). Problems with clarity and relevance during the pretest was addressed immediately. To ensure data quality, the data collectors were provided intensive training on the objective of the study, contents of the questionnaires, extracting the health extension workers data through interview, when to start and end data collection process, whom to include and exclude and how to maintain confidentiality of the study subjects. The collected data was checked on the daily based supervisor for completeness.

4.13. ETHICAL CONSIDERATION

Ethical clearance was obtained from ethical clearance committee (IRB) of Addis Ababa university, college of health science. After receiving ethical clearance, permission to conduct the research was obtained from the Addis Ababa health bureau. Information sheet was prepared and read to all eligible participants of the study to obtain verbal informed consent, all participants was informed the purpose of the study and their participation is voluntary. Name of the participant was omitted from the questionnaire; instead we use code number to confirm confidentiality.

4.14. DISSEMINATION OF RESULTS

After completion of research, the report of the study was presented during defense and the final result was submitted to Addis Ababa university college of health science and it will be disseminated to studied health institution of the Addis Ababa health bureau, FMOH, policy makers and other responsible bodies. Furthermore, the paper will be presented on workshops, seminars. Finally, the manuscript will be submitted to scientific journals for possible publication.

5. RESULTS

5.1. SOCIO-DEMOGRAPHIC CHARACTERISTICS OF URBAN FEMALE HEW

A total of 320 planned study participants, complete response rate was obtained for 312 (97.5%) of urban health extension workers were included in this study. The mean age (±) standard deviation) of the study participant was 20.41 years ± SD, 3.73 years). Most of the study participants 301 (96.5%) live in Addis Ababa. About 208 (66.7%) of the participants were Orthodox Christians while 69 (22.1%) were protestants. Regarding education, about 236 (75.6%) of the participants had acquired level four (diploma) while 76 (24.4) were first degree holders. About 119(38.1) of the respondents had one to two years of work experience while 67 (21.5) had three to four years. Most of the study respondents 172(55.1%) were married but majority of them had no child 149(47.8%) while 69(22.1%) had two children and 172(55.1%) of the participants were married at the age of greater than ≥18 years. Most of the participants 226(72.4%) started sexual intercourse at the age of 18years. Most of the respondents 145(46.5%) reported having less than 5000 ETB of average monthly income. About 297(95.2%) of respondents were no family history of cervical cancer and 304(97.4%) of them had no history of STI and about 274(87.8%) of the respondents had HIV tested (Table 1).

Table 1: Scio-demographic characteristics of respondents of cervical cancer screening and factors associated of urban health extension workers, 2020 (N= 320).

Variables	Frequency	Percent
Residence		
Addis Ababa	301	96.5
Out of Addis Ababa	11	3.5
Age (mean =20.41, SD=3.73**)**		
20-29	204	64.4
30-39	104	33.3
≥40	4	1.3
Religion		
Orthodox	208	66.7
Protestant	69	22.1
Muslim	28	9
Catholic	7	2.2
Level of education		
Diploma (level four)	236	75.6
Frist degree (BSc)	76	24.4
Work experience		

1-2 years	119	38.1
3-4 years	67	21.5
5-6 years	43	13.8
>6	83	26.6
Marital status		
Single	130	41.7
Married	172	55.1
Other	10	3.2
Age of marriage		
<18years	12	3.8
≥18years	172	55.1
Number of children		
No child	149	47.8
1-2 children	129	41.3
3-4 children	33	10.6
≥5 children	1	0.3
Monthly house hold income		
<5000 ETB	145	46.5
5000-10000ETB	123	39.4
>10000ETB	44	14.1
Age of first sexual intercourse		
<18years	30	9.6
≥18years	226	72.4
Hx of cervical ca in family		
Yes	12	3.8
No	297	95.2
Don’t know	3	1.0
Hx of STI		
Yes	8	2.6
No	304	97.4
HIV/AIDS test		
Yes	274	87.8
No	38	12.2

5.2. knowledge towards cervical cancer screening among urban health extension workers in Addis Ababa, 2020.

Among the participants about 312 of them have heard about cervical cancer. Using the sum of 31 questioner of knowledge items, the mean age 20.41(SD ± 3.73) years based on this finding, about 151 (48.4%) of the participants were good knowledge about cervical cancer screening while about 161(51.6) of them were had poor knowledge (Table 2 & figures 1). About 151(48.4%) of participants source of information, were health professionals and 100(32.1%) have heard from teachers. About 295(94.6%) believe that cervical cancer is preventable disease and 207(66.3) of screening service were available in the health center. Most of the participants 297(95.2%) know the screening procedure of cervical cancer screening while about 223(71.5%) of them know screening by of Pap smear and 179(57.4%) were know screening by HPV. The source of information about screening method was health care provided 151(48.4%). About 302(96.8) of the participants believe screening was necessary important early detect and prevention of cervical cancer and about 254(81.4%) participants believed that detecting cervical cancer by screening before symptoms appear. About 148(47.8%) of the participants knew every five years of frequent screening and 134(42.9%) believed that women should start cervical screening at the age of 30 years. Majority of the participants 295(94.6%) believe that cervical cancer is curable if detected early (Table 3).

Table 2: Level of knowledge towards cervical cancer screening based on mean score.

Variables	**Frequency**	**Percent**
Good Knowledge	151	48.4
Poor Knowledge	161	51.6
Mean score X(+SD)	20.4(±3.73)	

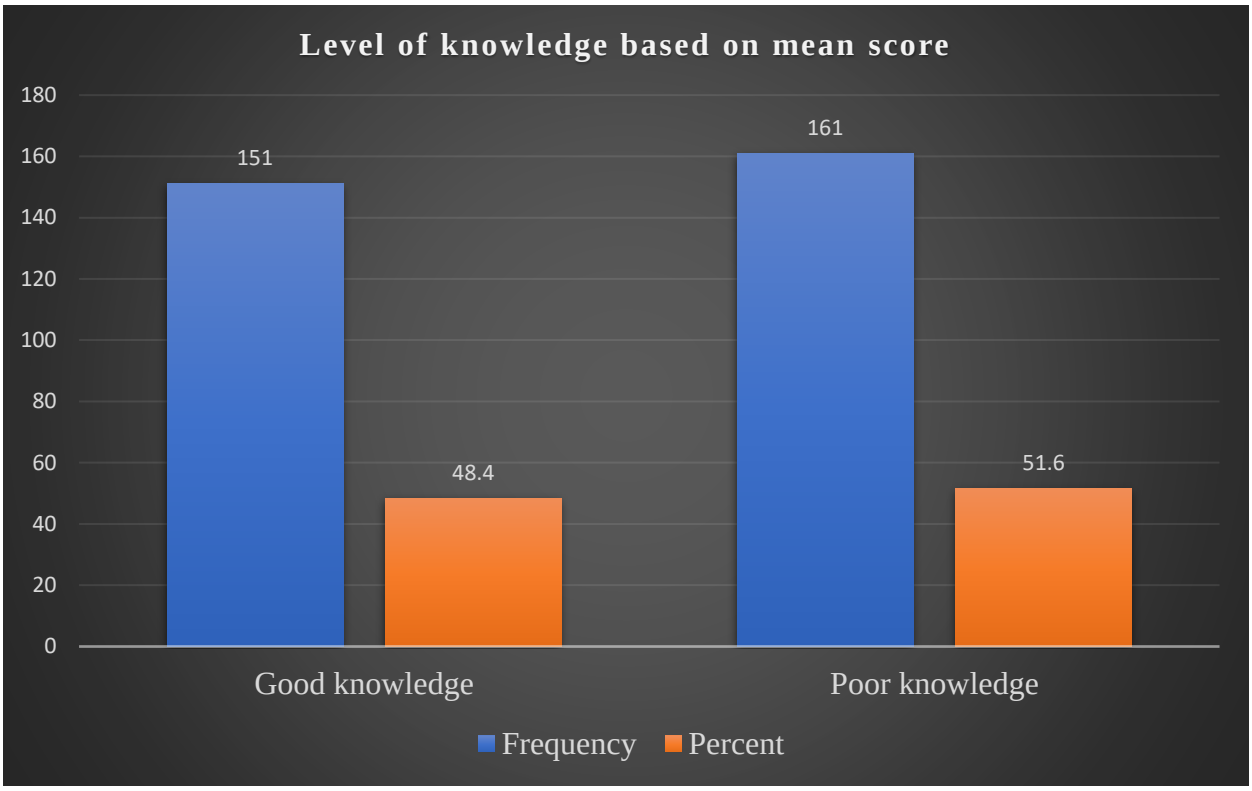

Figure 1: All over the knowledge towards cervical cancer screening and factors associated among urban health extension workers, 2020.

Table 3: Knowledge towards cervical cancer screening and associated factors among urban health extension workers, 2020.

