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Determinants of Precervical Cancer Screening uptake Among Female Sex Workers in Bahir Dar City, North West Ethiopia, 2021

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COLLEGE OF MEDICINE AND HEALTH SCIENCES, SCHOOL OF Public
Health

Determinants of Precervical Cancer Screening uptake Among Female Sex
Workers in Bahir Dar City, North West Ethiopia, 2021

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A THESIS RESEARCH SUBMITTED TO THE DEPARTMENT OF
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COLLEGE OF MEDICINE AND HEALTH SCIENCES, SCHOOL
OF PUBLIC HEALTH

DETERMINANTS OF PRECERVICAL CANCER SCREENING
UPTAKE AMONG FEMALE SEX WORKERS IN BAHIR DAR
CITY, NORTH WEST ETHIOPIA, 2021

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Abstract

Background: Cervical cancer is the leading causes of cancer death in women worldwide. It is preventable and, in most cases, curable, unlike other reproductive organ cancers. Though female sex workers are having higher risk of Human papillomavirus infection due to multiple sexual partners, the screening service uptake is trivial and barriers to pre cervical cancer screening among sex workers remain a few known in Ethiopia.

Objective: To identify determinants of pre cervical cancer screening uptake among female sex workers in Bahir Dar City, North West Ethiopia ,2021.

Methods: Institution based unmatched Case-Control study design was used from January 1 to July 30, 2021 G.C. A total of 287 (58 cases and 229 controls) 1:4 female sex workers were participated in this study. Participants were recruited with systemic random sampling method. Further as a method for data analysis descriptive statistics were used to summarize data and binary logistic regression was employed to identify determinants of pre cervical cancer screening uptake among female sex workers. Bivariate logistic regression was carried out to select candidate variables with a cut-off point <0.2 while adjusted odds ratio were used to measure the strength and significance of association.

Results: Fifty-eight cases and two hundred twenty-nine controls were participated in the study. Mean 23(+/- 4SD) age of cases and controls was twenty-three. Estimated results of the model of pre cervical cancer screening uptake among female sex workers clearly demonstrated that the major reasons for not screened for cervical cancer were, Attitude(AOR= 1.463,(1.349, 1.586),recommended to be screened (AOR=3.107,95%CI(2.507,3.852),Knowledge(AOR=7.810,(2.051,3.027), not painful procedure(AOR=1.354(1.237,1.483),harmful(AOR=1.298(1.177,1.432),prevention(AOR=1.822(1.267,2.621),Workinghour(AOR=3.297(2.530,4.295),frequency of facility visit (AOR=5.181, 95% CI:2.738,9.804) were statistically significant for cervical cancer screening uptake. **Conclusions:** Provider's recommendation, history of sexually transmitted infection, frequency of facility visit and history of vaginal examination were statistically significant predictors for cervical cancer screening uptake. Encouraging female sex workers to visit facilities frequently, recommend to be screened, proper counselling before screening and awareness should be intensified on the importance of screening in order to improve acceptance.

Key Words: Pre cervical cancer, screening, Female Sex workers, Barriers, Human Papillomavirus
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List of Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AOGIN	Asia Ocean research on Genital Infections
AOR	Adjusted Odds Ratio
ART	Ant Retroviral Therapy
CI	Confidence Interval
CMHS	College of Medicine & Health Science
COR	Crude Odds Ratio
FGAE	Family Guidance Association of Ethiopia
FSW	Female Sex Worker
FSWCC	Female Sex workers confidential clinic
HIV	Human Immune Virus
HPV	Human Papilloma Virus
IRB	Institutional Review Board
MSD's	Mahibere Hiwot for social Development
OSSAHD	Organization for Social services Health and Development
SPSS	Statistical Package for the Social Sciences
STI	Sexually Transmitted Infection
VIA	Visual inspection with acetic acid
WHO	World Health Organization

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1. Introduction

1.1 Background

Cervical cancer is a mostly preventable disease, but worldwide it is one of the leading causes of death due to cancer in women. The primary cause of cervical cancer is persistent or chronic infection with one or more of the oncogenic types of human papilloma virus (HPV). Cervical cancer caused by HPV is the most common sexually transmitted infection (1). Cancer causes 4% of deaths in Ethiopia, and the numbers are on the rise. The disease continues to be the number one cancer killer of women in Sub Saharan Africa too, intensified by its connection with HIV. Eighty three percent of new cases and 85% of related deaths occur in resource poor countries; affecting poor, Vulnerable, and ignored women (2). Cervical cancer is preventable and, in most cases, curable, unlike other reproductive organ cancers, if identified in its early stages by safe, simple and reasonably priced methods (3). With one of the highest cervical cancer incidence rates in the world, Ethiopia reported 6,294 new cases of cervical cancer and 4,884 deaths in 2018 (3, 4).

In recent years, the government of Ethiopia has pledged support for cervical cancer prevention and provided a framework for scalable screening implementation. Ethiopia's first Cancer Prevention and Control Plan was published in 2015, outlining a number of ambitious activities to be adopted by the Federal Ministry of Health and Regional Health Bureaus including training various cadres of health providers to provide cervical screening using visual inspection with acetic acid (VIA) and procuring and distributing cryotherapy machines for same-visit treatment of precancerous lesions in VIA+ patients as part of a "screen-and-treat" approach free for all women aged 30–49 years old or with other risk factors for cervical cancer (5). This is the first concerted national effort to establish cervical cancer screening services. A four-year pilot screening program, Addis Tesfa (New Hope), implemented at fourteen sites from 2010 to 2014 laid the groundwork for the Cancer Prevention and Control Plan and demonstrated that VIA is a feasible and appropriate screening method for the Ethiopian context (6). Then, the former first lady of Ethiopia, Roman Tesfaye, publicly championed cervical cancer prevention, garnering attention and funding for the cause as well as establishing a National Cancer Control Taskforce. Since the national screening program was started in 2015, more than 250 health facilities across Ethiopia have started screening and the Ministry plans to increase that number to 800 in the

next phase of scale-up (Personal communication, Ministry of Health, August 9, 2019). Still, uptake of cervical cancer remains low. Facility and community-based surveys have found screening utilization ranging from 0 to 24.8% in populations across the country (7).

Barriers to uptake of screening such as low community awareness, lack of experience with screening, accessibility of screening services, long distances to health facilities and transportation issues, fear or embarrassment associated with cervical exams, other negative attitudes about screening, and misconceptions about cervical cancer have been documented. Commercial Sex workers are at increased risk for cervical cancer due to having multiple sexual partners. In sex workers, the risk of HPV infection and cervical cancer is high. Sex Workers had more than twice the probability of having HPV infection than women from the general population (8).

Pre cervical cancer screening is a way of preventing cancer by finding and treating early changes in squamous columnar junction (SCJ) of external cervical opening by Visual Inspection with Acetic acid (VIA) testing apparently healthy people. Screening test for pre cervical cancer remains the most effective way for early detection and its management. Screening service offers protective benefits and is associated with a reduction in the incidence of aggressive cervical cancer and cervical cancer morbidity & mortality (9).

Though female sex workers are more exposed for several issues such as multiple sexual partners, early initiation of sex, smoking, alcohol, immune-suppression, and presence of other sexually transmitted infection (STI) and at highest risk for developing and dying of cervical cancer and are less likely to be screened, Cervical Cancer awareness and screening is not package of STI / HIV/AIDS prevention and control activities focused on commercial Sex Workers (10, 11).

1.2. Statement of the problem

Globally, approximately 570,000 cases of cervical cancer and 311,000 deaths from the disease occurred in 2018. Cervical cancer was the fourth most common cancer in women, ranking after breast cancer, colorectal cancer, and lung cancer. Approximately 90% of deaths from cervical cancer occurred in low- and middle-income countries. Ethiopia accounts for 7095 newly diagnosed cervical cancer cases and 4732 cervical cancer deaths in 2012 (12).

