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Cervical Cancer Screening Practice and Associated factors Among Female Health Service Providers in Bahir Dar City Administration, North West Ethiopia

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COLLEGE OF MEDICINE AND HEALTH SCIENCES



**CERVICAL CANCER SCREENING PRACTICE AND
ASSOCIATED FACTORS AMONG FEMALE HEALTH SERVICE
PROVIDERS IN BAHIR DAR CITY ADMINISTRATION, NORTH
WEST ETHIOPIA**

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**A THESIS SUBMITTED TO SCHOOL OF PUBLIC HEALTH
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BAHIR DAR, ETHIOPIA

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HEALTH SCIENCES SCHOOL OF PUBLIC HEALTH**

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ABSTRACT

Background: Cervical cancer is a malignant neoplasm from cells originating in the cervix. Cervical cancer screening is one of secondary prevention mechanism. According to the WHO report in developing countries screening coverage is still low ranging from 2.0% to 20.2% in urban areas and 0.4% to 14.0% in rural areas. Low screening coverage in our country cause most patients to present to hospital with advanced disease.

Objective: To assess cervical cancer screening practice and associated factors among female health service providers in Bahir Dar city administration between September to October 2018.

Methods: A cross-sectional study was conducted among 388 participants. Stratified and simple random sampling proportionate to size allocation technique was used. Data were collected using a self-administered structured questionnaire. Data were entered in to EPI-INFO version 3.5.4 and analyzed using SPSS version 23 software. By using descriptive statistic proportion of screened for cervical cancer was determined. Binary logistic regression analysis with a cutoff p- value ≤ 0.2 was used for variables to be entered into multivariable logistic regression analysis. Adjusted odds ratios with 95% CI were used to identify independent predictors of cervical cancer screening practice. Independent variables that had a p-value less than 0.05 in multivariable logistic regression analysis were taken as statistically significant factors for cervical cancer screening practice.

Results: The mean age (\pm SD) of the study participants was 34.48 (\pm 4.15 year) with the minimum and maximum age range of 27 and 58 years respectively, 223 (57.5%) were degree holder, 339 (87.4%) were married and 229 (59%) were nurses. Practice of cervical cancer screening was found to be 17.3 % (95% CI: 13% to 21%). Age ≥ 35 (AOR:2.89;95% CI:1.37-,6.10), working in screening center (AOR:0.26;95% CI:0.14-0.51), age at first sexual contact<18 year (AOR:0.41;95% CI:0.20-0.87) and use of contraceptive (AOR: 0.37;95% CI:0.18-0.76) were found to be significant factors for cervical cancer screening at p-value less than 0.05.

Conclusion: Cervical cancer screening practice among female health service providers was found low and significantly associated with age, working screening center, use of contraceptive and age at first sexual contact before18 years.

Keywords: cervical, cancer, screening, practice, female health service providers, Bahir Dar city, Ethiopia

Acronyms and Abbreviations

AIDS: ----- Acquired Immuno Deficiency Syndrome

AOR: ----- Adjusted Odds Ratio

CI: ----- Confidence Interval

CIN: ----- Cervical Intraepithelial Neoplasia

COR: ----- Crude Odds Ratio

DNA: ----- Deoxy Ribose Nucleic Acid

GC: ----- Gregorian calendar

HPV: ----- Human Papilloma Virus

IARC: ----- International Agency for Research on Cancer

PAP: ----- Papa Nicola

PI: ----- Principal Investigator

SD: ----- Standard Deviation

SPSS: ----- Statistical Package for Social Science

STI: ----- Sexually Transmitted Infection

VIAA: ----- Visual Inspection of Acetic Acid

VILIS: ----- Visual Inspection with Lingo's Iodine Solution

WHO: ----- World Health Organization

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1. Introduction

1.1. Background

Cancer originates from a single cell however its transformation into tumor cell is progressive. Cervical cancer is a malignant neoplasm from cells arising in the cervix. Cervix is the lower part of the uterus (womb) that connects the body of the uterus to the vagina (birth canal). This is sometimes called the uterine cervix (1).

Human Papilloma virus (HPV) has been recognized as the main cause (Etiology) of cervical cancer which accounts 70% by several studies (2). The World Health Organization (WHO) promotes a comprehensive approach to cervical cancer prevention and control to identify opportunities to deliver effective interventions. Cervical cancer-related research has increased meaningfully over the past decade, representing biomedical, behavioral and policy level finding (3).

HPV is mainly sexually transmitted can also through direct skin to skin contact of the genital areas (4). Even though cervical cancer can be fully treated through screening; the trend of new cases is being increased year to year and the service is scarcely utilized. In developed countries, the achievement of screening coverage was more than 80% (5). In Ethiopia the coverage of screening is 0.8% at national level and 0.4% in the rural area of women age of 25-64 years (6).

Cervical cancer screening has an advantage to reduce the incidence, the progression of advanced stage of cancer as well as its mortality. Screening discloses abnormal change of cervical cells and this change is detectable 5-20 years prior to cervical cancer (7). The methods which used for screening are Pap smear, Visual Inspection of Acetic Acid (VIAA), Visual Inspection with Ligon's Iodine Solution (VIILS), biopsy, pap smear and HPV DNA test, but VIAA followed by treatment is an effective method, relatively simple procedure and feasible in resource limited areas (8).

Cervical cancer screening coverage is a big issue to prevent and control of cervical cancer in developing countries and the reason not to be screening for cervical cancer were found to be fear of procedure, fear of the outcome, low awareness of services, embarrassment, privacy concerns, societal stigma, cost and health service systems, accessibility, time and health provider attitude towards the service (9).

A lot of review papers synthesize knowledge and improvements for multiple areas of focus within the larger effort of cervical cancer prevention and treatment such as, biomarkers for cervical cancer, HPV

vaccination for young adolescent women and practicable approaches to screen and treat adult women in low resource settings (10).

When to initiate screening: Since cervical cancer is uncommon before the age of 30, WHO recommends screening to start from 30 years and above. For high risk groups like HIV infected women, screening can be done earlier starting from 21 at least once every three-five year interval and above. It is also indicated that, in low resource areas screening every 10 years or just at least once in her life time between the ages of 35-45 markedly reduce cervical cancer mortality. The objective of screening programs therefore, better to focus on coverage of high risk women rather than on frequency (11).

1.2. Statement of the problem

Cervical cancer is a type of cancer that can be preventable and treatable through early screening. It is also global public health problem with higher impact in developing countries (12). It is the second most commonly diagnose and leading causes of death among child bearing women in the world and more than 85% of cases and deaths are found in less developed countries (13)

Worldwide, cervical cancer is responsible to kill 275,000 women every year. It is also the second largest cancer case and death in low and middle-income countries; Project estimate that half a million women will die of cervical cancer by 2030 (14).

Non-communicable diseases in over-all and cervical cancer in particular are becoming a double burden for Ethiopia. Though national survey is not currently available in Ethiopia, the International Agency for Research on Cancer (IARC) projected that cancer is the second greatest cause of mortality and morbidity yearly in 2012 (15) .

According to the 2009 WHO report, the age-adjusted incidence rate of cervical cancer in Ethiopia is 35.9 per 100,000 patients and 7619 of new cases and 6081 deaths annually in the country. However, these statistics are considered as an underestimation of the actual number of cases due to lack of adequate diagnostic and reporting tools (16).