Variables	Frequency	Percent
Predisposing factors to CCS		
Having multiple sexual partners	246	78.8
Early onset sexual intercourse	222	71.2
Cigarette smoking	155	49.7
Infection by HPV virus	184	59.0
Sign and symptoms		
Vaginal bleeding	228	73.1
Vaginal bleeding during / after sex	213	68.3
Foul smelling vaginal discharge	225	72.1
Pelvic or back pain	174	55.8
Post coital bleeding	95	30.4
Who is risk to develop CCS		
All women	152	48.7
Married women	146	46.8
HIV positive women	174	55.8
Women who are sexually active	187	59.9
Screening methods		

Pap smear	223	71.5
VIA	97	31.1
HPV testing	179	57.4
How frequent screening done		
Ones every year	115	36.9
Ones every three years	48	15.4
Ones every 5 years	149	47.8
When women screening		
When menstruation start	52	16.7
As soon as sexually active	102	32.7
At the age of 30	134	42.9
When start having children	12	3.8
After the menopause	2	0.6
Don't know	10	3.2
Treatment modalities		
Herbal remedies	12	3.8
Surgery	169	54.2
Radiotherapy	168	53.8
Chemotherapy	240	76.9
Cryotherapy and LEEP	83	26.6
Benefit of screening		
Early detection	232	74.4
Early treatment	210	67.3
Early diagnosis	152	48.7
Decreasing chances of an abortion	74	23.7

Information source of urban female HEW about cervical cancer screening.

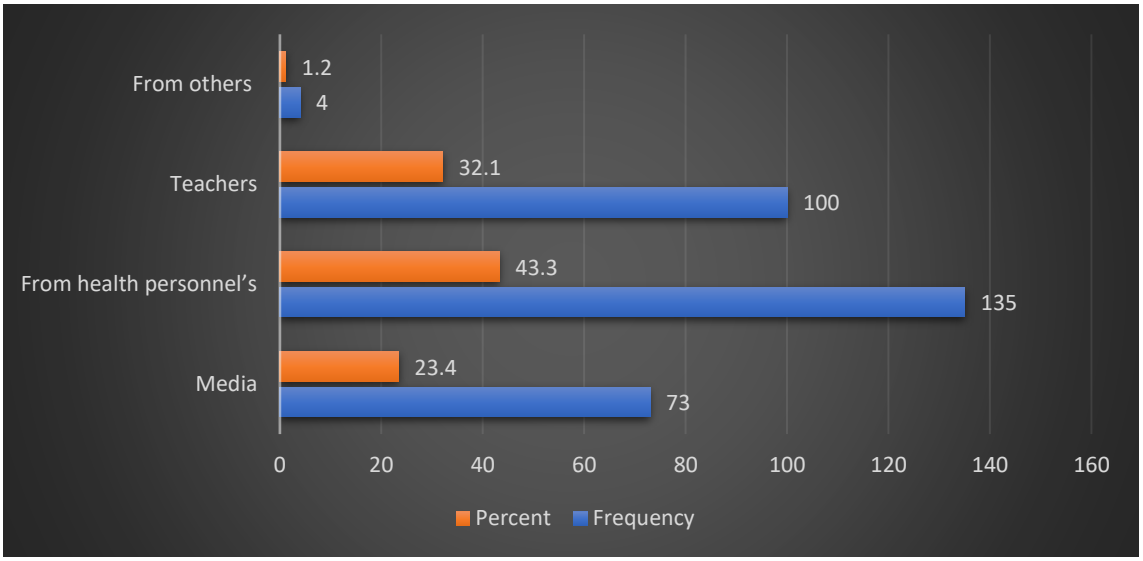

Figure 2: source of information about cervical cancer screening.

Most of the study participants 131(42.0%) agreed with the chances of getting cervical cancer risk or getting cervical disease while 70 (22.4%) of them strongly agreed. The respondents were asked whether cervical cancer screening undertakes only when there is symptom and about 113(36.2%) of them disagree while 101 (32.4%) strongly disagree. Most of the participants believe that CCS is important even if not sexually active 108(34.6%) agreed and 72(23.1%) of the participants disagreed. Half of the study participants 150 (50%) have agreed that cervical cancer is more serious than other disease while 80 (25.6%) of the respondents strongly agreed with the notion. The respondents were asked whether conducting cervical cancer screening is painful and about 110 (35.5%) agreed that it is painful while 84 (26.9%) of them were not sure. They were asked whether CCS can cause infertility and 128 (41.0%) of the respondents strongly disagree for the positive effect of CCS for infertility while 98 (41.0%) disagreed with it. From a total of 312 respondents, 166 (53.2%) have a favorable perception towards cervical cancer screening (Table 4 & figures 3).

Table 4: Perception of cervical cancer screening among urban health extension worker in Addis Ababa, 2020.

Variable	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
Chance of getting cervical cancer	23 (7.4%)	57(18.3%)	31(9.9%)	131(42.0%)	70(22.4%)
CCS undertake only when there is symptom	101(32.4%)	113(36.2%)	32(10.0%)	45(14.4%)	21 (6.7%)
CCS important even if not sexually active	44 (14.1%)	72(23.1%)	43(13.8%)	108(34.6%)	45(14.4%)
Is cervical cancer more serious than other disease	29 (9.3%)	26(8.3%)	21(6.7%)	156(50.0%)	80(25.6%)
Cervical cancer screening is painful	36(11.5%)	63(20.2%)	84(26.9%)	110(35.5%)	19 (6.1%)
Cervical cancer screening may cause infertility	128(41.0%)	98(31.4%)	41(13.1%)	24(7.7%)	21 (6.7%)

Regards of the perception of the participants about 166(53.2%) of the urban female extension workers were negative perception about knowledge towards cervical cancer screening while about 146(46.6) of the participants had positive perception

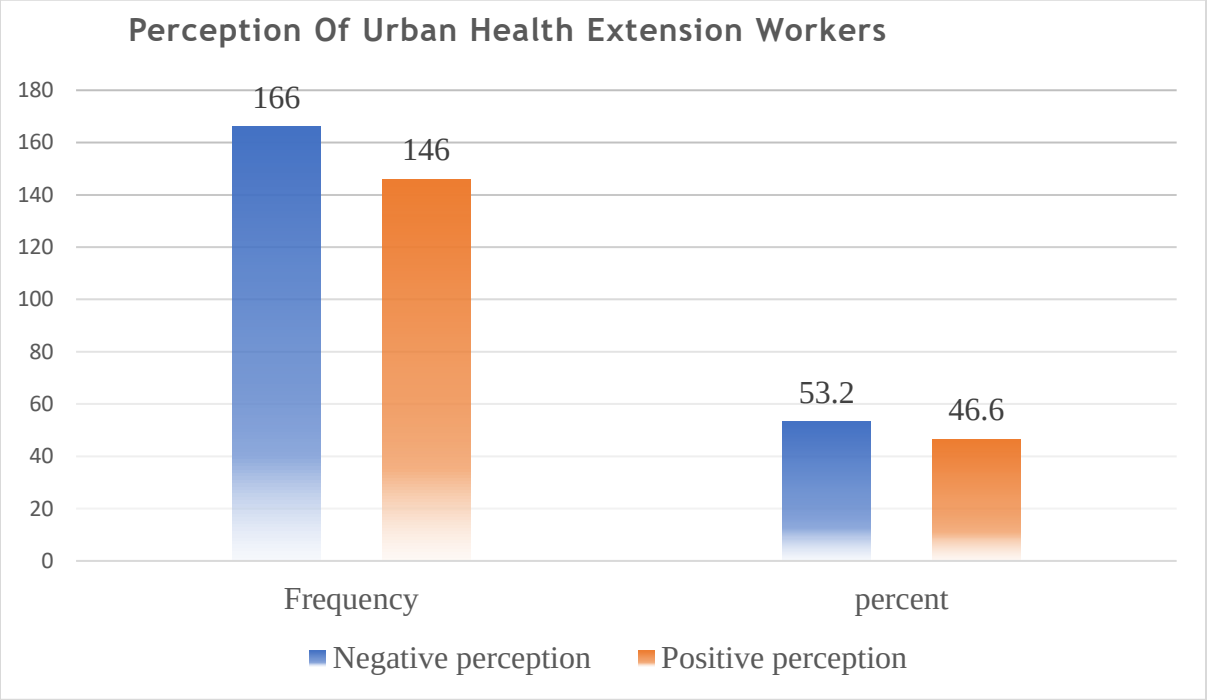

Figure 3: *All over the perception of cervical cancer screening among urban health extension workers in Addis Ababa, 2020.*

A cross-tabulation was done in order to identify the association of independent variables with knowledge in both bivariate and multivariate analysis. Each variable show association (p- value < 0.2) with this outcome variables in bivariate analysis like, work experience, number of children, age of marriage, age of first sexual intercourse and monthly income were selected as candidate variables for multivariable logistic regression analysis. Multivariable logistic regression analysis was used by taking all these factors into account simultaneously and only two of the most contributing factors remained to be significantly associated with knowledge (work experience and monthly income).

In multivariable logistic regression, work experience [AOR = 4.32, 95% CI: (1.71, 10.94], monthly income [AOR = 3.75, 95% CI: (1.49, 9.41) and (A0R= 3.08 95% CI: (1.06, 8.98). Based on this study, health extension workers those who have 1-2 years' work experience were [AOR = 4.32

95% CI: (1.71, 10.94], 4.32 times less likely to have knowledge about cervical cancer screening compered to health extension workers those who have 3-4 years' work experience and health extension workers those have less than 5000 monthly income were [AOR = 3.75, 95% CI: (1.49, 9.41) 3.75 times more likely to have knowledge about cervical cancer screening compared to health extension workers those have monthly income between 5000 and 10000 and health extension workers those have less than 5000 monthly income were (A0R= 3.08 95% CI: (1.06, 8.98) 3.08 times more likely to have knowledge about cervical cancer screening compared to health extension workers those have monthly income greater than 10,000 (Table 4).