Cervical cancer is a cancer arising from the squamous columnar junction (SCJ) of cervix, in which the cells of the cervix become abnormal lesion or white epithelial lesions and start to grow continuous, forming a precancerous cervical lesion. Approximately 90% of intraepithelial neoplasia is attributed to human papillomavirus (HPV) infection (13).

Visual Inspection with Acetic Acid (VIA) is one of the screening modalities of the precancerous cervical lesion. One time Screen or test & treat procedure (14, 15). Screening with VIA in low-income countries is a commonly preferred method than Human Papilloma Virus (HPV) test and cytologic or Pap smear. This is because it does not need more advanced trained crypto-technicians or pathologists and other programmatic requirements (16, 17). In Ethiopia, screening uptake of women in the community is low because of the lack of awareness of the community about cervical cancer risk factors and prevention methods (18, 19). In addition to these, screening uptake, as well as knowledge about cervical cancer risk factors and prevention, is also low even among the health workers (17).

Identifying predictors of the precancerous cervical lesion screening uptake is important for planning to more targeted screening programs to diminish the high morbidity and mortality of the cervical cancer in the country (19, 20). However, the predictor of precancerous cervical lesions among the general population in Ethiopia is not well identified. Studies conducted so far in Ethiopia are limited to assessing the cost and its predictors of cervical cancer treatment, prevalence, and predictors of Pap smear cervical epithelial cell abnormality, risk factors associated with aggressive cervical carcinoma, knowledge about cervical cancer, HPV prevalence, and risk factors among Human Immune Deficiency Virus (HIV) positive women. Even a study done about the predictor was centrally located in Addis Ababa where most facilities available to prevent as well as to detect early (21). The Ethiopian health sector development program IV (2010/11–2014/15) includes the prevention and control strategies of cancer (21–25). The study is conducted to know the most common factors which contribute to uptake for pre cervical cancer among Commercial sex workers (CSW) and its prevention.

1.3 Significant of the study

Determinants associated for uptake of pre cervical cancer screening among female sex workers remain unknown and data is limited in Ethiopia.

Identifying of determinants of pre cervical cancer screening uptake and early detection is important to diminution the number of advanced cervical cancer cases, or prevent lesion protracted inside cervical opening. The burden of treating advanced cases and the loss of life secondary to the cervical cancer is high.

It might be used as base line for stakeholders in addressing issues of pre cervical cancer screening uptake and communal barriers to screening which are important for programmers to design interventional strategies, researchers for further studies. It could be also used for teaching and learning purpose in educational and training programs.

2. Literature review

2.1 Pre-Cervical Cancer Screening

Screening in women has diminished advanced incidence and mortality due to cervical cancer. Precancerous cervical lesions (cervical intraepithelial neoplasia) and cervical carcinomas are tremendously associated with sexually-transmitted infections. Like high-risk human papillomavirus (HPV) infection, which causes more than 99% of cervical cancers. Screening methods include cytology, VIA and HPV testing, alone or in combination with each other (27, 28).

2.2 Knowledge on pre cervical cancer and screening

The American Academy of Family Physicians and the U.S. Preventive Services Task Force endorse early screening in immune competent, asymptomatic women at 21 years of age. Women 21 to 29 years of age had better be screened every three years with PAP smear alone. Women 30 to 65 years of age should be screened every five years with PAP smear plus HPV testing or every three years with PAP smear alone. Screening is not recommended for women less than 21 years or in women more than 65 years with an adequate history of negative screening outcomes. The U.S. Preventive Services Task Force is in the process of updating its guidelines. In 2015, the American Society for Colposcopy and Cervical Pathology and the Society of Gynaecologic Oncology published interim guidance for the use of primary HPV testing (29).

In developing countries, cervical cancer remains a clinical problem of public health. Eighty percent of the approximately 400,000 new cases of cervical cancer each year occur in such surroundings. Mainly as a result of the introduction and success of screening programs, cervical cancer rates in developed countries have dropped remarkably (30). However, in most developing countries, screening programs are virtually non-existent. Reasons for this relate mainly to lack of public awareness and the fact that screening via PAP smear is an unreliable proposition for mass screening in such low-resource surroundings. Corresponding the assets obtainable to deliver cervical cancer screening in such surroundings requests other means of providing testing and treatment (31). Current suggestion designates that, depending on local situations and locally-made conclusions, visual inspection of the cervix with acetic acid (VIA), attached with a benign form of therapy, such as cryotherapy, could embrace promise as a means of testing and treatment. By familiarising resource-appropriate technologies and

emerging local consensus regarding clinically driven public health styles that are safe and feasible, the contest of plummeting the mortality from cervical cancer in developing countries (32).

Even though cervical cancer is a major cause of mortality and morbidity amongst women worldwide, it was found to be one of the most avoidable women cancers. Universal, the high incidences of cervical cancer are correlated with lack of early cervical cancer screening. (18) Human papillomavirus is high among sex workers due to having multiple unsafe sexual contacts in spite of low pre cervical cancer screening utilization (33).

2.3 Attitude towards pre cervical cancer and screening

In Ibadan, Nigerian factors where screening service were unawareness, Illiteracy, belief in not being at risk, having many thought-provoking issues and unpremeditated attitude to their health, financial limitation and fear of having a positive result which were more of attitude related factors. But, In Ogun State, Nigeria the knowledge and attitude about cervical cancer screening was poor. More than 90% identified lack of awareness as the barricade to uptake of pre cervical cancer screening. Knowledge on cervical cancer and attitude towards cervical cancer screening were predictors in Nigeria (20). Then, when knowledge and attitude towards cervical cancer and screening were satisfied at individual level, cervical cancer screening uptake might be increased.

2.4 Perception towards pre cervical cancer and screening

The additional Studies conducted in different place and period in Nigeria presented that even if the study participants were aware of cervical cancer screening, less than 25% were screened. The major source of information was the hospital. A number of socio demographic variables played crucial roles in awareness and utilization of cervical cancer included level of educational status of the respondents, increased maternal age and high parity. In Lagos, predictors for cervical cancer screening were age, level of education and previous history of vaginal examination were positively associated with readiness to undergo screening. Age and level of education positively influence screening service where as other variables were in the counterpart (35).

Numerous studies have identified fear of a positive result of having cervical cancer, embarrassment, pain, financial limitations, and attitudes of health workers, lack of

convenient clinic times and lack of female Health Provider screeners as the main barriers to cervical cancer screening. There is also the contributing factor of not wanting to receive positive test results (36). Some women avoid pre cervical cancer screening as they want to avoid emotional anxiety and disruption, and it will only bring doubts upon their family (32).

2.5 Reasons not getting screened for pre cervical cancer

Substantial determinants for pre cervical cancer screening up take in Thailand were religious belief, receiving of information about cervical cancer screening, and perceived risk of developing cervical cancer was positively affects the screening service whereas lack of time for screening service was negatively affects. Shortage of time for screening service was also affecting cervical cancer screening uptake in Malaysia. Other factors which were affecting screening uptake of cervical cancers were painful technique, educational status and income level (34).

Studies that compared participants of pre cervical cancer screening and non-participants of cervical cancer screening found that these women equally agreed that cervical cancer is a serious disease but twice the proportion in the participants group believed that cervical cancer is easily cured if identified early as opposed to the non-participant group who believed that cervical cancer is not treatable irrespective of time of identification (34).

Other Studies presented that low uptake of pre cervical cancer screening was noted for dissimilar reasons like lack of knowledge, lack of access to health care, financial restraints, and attitudes of health service providers. Perceived vulnerability to cervical cancer, perceived harshness to cervical cancer, perceived benefits to doing cervical cancer screening and perceived barriers to seeking cervical cancer screening are the main factors that determines a woman's likely hood to do pre cervical cancer screening although attitudes of health care providers, availability and cost of services are other important determinants. Pre-Cervical cancer screening was depending up on level of awareness (20).