Currently, in Ethiopia the proportion of cervical cancer is different across regions cervical cancer patients in Addis Ababa, Oromiya and Amhara are (32.98%, 30.11% & 19.72%) respectively the higher proportion whereas cervical cancer in, Gambella, Afar and Benshangul regions are the least proportion of cervical cancer patients in the last sixteen years based on the evidence from ‘Tikur Anbesa’ Specialized Hospital (12) .

Studies have revealed that nearly 22 million Ethiopian women over the age of 15, around 7,600 are diagnosed with cervical cancer and roughly 6,000 women die of the disease each year. In spite of the fact that, very few women obtain screening services in Ethiopia (17).

Most patients in developing countries including Ethiopia present late with progressive stage disease in which treatment may often encompass multiple approach including surgery, radiotherapy, chemotherapy, and has a significantly reduced chance of cure (18) .

According to WHO study Screening has shown as effectively reduce the incidence of this malignancy in developed countries but in developing countries screening coverage is still low reaching from 2.0%

to 20.2% in urban areas and 0.4% to 14.0% in rural areas. Low screening coverage in our country cause most patients to attend hospital with progressive disease (19).

In the active role of health service providers to prevent cervical cancer, there are many obstacles faced by health service providers to encourage cervical cancer screening such as lack of information about screening intervals , HPV vaccine , poor access diagnosis and treatment center for cervical cancer (20).

Hence, as far as the knowledge of the researcher it is not well known about the practice of cervical cancer screening among female health service providers, in Amhara region, as I have searched there is a research gap studied on comprehensive approach including most profession.

Cervical cancer screening rates are still far from satisfactory in our country. Identifying factors of cervical cancer screening practice in female health service providers is important to increase overall screening practice. In order to advance preventive practice for cervical cancer, health service providers should be knowledgeable and improve their personal conformity.

Cervical cancer screening is an entry point for early detection and treatment of precancerous and cancerous of the cervix, it will give information about the strategy how to address the other groups. The finding will also assist health policy makers and project managers to enhance screening program that helps as an input for evidence based decision making.

1.3. Significance of the study

The study examined cervical cancer screening practice and factors among female health service providers in Bahir Dar city administration.

Thus, the findings of this study will help in decision making on how to improve the uptake of cervical cancer screening services in Bahir Dar City as well as in Amhara Region among health service providers.

Identifying the associated factors of utilization of cervical cancer screening in female health service providers is important to increase overall screening rates. This study suggested focusing on public health Practitioners has a potential to improve the uptake of cervical cancer screening in the community

The result of the study will also contribute to the development of programs informing women of reproductive age to identifying risk factors for cervical cancer and uptake screening service with simple and cost effective method. Hoping that the findings the study can be used as a primer for similar studies to the researcher, and will enable the Health bureau to plan improve cervical cancer screening program in Amahra region.

2. Literature review

2.1. Screening practice

Globally there is great problem related with cervical cancer screening practice among the general population as well as health service providers in different literature.

In Rural India Practices among nurses from 262 participants only 17 (7%) of the staff nurses had been screened by Pap smear (21). Only 20(18.4%) from 107 participants of the female health care providers have ever experienced cervical cancer screening a cross-sectional study Chennai corporation, India (22). In addition among Nurses in North Eastern India shows only 26 (11.6%) had Pap smear at least once formerly from 221 (23).

Most nurses and physicians (76.9% and 68.7%, respectively) said that national guidelines for cervical cancer screening are very important for their health unit, a total of 5.2% of nurses reported performing cervical cancer screening, which was lower than the percentage of physicians (17.9%) in Brazil (24) .

Similar study India, Bangalore, It was observed that 114 (73.6%) of the study subjects had never had a Pap test and only 41 (26.4%) had ever practiced Pap test in their life time. Higher proportion of doctors 30 (52.6%) had ever got their pap test relative to 11 (11.2%) of the nurses (25).

Similar study found in Nigeria, in Ahmadu Bello Zaria shows their screening practice, in spite of the good awareness level, 97 (85.0%) had never been screened for cervical cancer before; only 17 (15.0%) reported ever being screened, of these, 7(41.3%) had it done once while 10(58.7%) (26).

Among female health workers in Rivers State Nigeria though all participants had aware of pap smear availability but only (17.7%) of them had used it, and repeat tests were only observed among respondents that screened as routine (27) .With similar study done in Qatar among health care workers 42.2% had cervical cancer screening practice (28).

Research in Turkey in agreement with other studies; it was found that the rate of having Pap smear test is 23.5% in low knowledge and insufficient practice conducted in nurse and doctors (29). cervical cancer and screening practices among staff of a teaching hospital in South-South Nigeria who had ever screened for Cancer cervix, 18 (11%) (30).

In South-West Nigeria among the total of 85 female doctors were surveyed more than half of the respondents (57.6%) reported repetitive medical checks and 54.2% of the respondents had screened

two years (31). Also studies shows the health care workers in Maiduguri, Nigeria 34 (23.3%) had screened for cervical cancer (32).

A total number of 587 midwives and nurses were present at selected hospitals in Rwanda during the study period only 32.9% of female respondents had ever been screened for cervical cancer (33).

Female health workers in Arba Minch town and Zuria district, Gamo Gofa Zone, 281 of the respondents were correctly answer the questionnaire of the total respondents, only 27 (9.6%) have had cervical screening within the past three years (9). Congruent study female health care workers in southern Ethiopia in this study, only 42 (11.4%) of the respondents were screened for cervical cancer from 319 respondents (34).

Another study in Addis Ababa Ethiopia among the 217 female health care providers surveyed with only 17% reporting ever having been screened for cervical cancer (35). In Marie Stops International Ethiopia showed around 190 health professionals in particular clinics cross sectional study indicates that 66(34.9%) of them were screened for cervical cancer (36).

A study conducted in Mekelle town, Northern Ethiopia, 2014 a total of 225 female nurses joined in the study the degree of cervical cancer screening practice among these nurses were 24 (10.7%), within the past five years of the study (37).

2.2. Factors affecting cervical cancer screening practice

I. Socio- demographic and economic factors

There were significant relationships between age and screening for cervical cancer in Rural India (21), South-West Nigeria (31). Maiduguri, Nigeria from 150 respondent's age was significantly associated with screening practice (32) and in Legos, Nigeria (38).

In Zaria, Nigeria they stated various factors that stopped them from being screened. They comprise fear of being stigmatized, exposure of isolated parts to male doctors, fear of hurt from poor instrument/experts were factors associated pap smear (26)

A study conducted in southern Ethiopia profession had significantly associated with cervical cancer screening, being a physician had a lower odds ratio (AOR =0.12, 95% CI: 0.02, 0.79) (34).

II. Knowledge

Knowledge about cervical cancer, studied on Nurses in India, related with multiple sexual partners, human Papilloma Virus infection and heredity were factors associated for pap tests (39).

Similar studies in Qatar among female health providers knowledge on risk factors screening eligibility, regarding (etiological factors, multiple sexual partner, HPV, and family history), factors to screening test (28).

In Ethiopia that conducted in Tikur Anbesa Specialized Hospital, Knowledge of the major risk factors for cervical cancer were factors associated with screening practice (35).