Table 5: Factors association with cervical cancer screening among urban health extension workers, 2020.

Variables		**Knowledge towards CCS**		**Crude Odds Ratio, COR (95% CI)**	**Adjusted Odds Ratio, AOR (95% CI)**
		No	**Yes**		
Work experience	1-2	69	50	1.00	1.00
	3-4	25	42	2.31(1.25, 4.28)	1.02 (0.39, 2.65)
	5-6	21	22	1.44(0.71, 2.91)	4.32(1.71, 10.94) *
	>6	46	37	1.11(0.63, 1.95)	1.34(0.54, 3.29)
Number of children	No child	82	67	1.00	1.00
	1-2 children	65	64	1.21(0.75, 1.93)	1.18(0.43, 3.20)
	3-4 children	14	19	1.66(0.78, 3.56)	2.37(0.69, 8.15)
	≥5 children	0	1	----------	----------
Age of marriage	<18years	10	2	1.00	1.00
	≥18years	82	90	5.488(1.16,25.78)	1.62(0.08,31.54)
Age at 1st sexual intercourse	<18years	22	8	1.00	1.00
	≥18years	106	120	3.11(1.33,7.28)	2.78(0.22, 34.38)
Monthly income	<5000 ETB	88	57	1.00	1.00
	5000-10000ETB	53	70	2.04(1.25,3.32)	3.75(1.49, 9.41) *
	>10000ETB	20	24	1.85(0.93, 3.65)	3.08(1.06, 8.98) *

** Where significant at P-value < 0.05, COR=Crude odds ratio, AOR=Adjusted odds ratio, CI= confidence interval.*

6. DISCUSSION

This study, explored the knowledge towards cervical cancer screening and factors associated among urban HEW. In Ethiopia, women are very lucky because of cervical cancer screening service were held cost free. Using this available opportunity, women need to present themselves to health facility to get the free service of CCS. This cost-free cervical cancer screening should be highly contributing in the reduction of morbidity and mortality among women. At the same time, health care providers should encourage women to get the service of cervical cancer screening. Cervical cancer screening is one of the strategies towards the reduction of disease burden in developed and developing countries and the preventives mothed through early detection and treatment by manipulating women's knowledge about cervical cancer. In this study, results demonstrate that about 51.6% of urban health extension workers had poor knowledge regarding predisposing factor, sign and symptom, screening method, importance of screening and treatment modality which is similar with the studies conducted in Hosana (46.3%), Wolaita Zone (43.1%) and Addis Ababa (51.5%) and different countries like Tanzania Turkey and Uganda (24, 53-57).

There is another study which is conducted in Swaziland (53.5%), Tanzania (63.2%), Qatar (92.2%) and Kenya (79.8%), were higher with this report of their knowledge about cervical cancer was adequate among the nurses those who were participated in the study this indicate that economic status of the country's GDP, information accessibility, sociodemographic characteristic and the educational back ground of the individuals may one of the indication(26, 45, 53, 58, 59).

Among in this study participants about (100%) of health extension workers heard about cervical cancer screening specified and they got the information from health personnel, followed by social media and teachers (43.3%) (32.1%) and (23.4%) similar with study conduct in Bishoftu. All of the participant in this study Similar study was reported by another study in North Eastern India, North central Nigeria, Bahrain and Nepal (29, 44, 50, 60-62).

The study's results indicated that more than half of the urban health extension workers knew at least four risk factors of cervical cancer, Having multiple sexual partners, Early onset sexual intercourse, Cigarette smoking, Infection by HPV virus (78.8%, 71.2%, 49.7%, 59.0%), which is higher than study conducted in Saud Arabia (8.4%), (14.4%), (12.9%) and (9.6%)were known

(40). This indicate the level of knowledge of the study participant and household income of each individual is one of the factors.

On the other hand, most of the urban health extension workers knew were specified pap smear(71.5%), VIA (31.4%) and HPV test (57.4%) a cervical cancer screening method, which is similar study conducted in pap test (82%), VIA(35%) and HPV test (39%)Cameroonian (63). But did not know that when women should begin cervical cancer screening the similar study reported was Caribbean(64). This indicate the level of the knowledge of the study participant and household income of each individual were comparable.

Regarding source of information, almost all of them have good knowledge about cervical cancer as a preventable disease and the majority of them noted that it is treatable if detected early. This is consistent with the previous studies done on this subject most of the respondents in our study acquired their knowledge about the disease from mass media, health care providers, and teacher during colleagues' common sources of information similar Previous studies performed in Turkey, Nigeria as well as Bishoftu, Ethiopia (44, 50, 53).

All most the majority of study participants familiar with the cervical cancer sign and symptoms mentions such as: Intermenstrual bleeding were about (85%), post-menopausal bleeding (84%), and offensive vaginal discharge were about (72.1%) almost nearly similar with (83%) in Uganda. About (94.6 %) of believe that it could be cured if diagnosed at an early stage which similar with result of (92%) in Uganda (65) However, they did not know what screening requires but the health extension workers believe that screening is good as it will help those who have problem to know early so it can be ideally manageable the disease. Poor knowledge of cervical cancer among women has been reported in various studies also (66-68) in Ibadan, Malaysian.

Health extension workers mostly noticeable, frontline personnel of the health care system and are crucial in providing health education to society. However, our data suggest that health extension workers levels of knowledge and understanding of cervical cancer screening as well as its preventable nature should be improved. For successful screening programs, all health extension workers must understand, screening mothed, risk factors when should be screening and the other option of treatment modality for the cancer of cervix as well as the character of screening as a

safety measure. Continuing health extension workers and other health professional education may contribute to strengthening cervical cancer screening programs Cameroonian, Uganda (63, 65).

Work experience and month income of the health extension worker of positive associated with cervical screening. There are a problem regards of monthly income of women because of they have so many responsibilities. This is similar study conducted in different region in Ethiopia like Hosanna, Hawassa, North west Ethiopia and Jimma (11, 33, 34, 55). And also, were negative association differently in study conducted in Arba Minch and Amhara (12, 35).

The results of our study suggest that work experience and household income has a positive effect on the knowledge towards cervical cancer screening service and associated factors. That is, urban female health extension workers, those who had 5-6 years' experience 4.3 times more likely have knowledge towards cervical cancer screening, when comparing with those who having less than 1-4years work experience. The different finding was empirical studies done in, India, Nigeria, Ghana, Gondar and Addis Ababa (69-73) [29], this indicated work exposer of health care workers and level of education were one of the associated factors(11). And also, the other study report West shoa and Wollega University differently findings indicated that regards of health extension workers providing source of information age of the participant and the level of education respectively(74, 75).

Those who of average monthly household income was greater than 5000 ETB (Ethiopian Birr) were 3.75 and 3.08 times more likely to have good knowledge than those through less than or equal to 5000ETB (Ethiopian Birr). This indicated that those women were seek for health care during different symptom which lead to them their follow up and those who have higher household monthly income might have access to different sources of information knowledge towards cervical cancer screening which is similar study conducted in west shoa (75).

The majority of the urban health extension workers in this study had negative perception about all over (53.2%) similar with the studies conducted about (55.9%) in (Wollega University) and about (54.5%) Dolata Zone, Hosanna and Tanzania (29, 55, 57, 74). Regards of chance of getting cervical cancer (64.4%) which is lower with this study conducted in Qatar about (42.2%) were reported(59) and cervical cancer screening is painful during performing the producer about

(41.6%) which is higher with study conducted in (16.8%)(56). Perception of health extension workers was negative about economic factors, alternative imposing sources of reproductive health knowledge and unfriendly health care services. The belief of health model in line, report has been exposed of the women were not certainly alert of cancer of the cervix nor understood their vulnerability to the disease thus they were not inspired to use screening for cervical cancer services. Since the women were not well educated and the screening facility was not readily available and other factors were identified.

7. CONCLUSION AND RECOMMENDATIONS

7.1.CONCLUSION

- This study has revealed that the knowledge towards cervical cancer screening and associated factors was poor among urban female health extension workers at Addis Ababa.
- Specifically, the knowledge on predisposing factors, benefit of screening, risk factors, signs and symptoms, was poor. Considerable proportions of urban health extension workers have low information about recommended age to start cervical cancer screening and frequency of screening.
- Work experience and month household income were significantly associated with Knowledge towards cervical cancer screening
- Lastly, additional study is required to clarify the indisposition of qualified healthcare workers to go for screening aside knowledge nearby the problem and complete access to screening services. Healthcare workers need to be targeted first because of their essential role in any future screening program.

7.2.RECOMMENDATIONS

1. According to this study, health extension workers have inadequate information about the Cervical Cancer Screening, the government should dispatch them in order to created accessible information to understand and get awareness about Cervical Cancer Screening.

2. Based on this result continuing medical education programs including health extension workers should be raise the knowledge about cervical cancer screening. Healthcare workers including health extension workers should be trained to encourage screening. Lastly, additional study is required to clarify the indisposition of qualified healthcare workers to go for screening despite knowledge about the problem and prepared welcome to screening services.

3. Government to address successful screening programs, should be train all health extension workers to understand the predisposing factors, screening mothed, risk factors when should be screening and treatment modality and cancer of the cervix as well as the status of screening as a protective measure.