2.6 Determinants of pre cervical cancer screening uptake

In Tanzania, study found that 22.6% of the participants had ever been screened for cervical cancer. Husband's approval of cervical cancer screening, women's level of education, women's knowledge of cervical cancer and its prevention, women's concerns about embarrassment and pain of screening, women's preference for the sex of health care provider and aloofness to cervical cancer screening services were important in relation to uptake of cervical cancer screening service. Extra barriers to cervical cancer screening uptake in developing countries include absence of knowledge about the disease, lack of sympathetic with the idea of preventive health care, inconvenient appointment calendars. Bashfulness, embarrassment, and fear of pain or the test results (20). Pre-Cervical cancer screening up take might increase if women's preference make convenient appointment schedule for screening service.

In the context of Ethiopia, there is low awareness and pre cervical cancer screening uptake. The most important issues identified in Arba Minch were lack of knowledge about the necessity for pre cervical ca screening, fatalistic attitudes about cervical cancer ,low perceived vulnerability, having numerous thought-provoking issues, financial restraint, and emotional barriers (anxiety of having a positive result, embarrassment and predicted shame) but in Mekelle; Age, having multiple sexual partners, history of sexually transmitted disease, HIV positive status, perceived vulnerability to cervical cancer, perceived barriers to premalignant cervical lesions screening and knowledge on cervical cancer screening were important predictors of pre cervical cancer screening uptake. In Debremarkos uptake of pre-cervical cancer screening was found to be low among women of reproductive age. Attitude, age, informed by health service providers, visiting health institution, history of sexually transmitted infections and family history of cervical cancer were found to be significantly associated with higher uptake of screening. Perceived vulnerability, lack of knowledge and emotional barriers (anxiety of having a positive result, embarrassment and predicted shame) were common in these study areas.

3. Conceptual framework

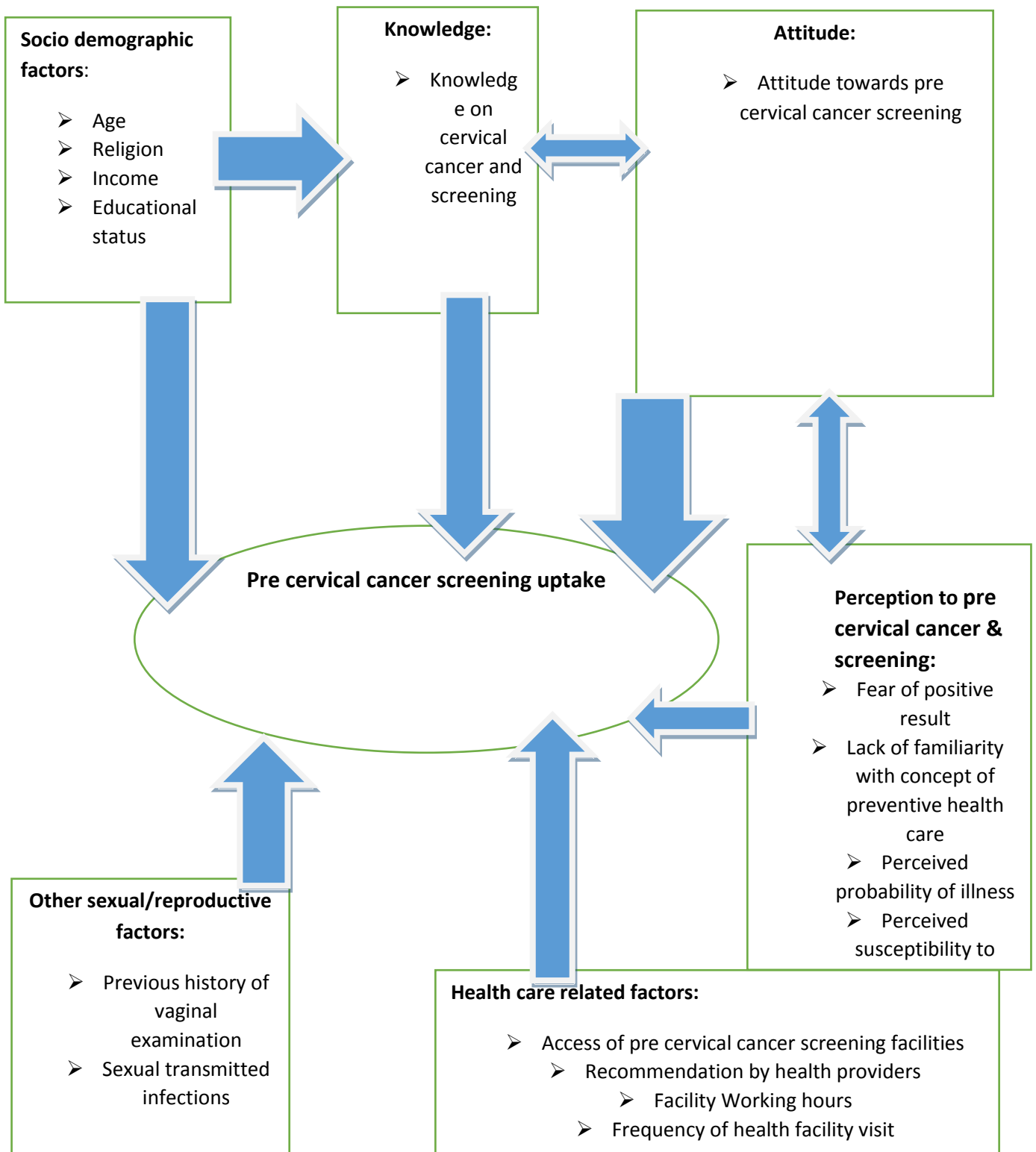


FIGURE 1. Conceptual framework on determinants for pre cervical cancer screening uptake among female sex workers in Bahir Dar city, North West Ethiopia adapted (5-31, 37, 38).

4. Objective of the study

- To identify determinants for pre cervical cancer screening uptake among female sex workers in Bahir Dar city, North West Ethiopia, 2021.

5. Methods

5.1 Study Design and period

Institution based unmatched Case-Control study design was used from January 01, 2021 to July 31, 2021 G.C

5.2 Study setting

Bahir Dar is the capital city of Amhara regional state located 563 km away from the North West of Addis Ababa, the capital city of Ethiopia, having a total Area of 28 kilometre square ,latitude and longitude of 11°36'N 37°23'E_and an elevation of 1,840 meters (6,040 ft. feet)_above sea level.

Felege Hiwot Referral Hospital is the one of governmental health facility which provides pre cervical cancer screening service for those who are living with HIV and other public health facilities which provides pre cervical cancer screening service for general community.

In addition, there are three donor supported organizations which works on sex workers: Family Guidance Association of Ethiopia Female Sex workers confidential clinic (FGAE FSWCC), Mahibere hiwot for social Development (MSD's) and OSSAHD (Organization for social services, Health and Development).

FGAE FSWCC is located in Bahirdar city for female sex workers which provides routine pre cervical cancer screening and therapy service free of charge for female sex workers. In each Keble, there are assigned peer promoters links those commercial sex workers to FSWCC. According to national Catch-up campaign HIV testing and treating program estimation, there are 6650 female sex workers with in the city.

Total number of female sex workers who visited FGAE FSWCC from

January/2021to July/2021were 510 of which 81 were offered, accepted and screened and also 429 were offered but declined for cervical cancer screening. They are coordinated by peer promoters and visit their clinic at least once a month. Those female sex workers offered for screening service were living in Bahirdar.

5.3 Source Population

All Female Sex Workers who lived in Bahirdar City and visited FGAE FSWCC.

5.4 Study Population

Cases: Female Sex workers who were screened for pre cervical cancer using either visual inspection with acetic acid (VIA) or Pap smear test once registered in FGAE Bahir Dar.

FSWCC from March /2021to July/2021who are currently lives in Bahirdar.

Controls: Female sex workers who were offered and declined for cervical cancer screening either VIA or Pap smear test registered in FGAE Bahir Dar FSWCC who are currently living in Bahirdar.

The date of screening of a case becomes the index date for its controls.

5.5 Inclusion and Exclusion Criteria

5.5.1 Inclusion Criteria for cases and controls

Sex workers who are currently living in Bahirdar and visiting the clinic and offered pre cervical cancer screening service.