In Southern Ethiopia Arba Minch knowledge of cervical cancer was significantly associated factors for utilization of cervical cancer screening (AOR 1.78, 95% CI: 1.05-3.02) (9).

III. Reproductive factors

A study conducted in Turkey the average age of menopause was found to be factors associated to cervical cancer screening uptake (29).

In Rural India teaching institution using some methods of contraception and Intra Uterine Device being used equally were factors to screening for cervical cancer (21).

Similar study in Southern Ethiopia working cervical cancer screening center had lower odds (AOR = 0.14, 95% CI: 0.03, 0.68) for cervical cancer screening practice (34).

3. Conceptual frame work

An illustration how internal and external factors directly and/or indirectly affect cervical cancer screening practice among female health service providers developed after reviewing literatures (34).

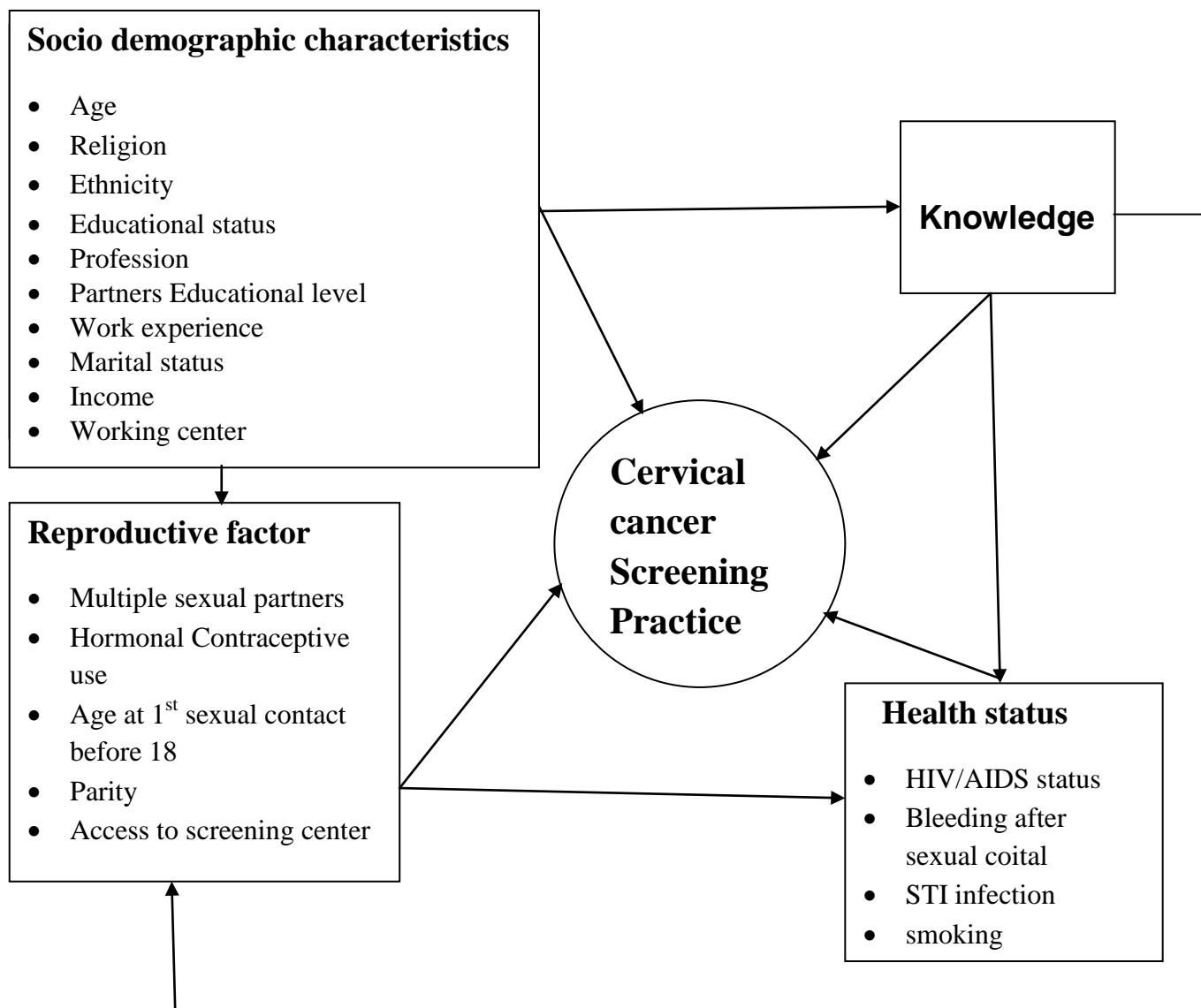


Figure 1: Conceptual frame work, among female health service providers in Bahir Dar city Administration, North West Ethiopia (Adapted from reviewing different literatures).

4. Objectives

4.1. General Objective

- To assess cervical cancer screening practice and associated factors among female health service providers in Bahir Dar City Administration.

4.2. Specific Objectives

- To determine cervical cancer screening practice among female health service providers in Bahir Dar city administration.
- To identify factors associated with cervical cancer screening practice among female health service providers in Bahir Dar city administration.

5. Study method

5.1. Study design

A cross sectional study was conducted to assess cervical cancer screening practice and associated factors among female health service providers in Bahir Dar city administration in 2018.

5.2. Study area and period

The study was conducted in Bahir Dar city, North West Ethiopia, Bahir Dar the capital city of Amhara National Regional State which is located at 565 kilometers, in the North West direction of Addis Ababa, capital city of Ethiopia. It is situated on southern shore of Lake Tana with an elevation of 1801 meters above sea level. Based on the 2007 national census estimation, the total estimated population in Bahir Dar city is 304,007 (male: 150,484 and female: 153,523). There are 9 sub cities.

In Bahir Dar city administration currently (2018) there are about, two governmental hospital one primary and one referral hospital, ten governmental health centers, two private hospitals, two higher private, thirty specialty and nine medium clinics, there are about 56 health institution and 826 female health service providers (General Practitioner, Health officer, Nurse, Laboratory, Pharmacy, Midwives and community health extension workers), and currently three non-governmental organization clinics two hospitals and three health centers provide cervical cancer screening service and the health service coverage in accessibility is 100%. (Bahir Dar city administration health department)

The study was conducted September to October 2018 in Bahir Dar City Administration.

5.3. Source populations

All female health service providers working in health institutions at Bahir Dar city administration.

5.4. Study population

Selected female health service providers; medical doctor, health officers, nurses, midwives, laboratory, pharmacy and health extension workers currently work in health institutions.

5. Inclusion and exclusion criteria

5.5.1. Inclusion criteria

- ✓ The selected female health service providers who are working at least 6 month on the current institution in the study period.

5.5.2. Exclusion criteria

- ✓ Female health service providers who are seriously ill not able to response and who are on annual leave.

5.6. Sample size determination

The sample size is calculated by using single population proportion formula

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

Where; n = Sample size

$Z_{\alpha/2}$ = level of significance 1.96 (for 95% confidence level)

P = proportion of cervical cancer screening practice 34.9 from previous study (36).

d = Precision or margin of error (0.05)

$$n = \frac{(1.96)^2 * 0.349(1-0.349)}{(0.05)^2} = 356$$

The total sample size including non-respondent rate 10% were 392.