4. It was good if the study was complemented with qualitative part to obtain in-depth information

Federal ministry of Health

- Should have to prepare training on cervical screening in order for health extension workers provide to deliver good awareness to the women.
- Should have to prepare small scale library so that health extension workers can access it and update the knowledge of cervical cancer screening.

Health bureau and health center

- Should assign heath extension workers who have adequate experiences cervical cancer screening.
- Should have to prepare small scale library so that heath extension workers can access it and update the knowledge of cervical cancer screening.

Other researchers and for health extension

- Should further incorporate other factors using longitudinal or qualitative study designs.
- Health providers should also read more and update themselves regularly.

8. STRENGTH AND LIMITATIONS OF THE STUDY

8.1.STRENGTH OF THE STUDY

- Study was done in primary health care center; health extension workers are the back bone for preventive activities.
- Study was done in 36 health centers in Addis Ababa which increases the representativeness of the findings.

8.2.LIMITATIONS OF THE STUDY

- Limited discussion and comparison were done, due to insufficient literatures from developing countries.
- This study recruited urban health extension workers only in Addis Ababa.
- Due to the pandemic disease of covid-19 was one of the limitations, as such as possible to as my planned to accomplish the study.
- Lastly, we did not ensured information in all possible confounders for the association between result and experiences.

10. REFERENCE

1. Iyer AL, Bundorf MK, Gyrd-Hansen D, Goldhaber-Fiebert JD, Cyr P-R, Sønbø Kristiansen I. How does information on the harms and benefits of cervical cancer screening alter the intention to be screened?: a randomized survey of Norwegian women. European Journal of Cancer Prevention. 2019;28(2):87-95.
2. Gebreegziabher M, Asefa NG, Berhe S. Factors affecting the practices of cervical cancer screening among female nurses at public health institutions in Mekelle town, Northern Ethiopia, 2014: a cross-sectional study. Journal of Cancer Research. 2016;2016.
3. Lin W, Wang Y, Liu Z, Chen B, Yuan S, Wu B, et al. Inequalities in Awareness and Attitude towards HPV and Its Vaccine between Local and Migrant Residents Who Participated in Cervical Cancer Screening in Shenzhen, China. Cancer Research and Treatment. 2019.
4. Force UPST. Screening for Cervical Cancer: US Preventive Services Task Force Recommendation Statement. JAMA. 2018;320(7):674-86.
5. Lees BF, Erickson BK, Huh WK. Cervical cancer screening: evidence behind the guidelines. American Journal of Obstetrics and Gynecology. 2016 2016/04/01/;214(4):438-43.
6. Organization WH. WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention. 2013. Geneva WHO. 2015.
7. Organization WH. WHO guidelines for screening and treatment of precancerous lesions for cervical cancer prevention: World Health Organization; 2013.
8. Partridge EE, Abu-Rustum N, Giuliano A, Massad S, McClure J, Dwyer M, et al. Cervical cancer screening. Journal of the National Comprehensive Cancer Network. 2014;12(3):333-41.
9. Bayu H, Berhe Y, Mulat A, Alemu A. Cervical cancer screening service uptake and associated factors among age eligible women in Mekelle Zone, Northern Ethiopia, 2015: a community based study using health belief model. PloS one. 2016;11(3):e0149908.
10. Mailhot Vega RB, Balogun OD, Ishaq OF, Bray F, Ginsburg O, Formenti SC. Estimating child mortality associated with maternal mortality from breast and cervical cancer. Cancer. 2019;125(1):109-17.
11. Assefa AA, Astawesegn FH, Eshetu B. Cervical cancer screening service utilization and associated factors among HIV positive women attending adult ART clinic in public health facilities, Hawassa town, Ethiopia: a cross-sectional study. BMC health services research. 2019;19(1):847.
12. Teka T, Kote M, Kejela G, Getachew T. Magnitude and Factors Associated with Precervical Cancer among Screened Women in Southern Ethiopia. Advances in Public Health. 2019;2019.
13. Shrestha AD, Neupane D, Vedsted P, Kallestrup P. Cervical Cancer Prevalence, Incidence and Mortality in Low and Middle Income Countries: A Systematic Review. Asian Pac J Cancer Prev. 2018;19(2):319-24. PubMed PMID: 29479954. eng.
14. Ifemelumma C, Anikwe C, Okorochukwu B, Onu F, Obuna J, Ejikeme B, et al. Cervical Cancer Screening: Assessment of Perception and Utilization of Services among Health Workers in Low Resource Setting. International journal of reproductive medicine. 2019;2019.
15. Sankaranarayanan R, Budukh AM, Rajkumar R. Effective screening programmes for cervical cancer in low-and middle-income developing countries. Bulletin of the World Health Organization. 2001;79:954-62.

16. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA: a cancer journal for clinicians. 2018;68(6):394-424.
17. Munoz N, Bosch FX, Castellsagué X, Díaz M, De Sanjose S, Hammouda D, et al. Against which human papillomavirus types shall we vaccinate and screen? The international perspective. International journal of cancer. 2004;111(2):278-85.
18. Sawaya GF, Kulasingam S, Denberg TD, Qaseem A, Physicians ftCGCotACo. Cervical Cancer Screening in Average-Risk Women: Best Practice Advice From the Clinical Guidelines Committee of the American College of Physicians. Annals of Internal Medicine. 2015;162(12):851-9.
19. Anttila A, von Karsa L, Aasmaa A, Fender M, Patnick J, Rebolj M, et al. Cervical cancer screening policies and coverage in Europe. European Journal of Cancer. 2009 2009/10/01/;45(15):2649-58.
20. Hall MT, Simms KT, Lew J-B, Smith MA, Brotherton JML, Saville M, et al. The projected timeframe until cervical cancer elimination in Australia: a modelling study. The Lancet Public Health. 2019 2019/01/01/;4(1):e19-e27.
21. Malila N, Leinonen M, Kotaniemi-Talonen L, Laurila P, Tarkkanen J, Hakama M. The HPV test has similar sensitivity but more overdiagnosis than the Pap test—a randomised health services study on cervical cancer screening in Finland. International journal of cancer. 2013;132(9):2141-7.
22. Hoque ME, Ghuman S, Coopoosmay R, Van Hal G. Cervical cancer screening among university students in South Africa: a theory based study. PloS one. 2014;9(11):e111557.
23. Ndikom CM, Ofi BA. Awareness, perception and factors affecting utilization of cervical cancer screening services among women in Ibadan, Nigeria: a qualitative study. Reproductive health. 2012;9(1):11.
24. Urasa M, Darj E. Knowledge of cervical cancer and screening practices of nurses at a regional hospital in Tanzania. African health sciences. 2011;11(1).
25. Asgary R, Adongo PB, Nwameme A, Cole HVS, Maya E, Liu M, et al. mHealth to Train Community Health Nurses in Visual Inspection With Acetic Acid for Cervical Cancer Screening in Ghana. J Low Genit Tract Dis. 2016;20(3):239-42. PubMed PMID: 27030884. eng.
26. Kieti SN. Knowledge, attitude and practices on cervical cancer screening and prevention methods among nurses at two Nairobi hospitals in Kenya 2016.
27. Gelibo T, Roets L, Getachew T, Bekele A. Coverage and factors associated with cervical Cancer screening: results from a population-based WHO steps Study in Ethiopia. Adv Oncol Res Treat. 2017;1(115):2.
28. Aweke YH, Ayanto SY, Ersado TL. Knowledge, attitude and practice for cervical cancer prevention and control among women of childbearing age in Hossana Town, Hadiya zone, Southern Ethiopia: Community-based cross-sectional study. PLoS One. 2017;12(7):e0181415.
29. Solomon K, Tamire M, Kaba M. Predictors of cervical cancer screening practice among HIV positive women attending adult anti-retroviral treatment clinics in Bishoftu town, Ethiopia: the application of a health belief model. BMC cancer. 2019;19(1):989.
30. Ncube B, Bey A, Knight J, Bessler P, Jolly PE. Factors associated with the uptake of cervical cancer screening among women in Portland, Jamaica. North American journal of medical sciences. 2015;7(3):104.