5.5.2 Exclusion Criteria cases and controls

Female sex workers who are unable to respond during questioner interview period and living outside of Bair Dar.

5.6 Sampling and Sample size Determination.

Sample size has been calculated using epi info version 7 by considering 95% CI power =80% with case to ratio of 1:4as follows,

Table 1 Sampling and Sample size Determination.

Variable	Response	screened		AOR	% of cases exposed	% of controls exposed	Required sample of		Total Sample size
		Yes	No				Case	control	
History of STIs (18)	yes	2	49	6.92	3.9	26.1	33	129	162
	No	44	124						
History of vaginal examination (18)	Yes	39	103	0.21	9	27.4	52	208	260
	No	7	70						

Since highest sample size based on the above assumption is 260 (cases=52 and controls=208). By adding 10% of non-response rate, the final sample size was 287(58 cases and 229controls).

5.7 Sampling technique and procedures

Selection of cases: Participants were recruited with systematic sampling. The probabilistic framework is maintained through selection of one or more random starting points. Female sex workers who were screened for cervical cancer using either VIA or Pap smear test once registered in Bahir Dar FGAE FSWCC from January /2021 to July/ 2021 who were currently lives in Bahirdar. Both cases and controls were selected from Health facility register. Every case was selected by simples random ampling method. The data collectors were contacts the participants after getting the service package.

Selection of Controls: Participants were recruited systematic sampling is a type of probability sampling where each element in the population has a known and equal probability of being selected. The probabilistic framework is maintained through selection of one or more random starting points. Female sex workers who were offered and declined cervical cancer using either VIA or Pap smear test registered in Bahir Dar FGAE FSWCC from January /2021 to July/ 2021 who were currently lives in Bahirdar. Both cases and controls were selected from Health facility register. Every controls were also selected by systematic sampling method.

5.8 Study Variables

Dependent

- cervical cancer screening uptake (Yes/No)

Independent

- **Socio demographic factors:** age, education, Income, religion, ethnicity
- **Knowledge related factors:** Knowledge on Cervical cancer, Prevention measures, risk factors.
- **Attitude & perception related factors:** Attitude to towards cervical cancer, Screening, procedure, perception of risk, severity of cervical cancer, importance of cervical cancer screening, Confidentiality, Perceive probability of illness Perceived susceptibility to cervical cancer, Perceived barriers for cervical cancer screening
- **Other Sexual and Reproductive factors:** Parity, previous history of vaginal examination, History of Sexually transmitted infections diagnosis and treatment
- **Health system Factors:** Access of pre cervical cancer screening facilities, recommendation by health service provider, facility working hour, Inconvenient time schedule, average number of visits to a health facility.

5.9 Operational definitions

- **Uptake of cervical cancer screening:** Those female sex workers who are offered, accepted and screened for cervical cancer either by VIA or Pap smear once.
- **Knowledgeable on cervical cancer-** of 10 knowledge questions, Knowledge questions were summed up and a total score was obtained for each respondent. the score was calculated and those who scored equal to or greater than the 60% were categorized as “sufficient Knowledge “and those who scored below 60% were categorized as “insufficient knowledge” towards cervical cancer and screening.

- **Attitude and perception of Cervical cancer screening:** Constructs on cervical cancer and screening with a 5-point Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used.

Constructs was assessed women's perception of risk, severity of cervical cancer and the importance of pre cervical cancer screening. Individual responses was analysed separately as ordinal data. Items which have similar idea were summed. Then those having positive responses were coded as favourable attitude and negative responses were coded as unfavourable attitude for cervical cancer screening. Those responses coded as "Neutral" were considered as unfavourable attitude. A total of ten questionnaires used to measure the attitude and perception of participants.

5.10 Data collection tools and procedures

The Data collection tool was prepared in English, translated to Amharic and retranslated to English. The data was collected by 3 data collectors who were health professionals and Interviewer administered questionnaires were used.

5.11 Data quality assurance:

The quality of the data was assured through careful design and the tool was pretested on cases and controls which is 10% (29 participants) of the study population at Gonder confidential clinic before the actual data collection period ,proper training of the two data collectors and one supervisor were given , close supervision of the data collectors and proper handling of the data. At the end of each data collection day the investigator checked the completeness of data.

5.12 Data management and analysis procedures

Questionnaires were manually checked for errors, entered to SPSS 23 for further analysis. Knowledge questions were summed up and a total score was obtained for each respondent. The mean score was calculated and those who scored equal to or greater than the mean were categorized as "sufficient Knowledge "and those who scored below the mean were categorized as "insufficient knowledge" towards cervical cancer and screening.

Attitude about cervical cancer and its screening practice, severity, susceptibility were measured using Likert scale system. Negatively-worded statements were reverse-coded (or reverse scored). The responses were summed up and a total score was obtained for each

respondent. The mean score was calculated and those who scored equal to or greater than the mean were categorized as having a favourable attitude and those who scored below the mean were categorized as having unfavourable attitude towards cervical cancer screening.

Bivariate binary logistic regression was performed with regression method with a cut-off P value <0.2 for variables to enter in to multivariate binary logistic regression. Hosmer - Lemeshow goodness of fit test was checked with p-value > 0.05 . Adjusted odds ratio with 95% CI at 5% level of significance was used to measure the strength and significance of association between dependent and explanatory variables. Variables were presented in frequency tables and charts.

5.13 Ethical consideration

Ethical Clearance was obtained from Institutional Review Board (IRB) of Bahir Dar University, CMHS-Public Health Institute to conduct the research. Letters of support was received from the Bahirdar university. The head of the clinic was informed about the purpose of the study that it will contribute for the health needs of sex workers in the study area and in country at large. Before collecting the data, verbal Consent was obtained from each participant. Participants were informed that participation was on a voluntary and they could withdraw at any time if they were not comfortable Names of the respondents was not be used to ensure obscurity and confidentiality. Questionnaires were given unique identifiers/codes during data entry and analysis. All information obtained from the health institution& respondents were kept confidential.

6. Results

6.1 Socio demographic Characteristics

Two hundred eighty-seven female sex workers, 58 cases and 229 controls, participated in this study with a response rate of 100 %. Cases and controls those were orthodox Christian was 98.2% and 97.3% respectively. 17.2% of cases and 19.2% of controls were unable to read and write. Primary level of education of cases and controls was comparable which is 41.3% and 39.7% respectively and collage and above level of education 3.5% and 4.8% respectively. Income of participants had average 2400ETB per month.

Table 2: Socio demographic characteristic of female sex workers in Bahir Dar city (January,2021-July,2021)

Variables	Categories	Cases (Screened)		Controls (Not screened)	
		Number of sex Workers	Percent	Number of sex workers	Percent
Age in years	<20 years	10	17.3	6	2.6
	>=20 years	48	82.7	223	97.4
Educational status	Can read and write without regular schooling	8	13.7	16	6.98
	Not educated	10	17.2	44	19.2
	Primary education	24	41.3	91	39.7
	Secondary education	14	24.1	67	29.2
	Collage and above	2	3.5	11	4.8
Religion	Orthodox	57	98.2	223	97.3
	Muslim	1	1.8	6	2.7
Ethnicity	Amhara	58	100	229	100

6.2 Knowledge, attitude and perception of female sex workers on cervical cancer & screening

Having sufficient knowledge about cervical cancer and screening were 89.6% more likely to pre cervical cancer screening than those with insufficient knowledge (AOR= .410, CI: 063, 2.653).