Table 1: sample size determination by factors among female health service providers in Bahir Dar city administration, North West Ethiopia 2018.

Factors	Assumption	Sample size	References
Screening practice	Proportion cervical cancer screening 34.9	356	(36)
Profession	P1= 38.8 P2=61.2 AOR=0.12 CI=95% Power= 80% $\alpha=5\%$ design effect=(no) non response rate= 5%	377	(34)
Working in screening center	P1=10.1 P2= 89.8 AOR= 0.14 CI=95% Power= 80% $\alpha=5\%$ design effect=(no) non response rate= 5%	54	(34)
Knowledge	P1=83.3 p2=16.7 AOR=1.78	6	(9)

Therefore the larger sample size was 392.

5.7. Sampling technique and procedure

Stratified sampling technique was used to consider various professional category. The sample size was proportionally allocated to each profession category. Then simple random sampling/lottery method/ was employed to select each study participants.

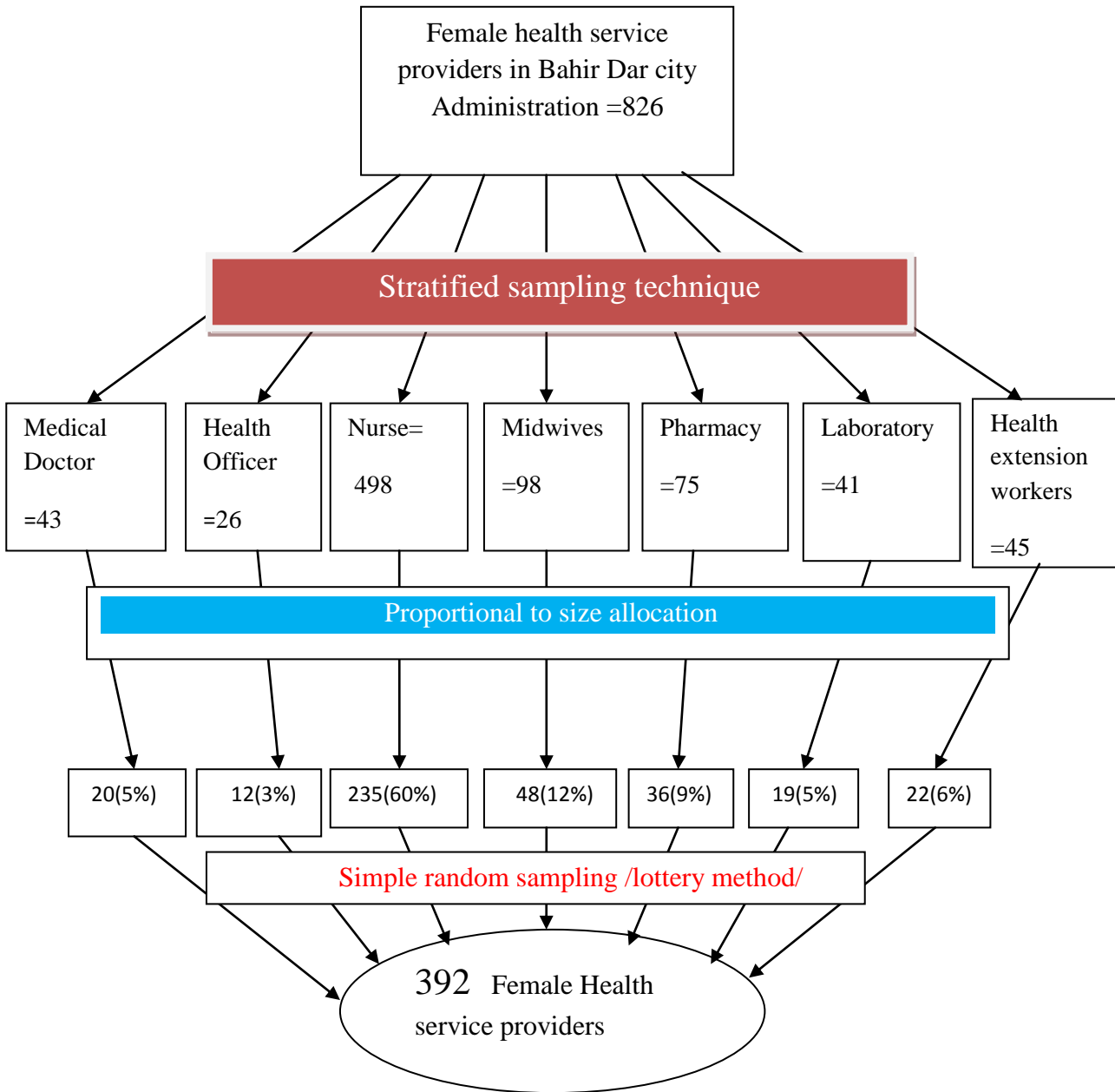


Figure 2:- schematic presentation of sampling procedure among female health service providers in Bahir Dar City administration, North West Ethiopia 2018.

5.8. Variables of the study

Dependent variable

- ✓ Cervical cancer screening practice

Independent variables

Socio-demographic and economic variables

- ✓ Age
- ✓ Religion
- ✓ Ethnicity
- ✓ Educational level
- ✓ Partners education
- ✓ Work experience
- ✓ profession
- ✓ Marital status
- ✓ Income
- ✓ Working place

Reproductive variables

- ✓ Multiple sexual partner
- ✓ Contraceptives use
- ✓ Age at 1st sexual contact <18
- ✓ Parity
- ✓ Access to screening facility

Health status variables

- ✓ HIV/AIDS status
- ✓ Bleeding after sexual coital
- ✓ STI infection
- ✓ Smoking

Knowledge

5.9. Operational Definition

Health services provider: who is working in the health institutions with involvement of disease prevention, diagnosis, care, treatment, and rehabilitation activity.

Cervical cancer screening: an activity of knowing the health status of cervix by using different screening methods.

Cervical cancer screening practice: examines the cervix at least once in her life time.

Knowledgeable: A mean score of above (≥ 8) to these questions was considered as a good level of knowledge by using descriptive statistics, of the (12) knowledge regarding questions causative agent, risk factors, symptoms, screening method and route of transmission of the causative agent of cervical cancer.

Not knowledgeable: the respondent scored below mean (< 8) score questions.

Reproductive Health: Health of a woman including the organ from external to internal anatomical structures, process and functions.

Multiple sexual partners: having more than one sexual partner.

5.10. Data collection tool and procedure

A pretested and structured self-administered questionnaire was used for data collection. The questionnaire was designed to obtain information on socio demographic characteristics of respondents, reproductive factors, health condition and related variables. Different relevant literature were reviewed to develop the questionnaire (health status and knowledge questioner were reviewed).

The questionnaire was prepared first in English and translated to Amharic and then translated back to English, to ensure its consistency or distortions of words or concepts. Six female trained and experienced data collectors who had diploma in clinical nursing participated in data collection. Two supervisors who had BSC nursing were daily supervised the data collectors and give feedback during data collection.

5.11. Data management and analysis

The collected questionnaire were checked manually for its completeness, coded, and entered into Epi-Info version 3.5.4 statistical package, then exported to SPSS version 23.0 for further analysis.