31. Nwabichie CC, Manaf RA, Ismail SB. Factors Affecting Uptake of Cervical Cancer Screening Among African Women in Klang Valley, Malaysia. Asian Pac J Cancer Prev. 2018;19(3):825-31. PubMed PMID: 29582641. eng.
32. Orang'o EO, Wachira J, Asirwa FC, Busakhala N, Naanyu V, Kisuya J, et al. Factors associated with uptake of visual inspection with acetic acid (VIA) for cervical cancer screening in Western Kenya. PloS one. 2016;11(6):e0157217.
33. Geremew AB, Gelagay AA, Azale T. Uptake of pre cervical cancer screening service and associated factors among women aged 30-49 years in Finote Selam town Northwest Ethiopia. International Journal of Collaborative Research on Internal Medicine & Public Health. 2018;10(2):0-.
34. Nigussie T, Admassu B, Nigussie A. Cervical cancer screening service utilization and associated factors among age-eligible women in Jimma town using health belief model, South West Ethiopia. BMC women's health. 2019;19(1):127.
35. Belayneh T, Mitiku H, Weldegebreal F. Precancerous cervical lesion and associated factors among HIV-infected women on ART in Amhara Regional State, Ethiopia: A hospital-based cross-sectional study. International journal of health sciences. 2019;13(3):4.
36. Howlader N, Noone A, Krapcho M, Garshell J, Miller D, Altekruse S, et al. SEER Cancer Statistics Review, 1975-2011, National Cancer Institute. Bethesda, MD. 2014.
37. Smith RA, Manassaram-Baptiste D, Brooks D, Doroshenk M, Fedewa S, Saslow D, et al. Cancer screening in the United States, 2015: a review of current American cancer society guidelines and current issues in cancer screening. CA: a cancer journal for clinicians. 2015;65(1):30-54.
38. Massad LS, Einstein MH, Huh WK, Katki HA, Kinney WK, Schiffman M, et al. 2012 updated consensus guidelines for the management of abnormal cervical cancer screening tests and cancer precursors. J Low Genit Tract Dis. 2013;17:S1-S27.
39. Thompson EL, Galvin AM, Daley EM, Tatar O, Zimet GD, Rosberger Z. Recent changes in cervical cancer screening guidelines: US women's willingness for HPV testing instead of Pap testing. Preventive medicine. 2019:105928.
40. Heena H, Durrani S, AlFayyad I, Riaz M, Tabasim R, Parvez G, et al. Knowledge, Attitudes, and Practices towards Cervical Cancer and Screening amongst Female Healthcare Professionals: A Cross-Sectional Study. Journal of oncology. 2019;2019.
41. Ngwenya D, Huang S-L. Knowledge, attitude and practice on cervical cancer and screening: a survey of men and women in Swaziland. Journal of Public Health. 2017;40(3):e343-e50.
42. Vishwakarma S, Rawat R, Mittal N, Shree P. Knowledge, attitude and practices about cervical cancer screening among nursing staff in rural tertiary care center. International Journal of Reproduction, Contraception, Obstetrics and Gynecology. 2018 08/27;7:3796.
43. Jassim G, Obeid A, Al Nasheet HA. Knowledge, attitudes, and practices regarding cervical cancer and screening among women visiting primary health care Centres in Bahrain. BMC Public Health. 2018 2018/01/11;18(1):128.
44. Olubodun T, Odukoya OO, Balogun MR. Knowledge, attitude and practice of cervical cancer prevention, among women residing in an urban slum in Lagos, South West, Nigeria. The Pan African Medical Journal. 2019;32.
45. Mabelele MM, Materu J, Ng'ida FD, Mahande MJ. Knowledge towards cervical cancer prevention and screening practices among women who attended reproductive and child health

clinic at Magu district hospital, Lake Zone Tanzania: a cross-sectional study. BMC cancer. 2018;18(1):565.
46. Dulla D, Daka D, Wakgari N. Knowledge about cervical cancer screening and its practice among female health care workers in southern Ethiopia: a cross-sectional study. International journal of women's health. 2017;9:365.
47. Thompson EL, Galvin AM, Daley EM, Tatar O, Zimet GD, Rosberger Z. Recent changes in cervical cancer screening guidelines: US women's willingness for HPV testing instead of Pap testing. Preventive medicine. 2020;130:105928.
48. Hoque E, Hoque M. Knowledge of and attitude towards cervical cancer among female university students in South Africa. Southern African Journal of Epidemiology and Infection. 2009;24(1):21-4.
49. Al Meer F, Aseel M, Al Khalaf J, Al Kuwari M, Ismail M. Knowledge, attitude and practices regarding cervical cancer and screening among women visiting primary health care in Qatar. EMHJ-Eastern Mediterranean Health Journal, 17 (11), 855-861, 2011. 2011.
50. Heyi WD, Bekabil TT, Ebo GG. KNOWLEDGE, ATTITUDE AND PRACTICE OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 15-49 YEARS IN BISHOFTU TOWN, EAST SHEWA ZONE, OROMIA REGION, ETHIOPIA, 2016. Ethiopian Journal of Reproductive Health. 2018;10(2):10-.
51. Dulla D, Daka D, Wakgari N. Knowledge about cervical cancer screening and its practice among female health care workers in Southern Ethiopia: A cross-sectional study. International Journal of Women's Health. 2017 05/23;Volume 9.
52. Gebreegziabher M, Asefa NG, Berhe S. Factors Affecting the Practices of Cervical Cancer Screening among Female Nurses at Public Health Institutions in Mekelle Town, Northern Ethiopia, 2014: A Cross-Sectional Study. Journal of Cancer Research. 2016 2016/02/29;2016:4743075.
53. Yaren A, Ozkilinc G, Guler A, Oztop I. Awareness of breast and cervical cancer risk factors and screening behaviours among nurses in rural region of Turkey. European Journal of Cancer Care. 2008;17(3):278-84.
54. Ertem G. Awareness of cervical cancer risk factors and screening behaviour among nurses in a rural region of Turkey. Asian Pac J Cancer Prev. 2009;10(5):735-8.
55. Aweke YH, Ayanto SY, Ersado TL. Knowledge, attitude and practice for cervical cancer prevention and control among women of childbearing age in Hossana Town, Hadiya zone, Southern Ethiopia: Community-based cross-sectional study. PLoS One. 2017;12(7).
56. Berhanu T, Mamo E, Tewolde T, Beshir M. Knowledge of Cervical Cancer and Its Screening Practice among Health Extension Workers in Addis Ababa, Ethiopia. Primary Health Care: Open Access. 2019;9(1):1-5.
57. Tekle T, Wolka E, Nega B, Kumma WP, Koyira MM. Knowledge, Attitude and Practice Towards Cervical Cancer Screening Among Women and Associated Factors in Hospitals of Wolaita Zone, Southern Ethiopia. Cancer Management and Research. 2020;12:993.
58. Ngwenya D, Huang S-L. Knowledge, attitude and practice on cervical cancer and screening: a survey of men and women in Swaziland. Journal of Public Health. 2018;40(3):e343-e50.
59. Alali A, Salem M, Elmahdi H, Alkubaisi N, Alwahedi Z, Taher M, et al. Knowledge, attitudes and practices regarding cervical cancer screening among Female health care workers in primary healthcare in Qatar. World Family Medicine Journal: Incorporating the Middle East Journal of Family Medicine. 2016;99(3660):1-12.

60. Shrestha J, Saha R, Tripathi N. Knowledge, attitude and practice regarding cervical cancer screening amongst women visiting tertiary centre in Kathmandu, Nepal. Nepal Journal of Medical Sciences. 2013;2(2):85-90.
61. Shrestha S, Dhakal P. Knowledge, attitude and practice regarding cervical cancer screening among women attending a teaching hospital, Bharatpur, Chitwan. Journal of family & reproductive health. 2017;11(1):18.
62. Thippeveeranna C, Mohan SS, Singh LR, Singh NN. Knowledge, attitude and practice of the pap smear as a screening procedure among nurses in a tertiary hospital in north eastern India. Asian Pacific Journal of Cancer Prevention. 2013;14(2):849-52.
63. McCarey C, Pirek D, Tebeu PM, Boulvain M, Doh AS, Petignat P. Awareness of HPV and cervical cancer prevention among Cameroonian healthcare workers. BMC women's health. 2011;11(1):45.
64. Zahedi L, Sizemore E, Malcolm S, Grossniklaus E, Nwosu O. Knowledge, attitudes and practices regarding cervical cancer and screening among Haitian health care workers. International journal of environmental research and public health. 2014;11(11):11541-52.
65. Mwaka AD, Orach CG, Were EM, Lyratzopoulos G, Wabinga H, Roland M. Awareness of cervical cancer risk factors and symptoms: cross-sectional community survey in post-conflict northern Uganda. Health Expectations. 2016;19(4):854-67.
66. Carr KC, Sellors JW. Cervical cancer screening in low resource settings using visual inspection with acetic acid. Journal of midwifery & women's health. 2004;49(4):329-37.
67. Ayinde O, Omigbodun A. Knowledge, attitude and practices related to prevention of cancer of the cervix among female health workers in Ibadan. Journal of Obstetrics and Gynaecology. 2003;23(1):59-62.
68. Wong L, Wong Y, Low W, Khoo E, Shuib R. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study. Singapore medical journal. 2009;50(1):49.
69. Nene B, Jayant K, Arrossi S, Shastri S, Budukh A, Hingmire S, et al. Determinants of women's participation in cervical cancer screening trial, Maharashtra, India. Bulletin of the World Health Organization. 2007;85:264-72.
70. Ezechi OC, Gab-Okafor CV, Ostergren PO, Pettersson KO. Willingness and acceptability of cervical cancer screening among HIV positive Nigerian women. BMC Public Health. 2013;13(1):46.
71. Ebu NI. Socio-demographic characteristics influencing cervical cancer screening intention of HIV-positive women in the central region of Ghana. Gynecologic oncology research and practice. 2018;5(1):3.
72. Nega AD, Woldetsadik MA, Gelagay AA. Low uptake of cervical cancer screening among HIV positive women in Gondar University referral hospital, Northwest Ethiopia: cross-sectional study design. BMC women's health. 2018;18(1):87.
73. Belete N, Tsige Y, Mellie H. Willingness and acceptability of cervical cancer screening among women living with HIV/AIDS in Addis Ababa, Ethiopia: a cross sectional study. Gynecologic oncology research and practice. 2015;2(1):1-6.
74. Tilahun T, Tulu T, Dechasa W. Knowledge, attitude and practice of cervical cancer screening and associated factors amongst female students at Wollega University, western Ethiopia. BMC Research Notes. 2019;12(1):518.