Having favorable Attitude about cervical cancer and screening were 89.7% more likely to pre cervical cancer screening than those with unfavorable attitude (AOR=.190,95% CI: .029,1.243)

Having positive **perception of risk, severity of cervical cancer and the importance of pre cervical cancer & screening** were 84.4 % more likely to pre cervical cancer screening than those with negative **perception of risk, severity of cervical cancer and the importance of pre cervical cancer & screening** (AOR= 19.950,95%CI:.9.170, 43.405)

Table 3: knowledge, attitude and perception of female sex workers on cervical cancer Bahir Dar city (from January, 2021-July, 2021)

Variables	Categories	Cases (Screened)		Controls (Not screened)	
		Number of sex workers	Percent	Number of sex workers	Percent
knowledge of female sex workers on pre cervical cancer & screening					
	Insufficient knowledge	6	10.4	26	11.5
	Sufficient Knowledge	52	89.6	201	88.5
Attitude of female sex workers on pre cervical cancer & screening					
	Unfavorable	6	10.3	26	9.5
	Favorable	52	89.7	201	88.5
Perception of risk, severity of cervical cancer and the importance of pre cervical cancer screening					
	Positive	49	84.4	49	21.5
	Negative	9	15.6	178	78.5

6.3 Reasons for not getting screened for cervical cancer

Major reasons mentioned for not getting screened for cervical cancer were being healthy, where the service has been given to be screened and I did not get information from health professionals.

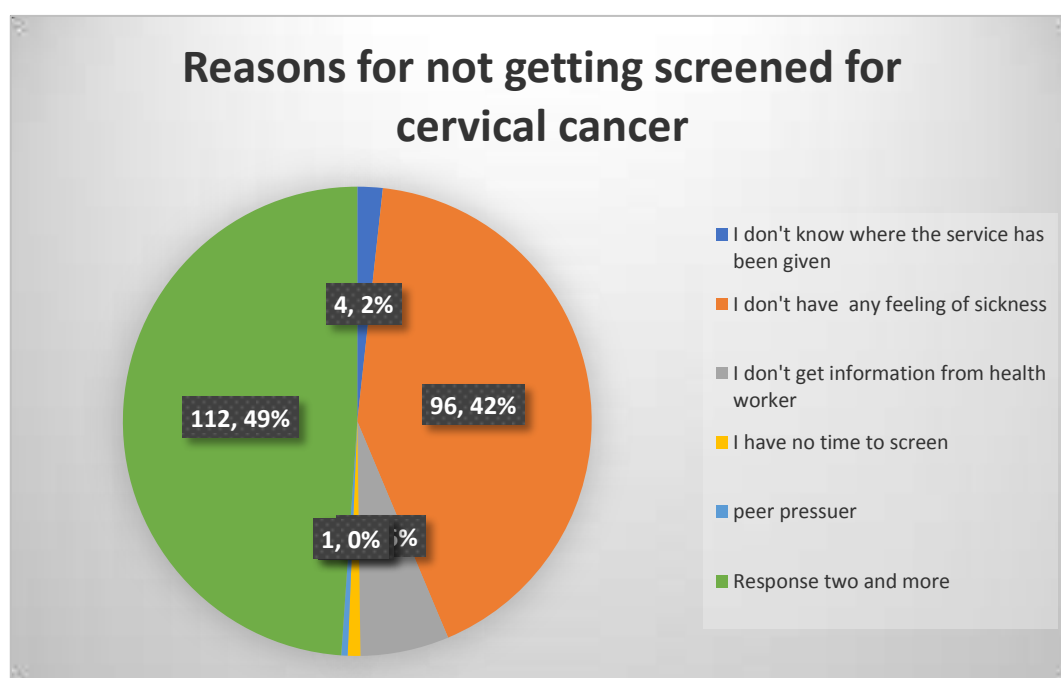


FIGURE 2: REASONS FOR NOT GETTING FOR CERVICAL CANCER SCREENING

6.4 Determinants of uptake of pre cervical cancer screening

The effects of different independent variables were tested for uptake of cervical cancer screening using binary logistic regression analysis. Variables having P-values < 0.2 in bivariate binary logistic regression analysis at p-values < 0.2, CI 95% were included in multivariable analysis.

Among variables; age of sex worker, knowledge, attitude, Fear of positive result, Lack of familiarity with concept of preventive health care, Perceived probability of illness, Perceived susceptibility to cervical cancer, Perceived barriers to pre cervical cancer screening, Access of pre cervical cancer screening facilities, Recommendation by health providers, Facility Working hours, Frequency of health facility visit, Previous history of vaginal examination, Sexual transmitted infections were candidate variables. Finally in order to control

confounding, multivariable analysis was used after checking hosmer-lemeshow goodness of fit test (0.500).

Female sex workers who visited health facilities six or more times per a year were five times more likely to pre cervical cancer screening than those visited health facilities less than six times. (AOR= 5.181,95% CI: 2.738,9.804)

Those female sex workers who knew cervical cancer is caused by sexually transmitted infections were 2 times more likely to pre cervical cancer screening than those did not know cervical cancer is caused by sexually transmitted infections. (AOR=1.409 ,95%CI:.663, 2.993)

Table 4-Bivariate and multivariate analysis of factors associated with cervical cancer screening service uptake among sex workers in Bahir Dar city from January, 2021-July, 2021 by composite variable

Variables	Categories	Screened for Cervical cancer (Outcome)			
		No	Yes	COR (95%CI)	AOR (95%CI)
Age of sex worker (in years)	<20	6	10	1	1
	≥20	223	48	.129 (.045, .372)	.121(.041,.355)
Knowledge	Sufficient Knowledge	201	52	1.170(.448, 3.059)	.410(.063,2.653)
	insufficient Knowledge	26	6	1	1
Attitude	Favorable	208	52	1.143(.439,2.975)	.190(.029,1.243)
	unfavorable	21	6	1	1

Frequency of facility Visit/year	≥6	77	42	.193 (.102, .365)	5.181(2.738,9.804)
	<6	152	16	1	1
screening prevent cervical cancer	Yes	135	40	1.547(.836,2.863)	.886(.393,1.999)
	NO	94	18		
Working hours convenient for Pre cervical cancer screening for you	yes	208	51	1.359(.548,13.373)	.397(.141,1.119)
	No	21	7	1	
History of STI	Yes	166	49	2.288(1.026,5.103)	1.250(.676,2.311)
	No	61	9		

Table 7-Bivariate and multivariate analysis of factors associated with cervical cancer screening service uptake among sex workers in Bahir Dar city from January,2021- July,2021

Variables	Options	Screened for Cervical cancer			AOR (95%CI)	P.Valu
		No	Yes			
Age of sex worker (in years)						
	≤20	6	10		1	
	>20	223	48		.129 (.045, .372)	.000
Knowledge						
	Sufficient Knowledge	86	45		7.810(2.051, 3.027)	.000
	insufficient	143	13			

	Knowledge					
Attitude	Favorable	193	53		1.463(1.349, 1.586)	.000
	unfavorable	36	5			
Have you recommended on pre cervical cancer screening with service provider						
	Yes	35	57		3.107 (2.507, 3.852)	.000
	No	194	1		1	
Feel sense of insecurity when attempting on pre cervical cancer screening						
	Yes	27	15		1.682(1.489, 1.901)	.000
	No	202	43			
Pre cervical cancer screening procedure is not painful						
	Yes	42	53		1.354 (1.237, 1.483)	.000
	No	187	5		1	
Pre cervical cancer screening has harm to clients						
	Yes	17	54		1.298 (1.177, 1.432)	.804
	No	210	4			
Frequency of facility Visit/year						
	≥6	140	44		.841 (.769, .921)	.000
	<6	89	15			

Can pre cervical cancer screening prevent cervical cancer	Yes	147	13		1.822(1.267,2.621)	.001
	NO	82	45			
Diagnosis						
	Yes	164	48		.877 (.678, 1.133)	.315
	No	65	9		1	
Is the working hours convenient for Pre cervical cancer screening for you	yes	208	51		3.297(2.530,4.295)	.000
	No	21	7		1	

NB *-statistically significant

7. Discussion

This study was conducted to identify determinants of cervical cancer screening uptake among female sex workers in Bahir Dar city from January,2021-July,2021.

Knowledge of female sex workers, in both cases and controls, towards cervical cancer were 89.6% and 88 % respectively. Over all knowledge of female sex workers on cervical cancer was 88%.This finding was higher than studies done in Tanzania (21.4%) (20) , in Addis Ababa (27%)(15), in Gondar (31%) (16),in Arbaminch (31),and in Debreworkos (31). This knowledge difference might be due to study population, time and frequency of facility visit.