Descriptive and summary statistics were done. Candidate variables which had a p-value less than 0.2 in bivariate logistic regression were further entered in to multivariate logistic regression model to control confounding effect. Adjusted odd ratios with 95% were calculated to identify the independent predictors of cervical cancer screening. Independent variables that had a p-value less than 0.05 in multivariate logistic regression analysis were taken as statistically significant factors for cervical cancer screening practice.

5.12. Data quality control

The quality of data was maintained by training of the data collectors and supervisors. After the training, the questionnaire was pretested on 5% of health service providers in Merawi Primary hospital, which is not included in the study area, to ensure clarity, completeness and the time needed to fill the questionnaire before the actual data collection.

Daily information exchange by face to face were to be a means to correct problems during the course of the data collection. Furthermore, supervisors and the principal investigator daily checked the collected data carefully for its completeness, accuracy and consistency.

5.13. Ethical consideration

Ethical clearance was obtained from the Ethical Review Board of Bahir Dar University, College of Medicine and Health Sciences, School of Public Health. Communication was made with Bahir-dar city administration health Department through supporting letter obtained from Amhara Public Health Institute. Official letter of cooperation was obtained from the respective health institutions. Both verbal and written informed consent was obtained from health service providers.

Before starting the data collection process detail explanations were given about the purpose and the risk of the study all health service providers involved in the study. In order to ensure confidentiality of the information, names of study participants were not included in the questionnaire and participant's records were coded and only accessed by the research team. Health service providers were told on full freedom to withdraw and to refuse at any time during the data collection process.

6. Results

6.1. Socio-demographic characteristics

A total of 388 female health service providers were participated in the study with a response rate of 99%. The mean age with (\pm SD) of study participants was 34.48 (\pm 4.15) with the minimum and maximum age of 27 and 58 years respectively. About 51 % of study participants were within the age group of \geq 35 years and 223 (57.5%) were degree holder, 339 (87.4%) were married and 229 (59%) were nurses. The majority (93.3%) of them were Orthodox Christians. More than half (56.4%) are working at hospitals. Almost two third (62%) the respondents had \geq 10 year experience and majority respondents were married 339 (87.4%) (Table 2).

Table 2: Socio-demographic characteristics among female health service provides in Bahir city Administration, North West Ethiopia 2018.

Variables	Frequency	Percent
Age		
<35	198	51
≥35	190	49
Religion		
Orthodox	362	93.3
Muslim	24	6.2
Protestant	2	0.5
Work experience		
< 10 years	147	37.9
≥ 10 years	241	62.1
Educational level		
Diploma	162	41.8
Degree	223	57.5
Masters and above	3	0.8
Working place		
Hospital	219	54.6
Health center	147	37.9
Health post	22	5.7
Marital status		
Single	34	8.8
Married	339	87.4
Divorced	12	3.1
Widowed	3	0.8
Profession		
Nurse	229	59%
Midwife	48	12.4%
Health officer	12	3.1%
Physician	20	5.2%
Pharmacy	38	9.8%
Laboratory	19	4.9%
Health extension worker	22	4.7%
Monthly Income in ETB		
< 3000	119	30.6
≥ 3000 to < 6000	193	50.5
≥ 6000 to < 9000	56	14.4
≥ 9000	20	5

6.2. Reproductive, other health and screening status

About 67 (17.3%) (95% CI: 13% to 21%) of the respondents had ever screened for cervical cancer, more than half of the respondents working at the screening center 221(57%). Among the respondents, the major reasons not screened for cervical cancer were fear of the screening process and negligence. Both 104 (26.8%), about 268 (69%) use contraceptive, and 327(84.3%) had history of sexual contact ≥ 18 years old. Having one and two child 131(34.8%) and 135 (33.8%) respectively, the mean age at first sexual contact was 22.8 with SD \pm 3.08 and age at menarche was 13 with SD \pm 1.62 (Table.3).

Table 3: Reproductive, other health and cervical cancers screening status of female health service providers in Bahir Dar city administration, North West Ethiopia 2018.

Variables	Frequency	percent
Working at screening center		
Yes	221	57
No	167	43
Ever screened for cervical cancer		
Yes	67	17.3
No	321	82.7
Reason not to be screened		
Fear of the result	87	22.4
I feel shy	15	3.9
Fear of the screening process	104	26.8
Religious believes	11	2.8
Negligence	104	26.8
Age at first sexual contact		
<18	58	19.9
≥ 18	330	80.1
Parity		
No child	90	23.2
One child	131	33.8
Two	135	34.8
Three and more	77	19.8
STI infection		
Yes	4	1.5
No	382	98.5
Use of hormonal contraceptive		
Yes	268	69
No	120	31

6.3. Knowledge about cervical cancer

Among the respondents who answered correctly the causative agent of cervical cancer was nearly three fourth (72.4%) and who mention two or more symptoms of cervical cancer were 113 (29%). Half of the respondents who answered one and more transmission method HPV were 194(50%), and who respond one and more risk factors for cervical cancer were 111(28%), and also who were answering one or more screening methods of cervical cancer was 97(25%). By using descriptive statistics the mean value from 12 questions is 8, and 59% of the respondents were above the mean value taken as knowledgeable whereas the rest 41% not knowledgeable (Table 4).

Table 4: knowledge of female health service providers about cervical cancer in Bair Dar city administration, North West Ethiopia 2018.

Variables	Frequency	Percent
Cervical cancer causative agent		
HPV	281	72.4
I don't know	107	27.6
Cervical cancer symptom		
Bleeding after sexual coital	158	40.5
Lower abdominal pain	1	0.3
Unusual vaginal discharge	49	12.6
Bleeding after sexual coital and lower abdominal pain	6	1.5
Bleeding after sexual coital and unusual vaginal discharge	29	7.4
Bleeding after sexual coital, lower abdominal pain & Unusual vaginal discharge	28	7.2
Risk factor		
HIV/AIDS infection	3	0.7
STIs infection	8	2
Multiple sexual partner	200	51.5
STIs infection and HIV/AIDS	93	24
STIs, HIV/AIDS and multiple sexual partner	18	4.6
Mode of transmission		
Sexual intercourse	178	45.8
Skin to skin contact	16	4.1
Sexual intercourse and skin to skin contact	3	0.7
Method of screening		
VIAA	3	0.7
Pap smear	100	25.7
Biopsy	5	1.2
VIAA and pap smear	77	19.8
Pap smear, VIAA and Biopsy	20	5.2

6.4. Factors associated with cervical cancer screening practice among female health service providers

Among the potential factors explored using bi-variable logistic regression analysis; age, work experience, working in cervical cancer screening center, age at first sexual contact <18 years, STIs and contraceptive use were candidate variable for cervical screening practice at p-value less than 0.2. Age, working in screening center, age at first sexual contact <18 years and contraceptive use were continued to be significantly associated factors for cervical cancer screening practice in multivariable logistic regression analysis at p- value less than 0.05.

Those age ≥ 35 were 3 times more likely to be screened for cervical cancer than their counter parts with (AOR: 2.89; 95% CI: 1.37-6.6.10), those not working in cervical cancer screening center were 74% less likely to be screened than their counters, (AOR:0.26;95% CI:0.14-0.51), those who had not history of sexual contact <18 were 59% less likely to be screened for cervical cancer than those who had history of < 18 years of age (AOR:0.41;95% CI:0.20-0.87), and those who had history of non-contraceptive users were 63% less likely to be screened than users, (AOR: 0.37;95% CI:0.18-0.76) (Table 5).