75. Bulto G, Demmissie D, Daka K. Knowledge about Cervical Cancer, Screening Practices and Associated Factors among Women Living with HIV in Public Hospitals of West Shoa Zone, Central Ethiopia. J Women's Health Care. 2019;8:2167-0420.19.

QUESTIONNAIRE

Annex. I. ENGLISH VERSION

INFORMATION SHEET AND CONSENT

Interview guide: Designed to determine the knowledge and factors associated of cervical cancer screening among urban health extension workers in Addis Ababa, Ethiopia.

Title of the research: knowledge and factors associated of cervical cancer screening among urban health extension workers at health centers in Addis Ababa, Ethiopia.

Name of the principal investigator: This study is being conducted by master's student Tiruneh Ararsa Weyesa at Addis Ababa university, college of health science, school of nursing and midwifes with the adviser of Mr. **Niguse Tadele (MSc) and Yohannes Ayalew (MSc)** at Addis Ababa university, college of health science, school of nursing and midwifes. You are invited to participate to the study by chance that helps us to determine the knowledge and factors associated of cervical cancer screening among urban health extension workers at health centers in Addis Ababa, Ethiopia.

Purpose of the research: To assess the knowledge and factors associated of cervical cancer screening among urban health extension workers at health centers in Addis Ababa, Ethiopia and to recommend appropriate recommendations based on the findings.

Overview: You will respond for questions which are simple to respond. The information that you will give is vital for designing and implementing appropriate intervention programs which ultimately reduces Cervical cancer related complications among women.

If you agree to participate in this study: The interview will be conducted in a private room regarding some questions that helps to know knowledge and factors associated of cervical cancer screening among urban health extension workers at health centers of Addis Ababa, Ethiopia**. T**he

interview will last only within 30 to 45 minutes. You have a full right to ask unclear questions as well to discontinue the interview in case you want.

Risk: Participating in this research project has no risks except wasting of 30 - 45 minutes of time because of all depend on full voluntarism and consent.

Benefit: Participating in this research project may not give a direct benefit to you. But your participation is vital for us in order to determine knowledge and factors associated of cervical cancer screening among urban health extension workers at health centers of Addis Ababa, Ethiopia.

Confidentiality: The information that you will give remain confidential since your name (identification) will not be written in this form and locked in locker in only research members can access.

Incentive for participation: No incentive will be given by being participating in the study

Right to refusal: Participating in this research is willingly and no one forces you to answer any question that you don't need to answer and you have right to discontinue the interview at any time that you want. There is no any impact in relation with the clinic staff even if you discontinue the interview.

Research Subjects right: The investigator or his colleagues read and explained all the above information's to me and answered all my questions. I understood that not to participate in this study have no punishment or loss of rights that I am entitled. I may discontinue from the interview at any time. I understood my rights as research subject. I willingly consent to participate in this study. I understood what the study is about. How and why it is being done. I will receive a sign copy of this consent form.

Annex. II. CONSENT FORM

The interviewer briefly described the information about the research in the above information sheet and I understood all conditions stated above. Therefore, I am willing to participate in this study which is titled "knowledge and factors associated of cervical cancer screening among urban health extension workers in Addis Ababa, Ethiopia.

Signature of Participant _____Date of consent signed _____

Data collector name _____Signature _____Date_____

Supervisor 's name _____ signature _____ Date _____

English version questionnaire

Part 1. Socio-demographic characteristics questionnaire of health extension workers participating in the study.

Q. No.	Questionnaire	Responses	Skip
101	Where do you live?	Addis Ababa.....1 Out of Addis Ababa.....2	
102	How old are you? (last celebrated birthday)	----------	
103	What is your Religion?	Orthodox……..…..…….…….....1 Protestant……..……..…….....2 Catholic……..……..…….....3 Muslim…….....….....4 Others……..……..98	
104	What is your current educational level?	Level two ……1 Level three……2 Level Four/Diploma.……3 First degree ……...…..4 Master's degree…..……..…....5	
105	Work experience (Years of Service)?	1-2 years ……..……..…..1 3-5 years ……..……2 6-10 years ……..…… 3 More than 10 years……...….. 4	

106	What is your current marital status?	Single……..……..…..…1 Married ….……..……..…..….....2 Divorced…..…….....…….....3 Widowed…….…..4 Separated…….…..5	If your Answer single Q 108
107	Number of children?	_____	
108	Average Monthly household incomes?	----------	
109	Do you experience sexual intercourse	Yes……..…..……1 No…….....2	
110	Age at first sexual intercourse	----------	
111	Age at first marriage	----------	
112	Was there any one in your family with history of cervical cancer?	Yes……..…..……1 No…….....2 Don't know……..……..….99	
113	Do you have History of STI?	Yes ……..….1 No ……..…..2	
114	Do you test for HIV/AIDS?	Yes ……..…….1 No ……..…..2	

Part 2: knowledge towards Questioner of the health extension workers on cervical cancer screening **circle** your proper **Answer**.

Qn No.	Questionnaire	Response	Skip
201	Have you ever heard of cervical cancer?	Yes…….……...1 No……. ……2	If no skip to205
202	Where did you hear about cervical cancer for the first time?	Media……..……...1 Health personnel……..…..…..…2 Teachers……..…….....3 Relatives……...…….…..….4 Friends…….....…..……5 Religion……..…...6 Other specify…….…98	
203	What are the predisposing factors to cervical cancer? **(multiple answers are possible)**	Having multiple sexual partners…....…1 Early onset sexual intercourse..…...….2 Cigarette smoking……..…….....3 Infection by HPV virus. …….4	

		Other……..…….....98 Do not know.……..…….99	
204	What are the signs and symptoms of cervical cancer? **(multiple answer is possible) Probe**	Vaginal bleeding……..……..…..…1 Vaginal bleeding during/after sex….....2 Foul smelling vaginal discharge...…….3 Pelvic or back pain……..……..……4 Post coital bleeding…….……5 Other……..…….....98 Do not know.……..…….99	
205	Who is at risk of developing cervical cancer? (**multiple answer is possible**)	All women……..……...1 Married women…….…….....…2 HIV positive women……..…….....3 Women who are sexually active.…….....4 Others specify…….…….…….…98	
206	Is cervical cancer preventable disease?	Yes……..……...1 No……..…….…...2 Don't know…….…….….99	
207	Do you know any screening procedures to detect cervical cancer?	Yes……..….……..…1 No…….…..……..…..…2	If no skip to question no 209
208	Which cervical cancer screening methods do you know? (**multiple answers are possible**)	Pap smear….……..….1 VIA…….…..…….2 HPV testing…….……3 others specify……..……98	
209	Cervical cancer screening service is available in your health center?	Yes……..…1 No……..….2	
210	From where did you heard about cervical cancer screening methods for the first time?	Hospital…….…….……1 Health care providers…….…….……2 Television……..……3 Radio…….... …..4 Friend…….…….....…5 Relative…….…….….6 Other specify…….…....98	
211	Do you think screening is necessary for early detection and prevention of cervical cancer?	Yes…….…….1 No…….…….....2 Don't know…….…….….99	

212	Is it possible to detect cervical cancer with screening before symptoms appear?	Yes……1 No……...2 Don't know……...……....99	
213	How frequent, screening should be done for cervical cancer?	Once every year……1 Once every three years……...…2 Once every 5 years…….3 Others specify……...…98	
214	When a woman should have screening?	When menstruation starts ……..1 As soon as sexually active……...……...2 At the age of 30……...……....3 When start having children……...……..4 After the menopause……...…5 Other……...……...…...98 Do not know.……...…….99	
215	Is cervical cancer curable if detected early?	yes…….…1 No…….…….……2 don't know…….…….….99	
216	At what stage can cervical cancer be treated?	At early stage…….…….……1 At late stage…….……..……2 don't know……99	
217	What treatment modalities do you know for cervical cancer (**multiple answers are possible**) **(Probe)**	Herbal remedies…….….1 Surgery……...…. …..….2 Radiotherapy…….…..…3 Chemotherapy…….4 Cryotherapy and LEEP……..…….5 Other……...…….….98 Do not know.……....….99	
218	Benefit of screening	Early detection ……..….1 Early treatment……...….2 Early diagnosis ……..…..…3 Decreasing chances of an abortion.……4 Do not know…….……99	
219	Your culture? Religion allows cervical cancer screening	Yes ……..……...…….1 No…….…..…….2 Do not know…….….99	
220	Did you believe cervical cancer screening is important for women of reproductive age?	Yes…….…….1 No…….…..….2 Do not know…….…….…..99	

Part 3: Perception of cervical cancer screening of health extension workers **questioner tic one of your proper response in the rectangle space.**

No	Items	Strongly disagree	Disagree	Not sure	Agree	Strongly agree
301	Do you believe any women in the reproductive age group, chance of getting the disease?					
302	Is cervical cancer screening (CCS) undertaken only when there is symptom?					
303	Does its important undertaking cervical cancer screening (CCS) even if you does not make sexually active?					
304	Is cervical cancer is more serious than other disease?					
305	Do you believe cervical cancer screening is painful?					
306	Do you believe cervical cancer screening may cause infertility?					