Sufficient Knowledge of female sex workers, controls, on cervical cancer screening was 88 %. sex workers, and cases had sufficient knowledge on cervical cancer screening 89.6 % even so screening is low. This finding was higher than studies done in southern Ethiopia (86.9%)(17),.This discrepancy might be due to level of education & study population.

Female sex workers, controls, had unfavorable attitude (9.5%) whereas cases had favorable attitude (89.7%) towards cervical cancer and screening. Overall, 88 % female sex workers had favorable attitude towards cervical cancer and screening this findings higher than reported in Arba Minch 53.8% (31) and Tanzania (55.7%) (20) , women had positive attitude towards cervical cancer and screening. Having favorable attitude is mostly followed by having knowledge about the cervical cancer and screening. This difference in attitude might be due to difference in knowledge, study setting and population.

It can be described as the facts that when people are healthy they don't worry about preventive services as they have other challenging problems. According to the current study, nonappearance of symptoms or being healthy is one of the main reasons of not getting for cervical cancer screening uptake for female sex workers. The same result was also reported from the study done in Nigeria (22) ,Colombia(23), and Ethiopia(29).

Female sex workers are working through night and sleep during cervical cancer screening working hours. Lack of time and inconvenient working hours is also a reason for not screened for cervical cancer. This finding was supported in studies done in Tanzania (20) ,Seattle(25) and Addis abeba Ethiopia (26)

Cervical cancer is curable in most cases if detected early but majority of female sex workers not getting screened due to fear of positive result. The same result was reported from studies done in different regions of Nigeria(20) ,Kelantanese(26),Jordan(35),Arba Minch town(31) and Mekelle (31).

Opportunistic screening can increase screening uptake. Every female sex worker who has STIs/HIV/AIDS should be initiated to screen for cervical cancer during clinic visit. Those female sex workers who had sexually transmitted infections were more likely to be screened than who hadn't diagnosed and treated for STIs. This result a line in studies conducted in Mekelle(31),in Botswana(37) and Zambia (38). It could be that when they were treated STI at institution, they could be told about the relationship of cervical cancer and STI by the health provider so they could get screened. There might be also linkage other reproductive service with cervical cancer screening.

Female sex workers should be encouraged to visit health facilities regularly to progress cervical cancer screening uptake. Female sex workers visited health institution frequently would have higher chance of getting more wide-ranging information from health professionals in the form of health information, counseling or education about early cervical cancer screening. In this study, frequency of visit of female sex workers to health facilities had influence on cervical cancer screening uptake. In Singapore women who attended regular health checkup visits were more likely to be screened for cervical cancer(13).One case-control study in the United States found that women who had never had facility visit were less likely to have screened for cervical cancer. This study found a strong association between health provider recommendation and uptake of cervical cancer screening. It is found to be the first reason for not getting screened. The positive influence of health recommendation on cancer screening uptake has been well documented in numerous studies conducted in Korean-American(22),Colombia(23),Jamaica, India(34) ,Jordan(35),Thiland (32) and Malaysia (35) . Women might be more responsive to health providers who educate them about the disease and preventive measures. In addition, it is an opportunity to address negative attitudes about cervical cancer.

Most women's become uncomfortable with the idea of vaginal examination of private parts. When health providers perform pelvic examination, shall be with gentle attendant to reduce frustration and shay or embarrassment. This finding indicated that sex workers who had history of vaginal examination were negatively associated with uptake of cervical cancer screening which was supported with study done in India stated that uncomfortable pelvic examination was a reason for not getting screened for cervical cancer(18) whereas studies conducted in India(30),Nigeria(31),(32)and Turkey(35) showed that history of vaginal examination were positively associated with cervical cancer screening uptake. This discrepancy might be due to miss treatment, unfriendly procedure, poor counselling and painful procedure.

8. Conclusions

Major reasons provoked for not getting pre cervical cancer screened were being healthy, never recommended to be screened, history of sexually transmitted infection, provider's recommendation, frequency of facility visit, fear of positive result and history of vaginal examination were independent predictors for cervical cancer screening uptake.

9. Recommendations

Based on findings of this study, the following recommendations are suggested:

Family Guidance Association of Ethiopia: Female sex workers should be properly counseled before being screened and awareness should be intensified on the importance of screening in order to promote compliance. Encouraging FSWs to visit facilities frequently, recommend female sex workers consistently to be screened, arrange convenient time for sex workers to improve screening uptake. Regarding health education and promotion, focus on the preventive benefits of screening, the asymptomatic nature of early-stage cervical cancer, regular health checkups. Create awareness, for both health providers and female sex workers, that pre cervical cancer is curable with appropriate treatment if detected early. This can help female sex workers to some extent minimize their fear of positive result and reluctance to be screened.

Amhara Regional Health Bureau: Shall create awareness on pre cervical cancer and screening for health providers and female sex workers, mobilize sex workers through peer support groups for screening service and provide cervical cancer screening service for female sex workers in campaign and regular period, provide orientation for all private health facilities to recommend female sex workers and link to pre cervical cancer screening facilities. Pre cervical cancer screening and treatment should be provide within one visit period and incorporated into maternal and child health program and provide the same priorities as of HIV/AIDS, tuberculosis, Childhood immunization.

Amhara Region Women's Affairs: Create demand awareness on pre cervical cancer and screening program using government's women's organizational structure up to community level.

Amhara Media Corporate: Shall promote pre cervical cancer and screening program regularly at convenient air time for audience and also invites scholars on it.

Partners: who works on female sex workers shall strengthen community mobilization and link to pre cervical cancer screening facilities.

To all Health facilities and Health workers: avail HPV DNA based test as the preferred method and visual inspection with acetic acid or cytology.

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ANNEX I-ENGLISH VERSION INFORMATION SHEET

Title of the Research Project -Determinants of pre cervical cancer screening uptake among commercial sex workers in Bahir Dar city, North West Ethiopia.

Name of Organization: Bahir Dar University, Collage of Medicine & Health Sciences.

Principal Investigator –Mebratu Enthabu Kassa

Name of sponsor: Self Sponsor

Introduction: This information sheet and consent form is prepared for study participants and Female Sex workers Confidential Clinic. The aim of the form is to make the above concerned office clear about the purpose of the research work, data collection procedures and get permission to undertake the research.

Procedure-case-control study design was conducted with structured questionnaire.

Purpose of the research-The purpose of this research will be to identify determinants of pre cervical cancer screening uptake among commercial sex workers in Bahir Dar city. The findings will be used for policy makers to make decisions regarding cervical cancer prevention and treatment among female sex workers.

Risks and discomfort- By participating in this research, there is totally no risk that comes whereas doing these is of great importance for overall planning and improvement of the program. There is no expected risks and discomforts will happen being participating in this study.

Benefit: The research have no direct benefit for participating in this research. But the indirect benefit of the research for the participant and all other clients in the program is clear. This is because if program planners are preparing predicted plan there is a benefit for women's in the program of getting appropriate strategies. Of all, the Research work has a paramount direct benefit for health care planners and managers, especially for those on cancer prevention and treatment planning and management.

Confidentiality-I assure that whatever information I obtained will only be used for the purpose of this research and will not be made available to anyone outside the research team. The information collected will be kept confidential and information about you that

will be collected by this study will be stored in a file, without your name, but a code number assigned to it

Right to Refuse or Withdraw: You have the full right to refuse from participating in this research. You can choose not to respond some or all the questions and this will not affect you from getting any kind of service given in the facility.

Person to contact

The address of the principal investigator is:

Name: Mebratu Enthabu Kassa

Mobile phone: +251 911487687, E-mail: Mebratuen@gmail.com

Bahirdar, Ethiopia

ANNEX II - CONSENT FORM (ENGLISH VERSION)

Introduction

Hello, my name is ----- . I am working with Mebratu Enthabu Kassa who is doing a research as partial fulfilment for the requirement of GMPH in Bahirdar University college of Medical and health sciences on “Determinants of pre cervical cancer screening uptake among female sex workers in Bahirdar, Northwest Ethiopia.