Table: 5. Bi-variable and multivariable analysis of female health service providers in Bahir Dar city administration, North West Ethiopia 2018.

Variables	Category	Cervical cancer screening practice			
		Yes	No	COR(95%CI)	AOR(95%CI)
Age in years	<35	19	179	1	1
	≥35	48	142	3.18 (1.82-6.57)	2.89(1.37-6.10)*
Work experience	<10	15	132	1	
	≥10	52	189	2.42 (1.12-3.67)	
Working in cervical					
Cancer screening center	yes	51	164	1	1
	No	16	157	0.32 (0.17-0.59)	0.26 (0.14-0.51)*
Age at first sexual					
Contact <18years	yes	16	42	1	1
	No	51	279	0.48 (0.25- 0.92)	0.41(0.20-0.87)*
STI infection	yes	3	1	1	
	No	64	320	0.067 (0.01- 0.65)	
Contraceptive use	Yes	56	212	1	1
	No	11	109	0.38 (0.19 - 0.75)	0.37(0.18-0.76)*

* = P-value < 0.05

7. Discussion

From the 388 respondents, 67 (17.3%), (95% CI: 13% to 21%). female health service providers were screened for cervical cancer. This result is in line with similar study done in River State of Nigeria (17.7%), Brazil physicians (17.9%), Chennai Corporation India (18.4%) and Addis Ababa (17%) (22, 19, 17 and 30) respectively.

In the case of my study area screening facility availability was similar to in River state Nigeria and Addis Ababa, where as in Brazil and India a little more in cervical cancer screening facility.

In contrast, this result is lower than the study done in Turkey (23.5%), Qatar (42.2%), Rwanda (32.9%), Maiduguri Nigeria (23.3%) and Marie Stops clinic in Ethiopia (34.9%), (24,23,28,27and 36 respectively).

This difference in Turkey the study participants were most of them physicians, where as in Rwanda, Nigeria and Ethiopia most health workers working in cervical cancer screening facility.

higher than Rural India (7%), Arba Minch (9.6%), Mekelle, Ethiopia (10.7%), South-South Nigeria(11%), Southern Ethiopia (11.42%), North Eastern India (11.6%),Nigeria Ahmadu Bello university(15%), and India Bangalore (16.4%), (16, 9, 32, 25, 29, 18, 21and 20) respectively.

The most possible reasons higher in my study area might be due to the nature of the study, the sample size, limited cervical cancer screening facility in Arba Minch and Mekelle, difference in educational back ground my study subjects included most of them degree holder whereas in Ahmadu Bello university mid-level health workers (higher diploma), work experience in southern Ethiopia less work experience seen, habit of health service providers screening themselves, their health status and information access.

Age is found to be one of the predictor for cervical cancer screening practice. Those whose age is \geq 35 years of old were found to be 3 times more likely to be screened for cervical cancer than their counters which is in line with the study done in South-West, Maiduguri and Legos states of Nigeria (26, 27 and 33) respectively.

This assertion may be justified by the fact that women of this age group thought that it is the possible time period that sign and symptoms of cervical cancer would be developed, as age increase one of the risk factor for this disease thus, considering this awareness they could be screened themselves.

Those health service providers who are not working at screening center were 74% less likely to be screened for cervical cancer. This result is in contrast to the study done in southern Ethiopia (29). The

possible reason may be no access to screening service, lack of information, negligence, fear of screening process, fear of outcome and embracement examined by the staff (9).

Those health service providers who had no history of sexual contact less than 18 years of age were 59% less likely to be screened for cervical cancer than their counter parts. This might be due to the fact that, they may have an awareness that not practicing sexual contact before 18 years of age is not a risk factor for cervical cancer.

Those health service providers who did not use contraceptives were 63% less likely to be screened for cervical cancer than their counters. This might be due the fact that health service providers could have an awareness that not using contraceptives is not a risk factor to cervical cancer, in addition to this they could not have a chance of an exposure to offer reproductive health counselling services like family planning, STIs, including cervical cancer screening.

8. Conclusion

Despite the fact that a significant number of health service providers were knowledgeable on cervical cancer, their screening practice was found to be low and significantly associated with age, working screening center, use of contraceptive and age at first sexual contact before 18 years.

9. Limitation of the study

9.1. Limitation

- This study did not include qualitative part of study design.
- Since it is a cross-sectional study unable to show the cause-effect relationships.
- Absence of literature on cervical cancer screening practice among female health service providers.
- Not included attitude factors.

10. Recommendations

To Amhara National Regional State Health Bureau

It is better if the cervical cancer screening service expand to all facilities health service providers and customers can easily access it. In addition awareness about the risk factors, involving NGOs and strengthen inter sectorial collaboration like Education bureau for HPV vaccination in school.

Bahir Dar city administration health department

Collaborating with different stake holders to screen women of reproductive age group having risk factors less than 35.

Health institutions/service providers

Health service providers expected to implement their knowledge to practice in screening themselves. Dissemination of health information on risk factors for cervical cancer multiple sexual partners, age at first sexual contact, HIV infection and HPV vaccine is very important.

To researchers

Hence, in spite of having adequate knowledge on cervical cancer, the reasons for the low practice of cervical cancer screening among health service providers need to be further investigated with qualitative study designs approach.

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12. APPENDICES

Appendix I- Information Sheet

Assessment cervical cancer screening practice and associated factors among female health service providers in Bahir Dar city administration

Dear participants;

My name is this exercise is a partial fulfillment of the academic requirement for the award of my MSC in GMPH from Bahir Dar University. I would like to ask you for your assistance to answer the questions correctly and honestly as possible and remember that the information is entirely confidential. I will not going to record your name, hence there will be no way to link your responses to your name. Your responses will be reported only as aggregate data with other respondents. You are selected randomly to be one of the participants in the study. The study will be conducted through self-administer questionnaire. I will be asking you for a little of your time, about twenty-thirty minutes, to participate in this study. There is no incentive/payment given to you for participation. However, your participation is voluntary and you are free to with draw any time from the study. In the end, it is hoped that the information you give us could help for “Assessment of cervical cancer screening practice and associated factors among female health service providers in Bahir Dar City Administration”. If you need any further information you can contact the investigators through the following address.

Your cooperation and assistance is highly appreciated.

Best regard

Amare Mehabaw

Cell: +251918708177

Email:amremelese@yahoo.com

Bahir Dar

Ethiopia

Appendix II- English Consent Form

First of all I would like to thank you just to spend your time for me. As you know, cervical cancer is a critical issue. So, I want to assess cervical cancer screening practice and associated factors among female health service providers in Bahir Dar city Administration You are one of the inputs for this study by responding to questions. This self-questionnaire will take about 20-30 minutes. You have the right not to participate or to withdraw any time in the self-questionnaire. The response you give us will be used for the purpose of explaining the status of cervical cancer screening practice and associated factors among female health service providers. You have the right to withdraw from participation at any step of study.

Are you willing to participate in the study?