ANNEX II AMHARIC VERSION

የአማርኛ ቋንቋ መጠይቅ

ጥናት አድራጊ፡-ጥሩናህ አራርሳ

ርዕስ፡- የማህጸን ጫፍ ካንሰር ቅድመ ምርመራ ጋር በተያያዘ (**Health extension workers**) ያጣና አከስተንሽን ባላሙያዎች ያላቸውን ግንዛቤያቹን ላማወቅ በአዲስ አበባ የተመረጡ ጤና ጣቢያዎች ውስጥ ማጥናት ናዉ::

ጤና ይስጥልኝ! ስሜ ..... እኔ ዛሬ እዚህ የተገኘሁት የአዲስ አበባ ዩኒቨርስቲ የጤና ስይስ ኮላጅ ጤና ተማሪ የሆነ ጥሩናህ አራርሳ በመወከል ሲሆን ጥናቱም በተመረጡ የአዲስ አበባ ጤና ጣቢያዎች ከላይ በተጠቀሰዉ ርዕስ ላይ ጥናት እያደረገ ሲሆን ይህም የማስተርስ ዲግሪዉን ለማግኘት የሚጠቅማዉ ነው::ከዚህ በታች ጥናቱ ላይ ለመሳተፍ ከመወሰኖህ በፊት የጥናቱን አላማ ፣ ጥናቱ ላይ በመሳተፎ የሚያገኙት ጥቅም እና ጉዳት ያላም ::

አላማ፡- የማህጸን ጫፍ ካንሰር ቅድመ ምርመራ ጋር በተያያዘ (**Health extension workers**) ያጣና አክስተንሽን ባላሙያዎች ያላቸውን ግንዛቢያቹን ላማወቅ በአዲስ አበባ የተመረጡ ጤና ጣቢያዎች ውስጥ ማጥናት ነዉ።

ቅደም ተከተል፡-የስምምነት ወረቀቱን ከፈረሙ በኃላ መረጃ ሰብሳቢዉ አግባብ ያላቸዉን ጥያቄ፤ የተዋቀረ መጠይቅ በመጠቀም ፊት ለፊት ይጠይቆታል ምላሽዎንም በቃለ መጠይቁ ላይ ያሰፍራል፡፡ቃለ መጠይቁ 30-45 ደቂቃ ይወስዳል፡፡

ለተጠያቂው የሚሰጠው ጥቅም፡-ለተጠያቂው ቀጥተኛ ጥቅም ላይኖረው ይችላል፡፡ነገር ግን ጥናቱ ከተካሄደ በኃላ የጥናቱ ውጤት የተሳታፊዎቹን የማህፀን ጫፍ ካንሰር ምርመራ ግንዛቢያቹን ለማወቅ ይረዳል፡፡ይህም ህግ አዉጪዎች እና የተለያዩ በማህፀን ጫፍ ካንሰር ላይ የሚሰሩ ግብረ ሰናይ ድርጅቶች የማህጸን ጫፍ ካንሰር ወረርሽኝን ለመከላከል እርምጃ እንዲወስዱ ይረዳል፡፡ለሰጡት መረጃ ምንም አይነት የገንዘብ ክፍያ አይከፈሎትም ነገር ግን ማንኛዉም የጥናቱ ተሳታፊ ከማህጸን ጫፍ ካንሰር ምርመራ ጋር ተያይዞ ላለዉ ጥያቄ ትምህርት ይሰጣል፡፡የጥናቱ ዉጤት ለሚመለከተዉ ክፍል የአዲስ አበባ ጤና ቢሮ ጨምሮ ይሰራጫል፡፡

ጥናቱ ሊያስከትል የሚችለዉ ጉዳት፡-በጥናቱ ላይ መሳተፍ ምንም አይነት ጉዳት አያስከትልም፡፡ ነገር ግን ጥያቄዎችን ሲመልሱ ሰዓቶትን ልንወስድ እንችላለን፡፡

የተጠያቂው መብቶች

የእርሶ ተሳትፎ ፈፅሞ በፍላጎት ላይ የተመሰረተ ነዉ፡፡አንድ ተሳታፊ ጥናቱ ላይ መሳተፍም ያለመሳተፍም ይችላል፡፡ጥናቱ ላይ መሳተፍ ባይፈልጉ ምንም አይነት ጥቅም አይከለከሉም፡፡ማንኛዉም ያልተረዱት ጥያቄ ካለ መረጃ ሰብሳቢዉን መጠየቅ ይችላሉ፡፡

ምስጢራዊነት፡-ሁለም መረጃ ምስጢራዊነቱ የተጠበቀ ሲሆን የእርሶ ስም ባለ መፃፍ ምስጢራዊነቱን ለመመጠበቅ የምስጢር ቁጥር የምንጠቀም ይሆናል፡፡

በዚህ ጥናት ላይ ለመሳተፍ ፍቃደኛ ነዎት

1.አይደለሁም (አመሰግናለሁ በል)

2.አዎ

ስምምነት

ከላይ የጥናቱ አላማ፣ ጥቅሙ፣ ጉዳቱ፣ እንዲሁም ሚስጥራዊነቱ በሚገባኝ እና በምረዳዉ ቋንቋ ተገልጾልኛል፡፡በተጨማሪም በጥናቱ ላይ ለመሳተፍ ብስማማም እንኳን ምንም አይነት ማብራሪያ መስጠት ሳያስፈልገኝ በፈለኩት ጊዜ አቋርጬ መሄድ እችላለሁ፡፡ በዚህ ጥናት ላይ ተሳትፎዬ ፈፅሞ በፍላጎት ላይ የተመሰረተ ነዉ፡፡

በዚህ ጥናት ላይ ለመሳተፍ ተስማምቻለሁ፡፡

ፊርማ_____ቀን_____(ተሳታፊ)

ፊርማ_____ቀን_____(መረጃ ሰብሳቢ)

ፊርማ_____ቀን_____ (ጥናት አድራጊ)

ለሚኖርዎት ጥያቄ የሚጠቀሙት አድራሻ እና የጥናትአድራጊዋ መረጃ

የጥናት አድራጊዋ ስም፡ ጥሩናህ አራርስ

ስልክ ቁጥር 0911 96 34 20

ኢ-ሜይሌ፡ Tiruneh.ararsa@gmaail.com

የጠያቂው ስም እና ፊርማ._____

የተጠየቀበት ቀን (በኢትዮጵያ አቆጣጠር) -------/----------/----------

የጥናቱውጤት 1. ተጠናቋል 2. መጠየቅ አልፈለጉም 3. በከፊል የተጠናቀቀ

በሱፐርቫይዘር ተረጋግጧል ስም ----------ፊርማ---------- ቀን_____

የጥናቱ ተሳታፊዎች የጥናት መለያና ስነህዝባዊ መረጃ

ተ.ቁ	መጠይቅ	መልስ	ዝለል
101	አድራሻዎ የት ነዉ ?	አዲስአበባ.....1 ከአዲስ አበባ ውጪ.....2	
102	እድሜዎ ስንት ነው?(ለመጨረሻ ጊዜ ያከበሩት ስንተኛ የልደት በዓልዎን ነው?)	_____ዓመት	
103	የሚከተሉት ሃይማኖት ምንድን ነው?	ኦርቶዶክስ.....1 ፕሮቴስታንት.....2 ካቶሊክ.....3 ሙስሊም.....4 ሌላ ከሆነ.....5	

		ይጥቀሱ.....98	
104.	የትምህርት ደረጃዎን ይንገሩኝ;	ደረጃ. ሁላት.....1 ደረጃ ሶስት.....2 ደረጃ አራት.....3 ያማጃማርያ ድግር.....4 ማስታርስ ድግር.....5	
105	የእርስዎ የስራ ልምድ ስንት ናዉ ነዉ?	ካአምስት ዓማት ብተች.....1 5_10 ዓማት.....2 10ᴗ20ዓማት .....3 20 ዓማት ባላይ.....4	
106	የጋብቻ ሁኔታዎ እንዴት ነው?	ያላገባች.....1 ያገባች.....2 የፈታች.....3 ባሏ የሞተባት.....4 የተለያየች.....5	ያላገባች ከሆነ ወደ ጥያቄ ቁጥር 110 ዝለል
107	ያዋር ጋብዎት ስንት ንው	_____	
108	ስንት ልጅ ወልደዋል?	_____	
109	መጀመሪያ የግብረ ስጋ ግንኙነት ሲፈፅሙ እድሜዎት ስንት ነበር?	_____	
110	መጀመሪያ ሲያገቡ እድሜዎት ስንት ነበር?	_____	
111	በቤተሰብዎ ዉስጥ የማህፀን ጫፍ ካንሰር የነበረበት ሰዉ አለ?	አዎ.....1 የለም.....2	
112	ያአባላዘር ባሽታን ምርማራ አድርጎ ያቃሉ	አዎ.....1 የለም.....2	
113	ለኤች አይ ቪ / ኤድስ ምርመራ አድርጎ ያቃሉ?	አዎ.....1 የለም.....2	

I. በማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ጤናአከስተንሽን ባላሞያዎችን ላቸውን ግንዛበየቹን ላማወቅ የተዘጋጀ መጠይቅ

ተ.ቁ	መጠይቅ	መልስ	ዝለል
201	ከዚህ በፊት ስለ ማህፀን ጫፍ ካንሰር በሽታ ሰምተው ያውቃሉ?	አዎ……...…..……1 አላዉቅም……..…...……....2	አላዉቅም ካሉ ወደ ጥያቄ ቁጥር 205
202	ለመጀመሪያ ግዜ ስለ ማህፀን ጫፍ ካንሰር በሽታ ከየት ሰሙ?	ከመገናኛ ብዙሐን……...…...……1 ከጤና ባለሙያ……..……...……2 ከአስተማሪ(መምህር)……..……..……3 ከዘመድ……..……...……4 ከጓደኞቼ……..……5	

		ከሐይማኖት ተቋም……...……...…6 ሌላ ካለ ይጥቀሱ.....98	
203	እርሰዎ የሚያውቋቸው ለማህጸን ጫፍ ካንሰር ሊያጋልጡ የሚችሉ ሁኔታዎችን ይጥቀሱልን(ብዙ አማራጮች አሉ፣ ከአንድ መልስ በላይ መመለስ ይቻላል)	ከተለያዩ ወንዶች ጋር ፆታዊ ግኙኝነት መፈፀም…….I እድሜ ሳይደርስ ፆታዊ ግኙኝነት መፈፀም……..2 በቤተሰብ የበሽታ ታሪክ ካለ……..3 ሁማን ፓፒሎማ በሚባል ቫይረስ መያዝ.....4 ሲጋራ ማጨስ……5 የበሽታ መከላከል አቅም መዳከም በኤች አይ ቪ ኤድስ ምክንያት ……6 አላዉቅም……..…….99 ሌሎች ካሉ ይጠቀሱ…….…….....…….98	
204	እርሰዎ የሚያውቋቸው የማህጸን ጫፍ ካንሰር ምልክቶች ካሉ ይጥቀሱልን(ብዙ አማራጮች አሉ፣ ከአንድ መልስ በላይ መመለስ ይቻላል)	በማህፀን ደም መፍሰስ……..I ሽታ ያለዉ የማህጸን ፈሳሽ……2 የወገብ ወይም የዳሌ አከባቢ ህመም……3 የህመም ስሜት ከግብረ ስጋ ግኙኝነት በኃላ……...…..4 አላዉቅም……...……99 ሌሎች ካሉ ይጠቀሱ…….....……98	
205	ለማህጸን ጫፍ ካንሰር ተጋላጭ የትኞቹ የሴት ክፍል ናቸዉ ብለዉ ያስባሉ?	ሁሉም ሴቶች……...…..……I ያገቡ ሴቶች……...…..……2 በደማቸዉ ውስጥ ኤች አይ ቪ ቫይረስ ያለባቸዉ ሴቶች.....3 አላዉቅም……...……99 ሌላ ካለ ይጥቀሱ.....98	
206	የማህጸን ጫፍ ካንሰር ሊከላከሉት የሚችሉት በሽታ ነዉ ብለዉ ያስባሉ?	አዎ……I አይደለም…….……2 አላዉቅም……...……99	
207	ከዚህ በፊት ስለ ማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ዘዴዎች ሰምተው ያውቃሉ? (በደንብ ይጠየቅ)	አዎ……I አላዉቅም……..……2	አላዉቅም ካሉ ወደ ጥያቄ ቁጥር 209
208	አዎን ካሉ የትኞችን የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ዘዴዎች ያውቃሉ? (ብዙ አማራጮች አሉ፣ ከአንድ መልስ በላይ መመለስ ይቻላል)	ፓፕ እስሚር(ከማህጸን ጫፍ ተቆንጥሮ የሚሰራ ምርመራ ……...……I ቪ አይ ኤ……...……2 የሁማን ፓፒሎማ ቫይረስ ምርመራ…….....3 ሌላ ካለ ይጠቀሱ……..……98	
209	የማኅጸን በር ካንሰር ምርመራ (CCS) አገልግሎት በጤና ማእከልዎ ይገኛል?	አዎ……..……I አይደለም…….2	
210	ለመጀመሪያ ግዜ ስለ ማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ዘዴዎች ከየት ሰሙ?	ከመገናኛ ብዙሐን……...……I ከጤና ባለሙያ……...……2 ከአስተማሪ(መምህር)……...……3 ከዘመድ……...……4 ከጓደኞቼ……...……5 ከሐይማኖት ተቋም……..6	

21ı	የማህፀን ጫፍ ካንሰርን ለመከላከል እና ቀድሞ ለማወቅ የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ በጣም አስፈላጊ ነው ብለዉ ያስባሉ?	አዎ……..……1 አይደለም…….……2 አላዉቅም……...……99	
212	የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ዘዴ የበሽታዉ ምልክቶች ከመከሰታቸዉ በፊት የማህፀን ጫፍ ካንሰር መኖሩን ወይም ያለመኖሩን ለማወቅ ይረዳል ብለዉ ያስባሉ?	አዎ……..……1 አይደለም……2 አላዉቅም……...……99	
213	አንድ ሰዉ የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ በየስንት ጊዜዉ ማድረግ አለበት ብለው ያስባሉ?	በዓመት አንድ ግዜ……...……1 በሶስት ዓመት አንድ ግዜ……...……2 በአምስት ዓመት አንድ ግዜ……...…….3 አላዉቅም……...……99	
214	አንዲት ሴት የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ማድረግ ያለባት መቼ ነዉ ብለዉ ያስባሉ?	የወር አበባ ማየት ስትጀምር……...1 የግብረ ስጋ ግኑኝነት ከጀመረች በኃላ…….……...…2 30 ዓመት ሲሆናት……..3 ልጅ ከወለደች በኃላ……..……4 የወር አበባ ማየት ስታቆም ወይም ከአረጠች በኃላ..…..5 አላዉቅም……...……99 ሌላ ካለ ይጠቀስ……98	
215	የማህጸን ጫፍ ካንሰርን ቶሎ ከታወቀ ሊድን ወይም ሊታከም ይችላል ብለዉ ያስባሉ?	አዎ……..……1 አይችልም……...……..2 አላዉቅም……..……99	
216	የማህጸን ጫፍ ካንሰር ሊታከም የሚችለዉ መቼ ነዉ ብለዉ ያስባሉ?	በሽታዉ የጀመረ አከባቢ……..1 በሽታዉ ከጀመረ ዘግይቶ……..2 አላዉቅም……..……99	

217	እርሰዎ የሚያውቋቸው የማህፀን ጫፍ ካንሰር ህክምና ካለ ይጥቀሱ(ብዙ አማራጮች አሉት፣ ከአንድ መልስ በላይ መመለስ ይቻላል)	የባህል ህክምና……...……1 ቀዶ ጥገና……..……2 የጨረር ህክምና……..……3 ኬሞቴራፒ……....……4 ክራዮቴራፒ……..……5 አላዉቅም……...……99 ሌላ ካለ ይጥቀሱ……...98	
217	የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ጥቅም ምንድናዉ?	ባሽታዉን ላማስቆም……..……..1 ባሽታዉን ቶሎ ላማታከም……..……2 ባሽታዉን ቶሎ ላማርማር……..…3 ባባሽታ ምክናት ጥንስ ውርጃውን ላማቃናስ ያግዛል ……..4 አላዉቅም……..……99	
219	ባባሃላቹ የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ይፋቃዳልን?	አዎ……..……1 አይችልም……..…...……..2 አላዉቅም……..……99	
220	ዕድሜያቸዉ ላማዉላድ ያዳራሱ ሴቶች የማህፀን ጫፍ ካንሰር ቅድመ ምርመራ ማድረግ አስፈላጊ ነው ብለው ያምናሉን?	አዎ……..……1 አይችልም……..…...……..2 አላዉቅም……..……99	

ክፍል 3: ለጤና ኤክስቴንሽን ሠራተኞች የማኅጸን በር ካንሰር ምርመራ ትክክለኛ አመለካትዎ ምን እንዳሆና ላማዋቅ ንው።ሉ

No	Items	በጣም አልስማማዉም	አልስማማዉም	እርግጠኛ አይደላዉም	እስማማለሁኝ	በጣም እስማማላዉኝ
301	በሽታውን የመያዝ እድልን አላ ብሎ ያምናሉን?					
302	የማኅጸን በር ካንሰር ምርመራ (CCS) የሚከናወነው ምልክት በሚኖርበት ጊዜ ብቻ ነው?					
303	ምንም እንኳን የግብረ ሥጋ ግንኙነት ባይፈጽሙም የማኅጸን በር ካንሰር ምርመራ (CCS) ማድረጉ አስፈላጊ ነውን?					

304	የማጎጸን በር ካንሰር ከሌላው በሽታ የበለጠ ከባድ ነውን?					
305	የማጎጸን ካንሰር ምርመራው ህመም ነው ብለው ያምናሉ?					
306	የማጎጸን በር ካንሰር ምርመራ መሃንነት ያስከትላል ብለው ያምናሉን?					

APPROVAL BY THE BOARD OF EXAMINATION

This thesis by **Tiruneh Ararsa** is accepted in its present form by the board of examiners as satisfy in thesis requirement for the masters in clinical oncology nursing. On a title of "knowledge towards cervical cancer screening and factors associated" among urban female health extension workers at health centers in Addis Ababa, Ethiopia.

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STATEMENT OF DECLARATION

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