I am requesting your permission to participate in this research for the study of identify “Determinants of pre cervical cancer screening uptake among commercial sex workers in Bahirdar City, North West Ethiopia in order to generate information necessary for the planning of appropriate strategies and interventions for timely detection which is important to decrease the number of advanced cervical cancer cases, the financial burden of treating advanced cases and the loss of life secondary to the disease.

I assure that whatever information I obtained will only be used for the purpose of this research and will not be made available to anyone outside the research team.

Do you agree to participate and answer the questions listed below?

A –Agree... (If agree continue) B-Disagree..... (If Disagree stop)

Section 0: questionnaire identification data

001 Questionnaire Identification code _____

003 Data collectors’: code _____

004 Supervisor’s: code _____

005 Date of data collection: ____________ day\ month\ year

I. Socio Demographic Characteristics of commercial sex workers

NO	Question	Coding Categories	Skip to
1	Age of study participants (in years)	
2	Educational status	1. Not educated 2. Primary (1-8 grade) 3. Secondary (9-12 grade) 4. college and above	
3	Religion	1. Orthodox 2. Muslim 3. Protestant 4. Catholic	
4	Average monthly income (ETB) per month	-----	
5	Ethnicity	1. Amhara 2. Oromo 3. Tigray 4. Awi 5. Other specify.....	

II. Knowledge of sex workers about cervical cancer risk factors and preventive measures.

#	Questions	Possible answers	skip
1	What are the risk factors for cervical cancer?(should know at least one risk factor)	1. Multiple sexual practice 2. Early sexual intercourse 3. HPV infection 4. Cigarette smoking 5. Don't know	

2	What are Prevention measures for cervical cancer? (Must know at least on prevention measure)	1. Avoiding multiple sexual partners 2. Avoiding early sexual intercourse 3. Vaccination of HPV 4. Early screening and treatment 5. Avoid cigarette smoking 6. Don't know	
3	Can cervical cancer screening prevent cervical cancer?	1. Yes 2. No	
4	Early detection of cervical cancer is helpful in its treatment	1. Yes 2. No	
5	Can screening detect early disease?	1. Yes 2. No	
6	Is Cervical cancer curable if detected early?	1. Yes 2. No	
7	What is your Source of information for cervical cancer screening for the first time?	1. from Colloquies' 2. From Health professionals 3. from Mass media	
8	Do you Know when sex workers should undergo cervical cancer screening?	1. Yes 2. No	
9	Do you know that early initiation of sexual intercourse increases the risk of getting cervical cancer?	1. Yes 2. No	
10	Do you know that Cervical cancer is caused by sexually transmitted infection	1. Yes 2. No	

III. Attitude of Commercial Sex workers towards uptake of cervical cancer

(Instruction for Interviewer: Put “x” in line with your option.)

#	constructs	Favorable attitude		Unfavorable		
		Strongly Agree =5	Agree =4	Neutral =3	Disagree =2	Strongly Disagree=1
1	Cervical cancer is caused by highly preventable sexually transmitted infection.					
2	Cervical cancer screening procedure isn't painful					
3	Pre cervical cancer screening service can help in the prevention of cervical cancer.					
4	Pre cervical cancer Screening has harm to clients					
5	All Commercial sex workers should present themselves for pre cervical cancer screening is a good one.					
6	Pre cervical cancer screening is necessary for all women who are sexually active.					
7	I look forward to being screened for pre cervical cancer screening.					
8	Women that maintain good genital hygiene and one sexual partner do not need cervical cancer screening.					

9	I feel a sense of insecurity when attempting pre cervical cancer screening.					
10	Cervical cancer would make a women's life Very difficult					

IV. Other SRH related factors for cervical cancer uptake among sex workers

No	Question	Coding Categories	Skip to
1	Have you had previous vaginal examination?	1. Yes 2. No	
2	Have you had diagnosis and treated for sexually transmitted infections?	1. Yes 2. No	

V. Health system and related factors

No	Question	Coding Categories	Skip to
1	How many times did you visit health care providers per year (Averagely)	-----	
2	Have you discussed on cervical cancer with health care providers?	1. Yes 2. No	
3	Is the working hour convenient for pre cervical cancer screening for you? (If response is "Yes", Finish your question by say Thank You!!)	1. Yes 2. No	If "No" con't to next Q
4	For Q#3, if time is not convenient for screening service, which time is comfortable for getting the service for you?	------(in Hour)	

5	If you were not screened for pre cervical cancer before, what was the reason? (Select more than one option)	1. I don't know screening sites 2. I am healthy (Not ill for screening) 3. I have never recommended by health professionals 4. Afraid of positive result 5. Time shortage 6. Peer influence not to be screened If any other Specify	
---	---	---	--

THANK YOU!!

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3	ሀይማኖትሽ	1. አርቶዶክስ 2. እስልምና 3. ፕሮቴስታንት 4. ካቶሊክ 5. ሌላ ካለ ይገለጽ-----	
4	አማካኝ የቀን የገቢ መጠን (በኢትዮጵያ ብር)	-----	
5	ብሄር	1. አማራ 2. አሮሞ 3. ትግራይ 4. አዊ 5. ሌላ ካለ ይገለጽ.....	

II. የሴተኛ አዳሪዎች ስለሚገኝበት ካንሰር አጋላጭ ምክንያቶችና መከላከያ መንግዶች ያላቸውን እወቅት ለመላካት የተዘጋጀ መጠይቅ

ተ.ቁ	መጠይቅ	መልስ	
1	ለሚገኝበት ካንሰር አጋላጭ ምክንያቶች ምን ድን ናቸው? (በደንስ አንዱን መጥቀስ አለባቸው)	1. ከብዙ ሰዎች ጋር ጥንቃቄ የጎደለው የግብር ስጋ ግንኙነት ማድረግ 2. በአፍላ እድሜቀደም የግብር ስጋ ግንኙነት መጀመር 3. የኤች አይ ቪ ህመሙን መሆን 4. ሲጋራ ማጨስ 5. የሚገኝበት ካንሰርን ሊከላከል የሚያስችል ክትባት አለ መከተብ 6. የወሊድ መቆጣጠሪያ ክኒኖችን ለረጅም ጊዜ ከ 5 አመታት በላይ መጠቀም 7. ከ3 ልጆች በታች መወለድ 8. አላወቅም 9. ሌላ ካለ ይገለጽ.....	
2	የሚገኝበት ካንሰር መከላከያ መንግዶች ምን ድን ናቸው? (በደንስ አንዱን መጥቀስ አለባቸው)	1. ልቅ የሆነ የግብር ስጋ ግንኙነትን ማስወገድ 2. የሚቢያ የአካል ክፍሎች ሳይዳብሩ በአፍላ እድሜ ቀደም የግብር ስጋ ግንኙነት መጀመር 3. ኤች አይ ቪን መከላከል 4. ሲጋራ ማጨስን ማቆም 5. የሚገኝበት ካንሰርን ሊከላከል የሚያስችል ክትባት መከተብ 6. የቅድመ ካንሰር ምርመራና ህክምና ማድረግ 7. የወሊድ መቆጣጠሪያ ክኒኖችን ለረጅም ጊዜ ከ 5 አመታት በላይ አለመጠቀም 8. ከ3 ልጆች በላይ መወለድ 9. ሌላ ካለ ይገለጽ.....	