Yes, _____ (continue) No, _____ (Thank and stop)

Data collector name signature _____

Date _____ Time _____

Appendix III- English Questionnaires

1. Cervical cancer screening practice and associated factors among female health service providers in Bahir Dar City Administration part socio-demographic questioner

NO	Questions	Categories	Skip Criteria
Q101	Age	-----	
Q102	Ethnicity	1) Amhara 2) Oromo 3) Tigray 4) Agew 5) Other specify -----	
Q103	Religion	1) Orthodox 2) Muslim 3) Protestant 4) Catholic 5) Other specify -----	
Q104	Marital status	1) Single 2) Married 3) Cohabitation 4) Separated 5) Divorced 6) Widowed	
Q105	Working center	1) Hospital 2) Health center 3) Health post	
Q106	Profession	1) Nurse 2) Midwife 3) Health officer 4) Physician 5) Pharmacy 6) Laboratory 7) Health extension worker	
Q107	Educational level	1) Diploma 2) Degree 3) Masters and above	
Q108	Partner's education	1) Unable to read and write 2) Able to read and write 3) Primary school 4) Secondary and above	
Q109	Monthly income	-----	
Q110	work experience	-----	

4. Cervical cancer screening practice and associated factors among female health service providers in Bahir Dar City Administration part II. Cervical cancer Screening practice and knowledge questioner

No.	Questions	Category	Skip Criteria
Q201	Is there cervical cancer screening Service in your facility?	1) Yes 2) No	
Q202	Have you ever been screened for cervical cancer?	1) Yes 2) No	
Q203	Reasons for not been screened?	1) Fear of the result 2) I feel shy 3) Fear of screening tests 4) Religious beliefs	
Q204	Do you know the causative agent of cervical cancer?	1) Yes 2) No	If yes answer Q205
Q205	If yes write the causative agent	-----	
Q206	Do you know cervical Cancer symptoms?	1) yes 2) No	If yes answer Q207
Q207	What symptoms do you know?	-----	
Q208	Do you know risk factors for cervical cancer?	1) Yes 2) No	If yes answer Q209
Q209	What are risk factors?	-----	
Q210	Do you know mode of Transmission of the causative agent?	1) yes 2) No	If yes answer Q211
Q211	By what mechanism could transmit?	-----	
Q212	Do you know cervical Cancer screening method?	1) Yes 2) No	If yes answer Q213
Q213	What screening method do you know?	-----	
Q214	Is there HPV vaccination in your institutions?	1) Yes 2) No	
Q215	Have you ever been vaccinated for HPV?	1) Yes 2) No	

5. Cervical cancer screening practice and associated factors among female health service providers in Bahir Dar city administration part III. questioner on reproductive and other health assessment

Q301	Age at first menarche	_____	
Q302	Age at first sexual contact	-----	
Q303	Parity	1) no child 2) one child 3) two child 4) three and more child	
Q304	Circumcision status	1) Circumcised 2) Not circumcised	
Q305	Partner circumcision status	1) Circumcised 2) Not circumcised	
Q306	Multiple sexual partner	1) yes 2) No	
Q307	Ever used hormonal contraceptives	1) yes 2) No	If yes answer Q308
Q308	Type of contraceptives used	1) Injectable 2) Implants 3) Oral combined contraceptives 4) Intra uterine device 5) Progesterone only pills 6) other specify -----	
Q309	HIV/AIDS status	1) Negative 2) Positive 3) unknown	
Q310	Bleeding after sexual coital	1) yes 2) No	
Q311	STIs infection	1) yes 2) No	
Q312	Smoking	1) yes 2) No	

Appendix IV- Information sheet and Consent form in Amharic

በባህር ዳር ዩኒቨርሲቲ ህክምናና ጤና ሳይንስ ኮሌጅ ህብረተሰብ ጤና ትምህርት ቤት

አማርኛ ቃለ-መጠይቅ

ጤና ይስጥልኝ እኔ ----- እባላለሁ። የምሰራው የማህጸን በር ካንሰር ምርመራ ክፍል ውስጥ ነው። ጥናቱን የሚያካሂዱት በባህር ዳር ዩኒቨርሲቲ የህብረተሰብ ጤና ትምህርት ክፍል ድህረ ምረቃ ተማሪ የሆኑት አቶ አማረ መሃባወ ናቸው። በዚህ መጠይቅ የማህበራዊ ስነ ህዝብ ሁኔታ ስለ ማህጸን በር ካንሰር ምርመራ እንዲሁም ተጋላጭነት ስነ ተዋልዶና ተያያዥ የሆኑ የጤንነት ሁኔታ አጠይቃለሁ ከዚህ ጥናት የሚገኘው ውጤት ሌቶች በማህጸን በር ካንሰር እንዳይያዙ ወደፊት ለዚህ በሽታ የሚጋለጡትን ለማከምና ለመቆጣጠር አስፈላጊ የሆኑ እንክብካቤ ለማድረግ ከፍተኛ ድርሻ ይኖረዋል ብለን እንጠብቃለን።

እኔ እርስዎን ለጥናቱ ጠቃሚ መረጃዎችን እንደሚሰጡኝ በማመን ለዚህ ጥናት ተሳታፊ እንዲሆኑ መርጨዎታለሁ። የሚሰጡትን ማንኛውም አይነት መረጃ በሚሰጡ ለእንደሚያዙና ስምን ወይም የእርስዎን ማንነት የሚገልፅ ማናቸውም አይነት ነገር እንደማይጻፍ እና ከሰጡት መረጃዎች ጋር ፊልም ለማንም ሊገለፅ ሊታወቅም እንደማይችል እንዲረዱልን እንፈልጋለን። በመጠይቁ ወቅት መመለስ የማይፈልጉትን ማንኛውንም አይነት ጥያቄ መተው ወይም በማንኛውም ሰዓት ማቋረጥ ይችላሉ። መጠይቁ 25-30 ደቂቃ ያክል ሊወስድ ይችላል። ለዚህ ደግሞ ፈቃደኛ ከሆኑ የተወሰኑ ጥያቄዎችን እንዲሞሉ በትህትና አጠይቃለሁ።

እርስዎ የሚሰጡን ማንኛውም መረጃ ምስጢራዊነቱ ሙሉ በሙሉ የተጠበቀ ነው።

የጥናቱ ተሳትፎ ፍቃድ መጠየቂያ ቅጽ

የተሰጡትን መረጃዎች በማገናዘብና በመረዳት በጥናቱ ለመሳተፍ ፋቃደኛ ነዎት?

አዎን

የተሳታፊ ፊርማ _____ ቀን _____
(ወደ ቃለ-መጠይቁ ይለፉ)

የለም (ቃለ-መጠይቁን ያቁሙ)

የመረጃ ሰብሳቢው ፊርማ
ስም _____ ፊርማ _____ ቀን _____

የተቆጣጣሪው ፊርማ
ስም _____ ፊርማ _____ ቀን _____

ማንኛውም ጥያቄ ቢኖርዎት የተጠያቂ አድራሻ ባህር ዳር ዩኒቨርሲቲ ፖስታ ሳጥን ቁጥር -----፤ ስልክ ቁጥር: -----

Appendix V- Amharic Questionnaires

1. በባህር ዳር ከተማ አስተዳደር ስር በሚገኙ ጤና ተቋማት የሚሰሩ ሴት ጤና ባለሙያዎች ላይ ለሚካሄደው የማህጸን በር ካንሰር ምርመራና ተያያዥ ምክንያቶች ጥናት ክፍል አንድ ማህበራዊና ስነ ህዝብ ጥያቄ

ተ.ቁ	መጠይቅ	አማራጭ	ምርመራ
101	ዕድሜ	-----	
102	ብሄር	1) አማራ 2) ኦሮሞ 3) ትግሬ 4) አገዳሚ 5) ሌላ ይጠቀስ -----	
103	እምነት	1) ኦርቶዶክስ 2) ሙስሊም 3) ፕሮቴስታንት 4) ሌላ ካለ ይጠቀስ -----	
104	ጋብቻ	1) ያላገባች 2) ያገባች 3) የተዳበረች 4) የተለያየች 5) የተፋታች 6) ባሏ የሞተባች	
105	የስራ ቦታ	1) ሆስፒታል 2) ጤና ጣቢያ 3) ጤና ኬላ 4) ሌላ ይጠቀስ -----	
106	ሙያ	1) ነርስ 2) ሚዲካል 3) ጤና መኮንን 4) ሀኪም 5) ፋርማሲ 6) ላቦራቶሪ 7) ጤና ኤክስፐርት	
107	ደረጃ	1) ዲፕሎማ 2) ድግሪ 3) ማስተርና ከዚያ በላይ	
108	የትዳር አጋር የትምህርት ደረጃ	1) ማንበብና መጻፍ የማይችል 2) ማንበብና መጻፍ የሚችል 3) የመጀመሪያ ደረጃ ትምህርት 4) ሁለተኛ ደረጃና ከዚያ በላይ	
109	የወር ገቢ	-----	
110	የስራ ልምድ	-----	

2. በባህር ዳር ከተማ አስተዳደር ስር በሚገኙ ጤና ተቋማት የሚሰሩ ሴት ጤና ባለሙያዎች ላይ ለሚካሄደው የማህጸን በር ካንሰር ምርመራና ተያያዥ ምክንያቶች ጥናት ክፍል ሁለት የማህጸን በር ካንሰር ምርመራና ግንዛቤ በተመለከተ መጠይቅ

ተ.ቁ.	መጠይቅ	አማራጭ	ምርመራ
201	በእናንተ ተቋም የማህጸን በር ካንሰር ምርመራ አገልግሎት ይሰጣል?	1) አዎ 2) የለም	መልስዎ አዎ ከሆነ ጥ.ቁ 202 ይመልሱ
202	የማህጸን በር ካንሰር ምርመራ ተመርምረው ያዉቃሉ?	1) አዎ 2) የለም	መልስዎ የለም ከሆነ ጥ .ቁ. 203 ይመልሱ
203	ያልተመረመሩበት ምክንያት ምንድን ነው?	1) ዉጤቱን በመፍራት 2) ሀፍረት 3) የምርመራ ሂደቱን በመፍራት 4) ሐይማኖታዊ ጉዳይ 5) ግዴለሽነት	
204	የማህጸን በር ካንሰር መንስዔውን ያዉቃሉ	1) አዎ 2) የለም	
205	አዎ ከሆነ መንስዔው ምንድን ነው	-----	
206	የማህጸን በር ካንሰር ምልክቱን ያዉቃሉ?	1) አዎ 2) የለም	መልስዎ አዎ ከሆነ ጥ .ቁ. 207 ይመልሱ
207	የሚዉቁትን ይዘርዝሩ	-----	
208	የማህጸን በር ካንሰር አጋላጭ ሁኔታዎችን ያዉቃሉ?	1) አዎ 2) የለም	መልስዎ አዎ ከሆነ ጥ .ቁ. 209 ይመልሱ
209	የሚያዉቁትን ይዘርዝሩ	-----	
210	የማህጸን በር ካንሰር መንስዔ መተላለፊያ መንገድ ያዉቃሉ?	1) አዎ 2) የለም	መልስዎ አዎ ከሆነ ጥ .ቁ. 211 ይመልሱ
211	በምን መንገድ ይተላለፋል?	-----	
212	የማህጸን በር ካንሰር የምርመራ ዘዴዎችን ያዉቃሉ?	1) አዎ 2) የለም	መልስዎ አዎ ከሆነ ጥ.ቁ 213 ይመልሱ
213	ምን ምን የምርመራ ዘዴዎችን ያዉቃሉ?	-----	
214	በእናንተ ተቋም ዉስጥ የሂዉማን ፓፒሎማ ቫይረስ መከላከያ ክትባት አለ?	1) አዎ 2) የለም	
215	እርስዎ የሂዉማን ፓፒሎማ ቫይረስ መከላከያ ክትባት ወስደዋል?	1) አዎ 2) የለም	

3. በባህር ዳር ከተማ አስተዳደር በሚገኙ ጤና ተቋማት የሚሰሩ ሴት ጤና ባለሙያዎች ላይ ለሚካሄደው የማህጸን በር ካንሰር ምርመራና ተያያዥ ምክንያቶች ጥናት ክፍል ሶስት የስነ ተዋልዶና የጤንነት ሁኔታ መጠይቅ

ተ.ቁ	መጠይቅ	አማራጮች	ምርመራ
301	ለመጀመሪያ ጊዜ የወር አበባ ያዩበት ዕድሜ?	-----	
302	ለመጀመሪያ ጊዜ ወሲብ የፈጸሙበት ዕድሜ?	-----	
303	የግርዛት ሁኔታ?	1) የተገረዘች 2) ያልተገረዘች	
304	የትዳር አጋር የግርዛት ሁኔታ?	1) የተገረዘ 2) ያልተገረዘ	
305	ከ አንድ በላይ የትዳር ጓደኛ?	1) አዎ 2) የለም	
306	የወሊድ መቆጣጠሪያ ይጠቀማሉ?	1) አዎ 2) የለም	መልስዎ አዎ ከሆነ ጥ.ቁ 307 ይመልሱ
307	ሚጠቀሙት የወሊድ መቆጣጠሪያ አይነት?	1) በመርፊ የሚሰጥ 2) በከንድ የመቀበር 3) በአፍ የሚወሰድ ክኒን ሲኦሲ 4) በማህጸን የሚቀመጥ መከላከያ 5) ፕሮጀስቲቮን ብቻ ክኒን	
308	ኤች አይ ቪ ኤድስ ሁኔታ?	1) ነጋቲቭ 2) ፖዘቲቭ 3) አይታወቅም	
309	ከወሲብ በኋላ በማህጸን መድማት?	1) አዎ 2) የለም	
310	የአባላዘር በሽታ?	1) አዎ 2) የለም	
311	ሲጋራ ማጨስ?	1) አዎ 2) የለም	

Declaration

A thesis submitted to Bahir Dar University school of public health, department of GMPH for the partial fulfillment of the requirements for the degree of masters of public health in general public health on the title of **cervical cancer screening practice and associated factors among female health service providers in Bahir Dar City Administration, North West Ethiopia, from September to October 2018**. This research paper is my real original work and it has not been previously formed on the basis for the award of any degree, diploma of a university or other institution of higher learning.

NAME OF PRINCIPAL INVESTIGATOR	SIGNATURE	DATE
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Approved by:

NAME OF EXTERNAL EXAMINER	SIGNATURE	DATE
_____	_____	_____

NAME OF INTERNAL EXAMINER	SIGNATURE	DATE
_____	_____	_____

NAME OF ADVISOR 1	SIGNATURE	DATE
_____	_____	_____