3	የሚጸን በር ቅድመ ካንሰር ምርመራ የሚፀን ካንሰርን ለመከላከል እንደሚጠቅም ያወቃሉ?	1. አዎ 2. አላወቅም	
4	የሚጸን በር ጭቅ ቅድመ ካንሰር ምርመራ የሚፀን ካንሰርን ከፍተኛ ደረጃ ሳይደርስ ለማስምደጠቅማል	1. አዎ 2. አላወቅም	
5	የሚጸን በር ጭቅ ቅድመ ካንሰር ምርመራ በሽታውን ቀድሞ ለማወቅ እንደሚጠቅም ያወቃሉ?	1. አዎ 2. አላወቅም	
6	የሚጸን በር ጭቅ ካንሰር ቀድሞ ከታወቀ ማየን ይቻላል;	1. አዎ 2. አላወቅም	
7	የሚፀን በር ቅድመ ካንሰር ምርመራ እንዳለ መረጃ የት ሰማመረጃ የት አገኙ?	1. ከጓደኛየ 2. ከቤተሰብ 3. ከጠፍ ባላማየ 4. ከብዙሀን መገናኛ 5. ሌላ ካለ ይገልጽ.....	
8	በወጣትነት ጊዜ ቀድሞ የግብረ ስጋ ግንኙነት መጀመር ለሚፀን ጭቅ ካንሰር የመዳረግ እድል እንደሚጨምር ያወቃሉ?	1. አዎ 2. አላወቅም	
9	ሴተኛ አዳሪዎች የሚፀን ጭቅ ቅድመ ካንሰር ምርመራ መቼ ማድረግ እንዳለባቸው ያወቃሉ(ከስንት አመታቸው ጀምሮ)	1. አዎ 2. አላወቅም	
10	የሚፀን በር ካንሰር በግብረ ስጋ ግንኙነት እንደሚከላከል ያወቃሉ	1. አዎ 2. አላወቅም	

III. የሴተኛ አዳሪዎችን የሚፀን በር ቅድመ ካንሰር ለመመርመር ያላቸውን አመለካከት ለመለካት የተዘጋጀ መጠይቅ

#	አመለካከትን ለመለካት የተዘጋጀ መጠይቆች	ጥሩ አመለካከት ያላቸው		ጥሩ አመለካከት የላቸውም		
		በጣም እስማማለሁ =5	እስማማለሁ =4	ሀሳብ የለኝም =3	አልስማማም =2	በጣም አልስማማም =1
1	የሚፀን በር ካንሰር መከላከል የሚቻል በግብረ ስጋ ግንኙነት የሚከላከል በሽታነት ወ፡					
2	የሚፀን በር ካንሰር ምርመራ ህመም አለው፡					

3	የግንባታው በር ካንሰር ምርመራው ማድረግ የግንባታው በር ካንሰርን ለመከላከል ይጠቅማል፡፡					
4	የግንባታው በር ካንሰር ምርመራ ማድረግ ለሚመረመሩ ሰዎች ጉዳት አለው፡፡					
5	ሁሉም ሴቶች አዳሪዎች የግንባታው በር ካንሰር ምርመራ መመርመር አለባቸው፡፡					
6	የግንባታው በር ካንሰር ምርመራ አገልግሎት የግብረ ሰጋ ግንኙነት የጀመሩ ሴቶች ሁሉ መመርመር አስፈላጊ ነው፡፡					
7	ከዚህ በኋላ የግንባታው በር ካንሰር ምርመራ ለማድረግ ዝግጁ ነኝ፡፡					
8	አንዲት ሴት የግንባታው ንፅህናዋን ከጠበቀችና በአንድ የወንድ ጓደኛ የተወሰነች ከሆነች የግንባታው በር ካንሰር ምርመራ መመርመር አያስፈልጋትም፡፡					
9	የግንባታው በር ካንሰር ለመመርመር ሳስብ ጥሩ ስሜት አይሰማኝም፡፡					
10	የግንባታው በር ካንሰር የሴትን ልጅ ለከፍተኛ አደጋ የሚደርግ በሽታ ነው፡፡					

IV. ከተዋልዶ ጤና ጋር የተያያዙ ለግንባታው በር ካንሰር ምርመራ ምክንያቶችን ለማወቅ የተዘጋጀ መጠይቅ

ተ.ቁ	መጠይቅ	አሚራጮች		
1	ከዚህ በፊት በወሊድም ሆነ በሌላ ምክንያት የግንባታው በር ምርመራ ተደርጎ ልሽ ያወቃል	1.አዎ 2.አላወቅም		
2	የአባላዘር በሽታ ህመም አሞሽ ተመርምረሽና ታክመሽ ታወቁያለሽ	1. አዎ 2.አላወቅም		

V. የሴቶች አዳሪዎችን የግንባታው በር ካንሰር ምርመራን በተመለከተ የአገልግሎት መስጫ ተቋማት ጋር ተያያዥ ምክንያቶችን ለማወቅ የተዘጋጀ መጠይቅ

ተ.ቁ	መጠይቅ	መልስ	
1	በአመት ስንት ጊዜ የህክምና ተቋማትንና የጤና ባለሙያዎችን ጎብኝተሻል?	----- -	

2	ወደ ህክምና ተቋም በምትሄጁ ሰዓት ከህክምና ባለሙያ ጋር ስለ ማህፀን ጭቆና ቅድመ ካንሰር ምርመራ ተወያይታችሁ ታወቃላችሁ?	1.አዎ 2.አላወቅም	
3	የማህፀን በር ቅድመ ካንሰር ምርመራ አገልግሎቱን ለመግኘት አገልግሎቱ የሚሰጥበት ሰዓት ለእርስዎ ምን ያህል ነው?(መልስዎ አዎ ከሆነ ወደ ተራቁጥር 5 ጥያቄ ይለፉ)	1. አዎ ምን ያህል ነው 2. ምን ያህል አይደለም	ምን ያህል ካልሆነ ወደ ቀጣይ
4	አገልግሎቱ የሚሰጥበት ሰዓት ለእርስዎ ምን ያህል ካልሆነ ለእርስዎ አገልግሎት ለመግኘት ምን ያህል የሚሆን ውስንነት ሰዓት ቢሆን ነው	-----	
5	የማህፀን በር ቅድመ ካንሰር ምርመራ ተመርምረው የሚያወቁ ከሆነ ምክንያቱ ምን ያህል ነው? (ከአንድ በላይ አሜሪካውያን ጥያቄ ይጻፉ)	1. የምርመራ አገልግሎት የሚሰጡት ሰዓት ምን ያህል ነው 2. አሞኝ ስለማይወቅ መመርመሩ አስፈላጊ ስላልሆነ 3. መመርመር እንዳለብኝ ከጠፎ በለመዎዎች በኩል መረጃ ስላልተሰጠኝ 4. ተመርምሮ ቢኖርብኝ ወጠቱን ስለምራራ 5. ጊዜ ስለማይገኝ 6. የጓደኛ ተፅዕኖ	

ስለትብብርዎ ከልብ እና መስግናለን !!

ANNEX IV DECLARATION FORM

Declaration

I, the under signed, declared that this is my original work, has never been presented in this or any other University, and that all the resources and materials used for the research, have been fully acknowledged.

Principal investigator

Name: Mebratu Enthabu Kassa (BSC in PH)

Signature: _____

Date: 21/07/22

Advisors

Name: **Yared Mulu (PhD fellow, Assistant Professor of PH)**

Signature: _____

Date : 21/07/22

Name: **Getasew Taddesse** (Assistant Professor of PH Economics)

Signature: _____

Date: 21/07/22

THESIS DECLARATION FORM

BAHIGAR UNIVERSITY COLLEGE OF MEDICINE AND HEALTH
SCHOOL OF RESEARCH AND GRADUATE STUDIES
SCIENCES, SCHOOL OF HEALTH SYSTEMS MANAGEMENT & HEALTH
(DEPARTMENT OF ECONOMICS)

THESIS APPROVAL SHEET

Student Name: Mebratu Enthabu Kassa (BSC in PH) Signature:  Date 16/12/14EC

The following graduate faculty members certify that this student has successfully presented the necessary written final thesis & oral presentation for partial fulfillment of the thesis requirement for the degree of masters of public health in **General Master's in Public Health**.

Approved by;

Advisors name:

1. Mr. Yared Mulu (PhD fellow, Assistant Professor of PH)

Signature:  Date: 16/12/14EC

2. Mr. Getasew Tadesse (Assistant Professor of PH Economics)

Signature:  Date: 16/12/14EC