# DETERMINANTS OF SCREENING PRACTICE FOR CERVICAL CANCER AMONG WOMEN IN ADDIS ABABA, ETHIOPIA

by

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# DECLARATION

I declare that **DETERMINANTS OF SCREENING PRACTICE FOR CERVICAL CANCER AMONG WOMEN IN ADDIS ABABA, ETHIOPIA** is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

I further declare that I submitted the dissertation to originality checking software and that it falls within the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at Unisa for another qualification or at any other education institution.

13 November 2020

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**SIGNATURE** **DATE**

Seble Tiku Ayka

**DETERMINANTS OF SCREENING PRACTICE FOR CERVICAL CANCER AMONG WOMEN IN ADDIS ABABA, ETHIOPIA**

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# ABSTRACT

Cervical cancer is the second most commonly diagnosed cancer and the third leading cause of cancer death among women in less developed countries. Screening for cervical cancer is the most accepted and successful strategy for cervical cancer control.

The purpose of the study was to investigate factors that determine cervical cancer screening practice among women in Addis Ababa, Ethiopia and develop guidelines to improve the utilisation of cervical cancer screening services.

The researcher used the health belief model (HMB) as the theoretical foundation of the study and a convergent parallel mixed methods design. Quantitative data was obtained from screened and not screened women attending maternal health services at selected public health centres. Statistical Package for Social Sciences (SPSS) Version 23 was used for entry and analysis of data Qualitative data was obtained in key informant interviews from health service professionals on their perceptions of women's cervical cancer screening uptake at the health centres.

The study found that higher age >35 years category ($X^2$=33.618 and p-value <0.001), contraceptive use ($X^2$value=20.7 and p-value <0.001), having two or more children, and knowledge of cervical cancer and screening (chi-value $X^2$=51.649, p-value=0.001) were strongly associated with screening practice. In addition, women's perception of susceptibility (t-test=3.42 and 3.432, p-value=0.001) was a predictor of screening. Lack of awareness was a serious barrier to cervical cancer screening and health service providers' information was a strong promoter of screening.

The study recommends promoting and facilitating health education on cervical cancer at all health facilities; organising awareness campaigns, education programmes, and

community mobilisation to raise awareness of cervical cancer screening; integrating cervical cancer screening with other reproductive health services, and capacitating the health professionals in order to increase utilisation of cervical cancer screening services.

Consequently, the researcher used the findings of the study to develop guidelines to improve the uptake and quality of cervical cancer screening services.

**Keywords**

Cervical cancer ; Determinants; Ethiopia; Screening practice; Women.

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# DEDICATION

*This work is dedicated to:*

*My family, Askale Gobena, Daniel Lakew, Tesemash Nigatu and Teklehaimanot Abayneh*

*All health workers who are fighting COVID-19*

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## LIST OF ABBREVIATIONS

| | |
|---|---|
| AIDS | Acquired Immune-deficiency Syndrome |
| ART | Antiretroviral Therapy |
| CC | Cervical Cancer |
| CDC | Centres for Disease Control and Prevention |
| CKC | Cold Knife Colonisation |
| CSA | Central Statistics Agency |
| ECC | Endo Cervical Curettage |
| ESMO | European Society for Medical Oncology |
| FDRE | Federal Democratic Republic of Ethiopia |
| FIGO | Federation of Gynaecology and Obstetrics |
| FMOHE | Federal Ministry of Health Ethiopia |
| HBM | Health Belief Model |
| HCA | Hybrid Capture Assay |
| HCs | Health Centres |
| HIV | Human Immunodeficiency Virus |
| HPV | Human Papilloma Virus |
| LBC | Liquid Based Cytology |
| LEEP | Loop Electrosurgical Excision Procedure |
| OCs | Oral Contraceptives |
| Pap | Papanicolaou |
| SPSS | Statistical Package for Social Sciences |
| STI | Sexually Transmitted Infection |
| TASH | Tikur Anbesa Specialized Hospital |
| VIA | Visual Inspection with Acetic acid |
| VILI | Visual Inspection with Lugol’s Iodine |
| WHO | World Health Organization |

# CHAPTER 1

# ORIENTATION TO THE STUDY

## 1.1 INTRODUCTION

Cancer is one of the leading causes of morbidity and mortality worldwide and most deaths from cancer occur in low- and middle-income countries (Ferlay, Soerjomataram, Ervik, Dikshit, Eser, Mathers, Rebelo, Parkin, Forman & Bray 2012:E359; Bray, Ferlay, Soerjomataram, Siegel, Torre & Ahmedin 2018:394). Cervical cancer is the fourth most frequently diagnosed cancer and the fourth leading cause of cancer death in women, with with the vast majority of these countries found in sub-Saharan Africa. Cervical cancer kills an estimated 342,000 women with 604,000 new cases worldwide in 2020. Sub-Saharan Africa has the highest regional incidence and mortality, with rates particularly high in Eastern Africa, Southern Africa, and Middle Africa. The rate of occurrence is 7 to 10 times higher than in Northern America (Sung, Ferlay, Siegel, Laversanne, Soerjomataram, Jemal & Bray 2021:231).

In Sub-Saharan Africa very few women have ever been screened for cervical cancer. Routine cervical cancer screening and early treatment can prevent up to 80% of cervical cancer if abnormalities of the cervix are identified at stages when they can be easily treated. The World Health Organization (WHO) (2014a:131) recommends screening for all women aged 30 to 49 years to identify precancerous lesions, which are usually asymptomatic. The human papilloma virus (HPV) vaccination is vital but does not replace the necessity of cervical cancer screening and early treatment in women (WHO 2014b:465). Aging and risk factors, such as smoking, obesity, physical inactivity, and reproductive behaviours, increase the burden of cervical cancer. Population growth is estimated to increase considerably by the year 2030 and cervical cancer is predicted to be a progressively significant cause of morbidity and mortality (WHO 2016:9).

In Kisimu, Kenya and Zimbabwe, socio-demographic characteristics, such as age, marital status, parity, education level, awareness of cervical cancer and of cervical cancer screening, knowledge of prevention of cervical cancer, and perception of higher susceptibility for cervical cancer, determined cervical cancer screening uptake among

women (Morema, Atieli, Onyango, Omondi & Ouma 2014:335; Mupepi, Sampselle & Johnson 2011:948).

In Ethiopia, the most prevalent cancers among the adult population are breast cancer (30.2%), cancer of the cervix (13.4%) and colorectal cancer (5.7%). Approximately two-thirds of reported annual cancer deaths occur among women (FMOH 2015b:14).

In 2015, the Federal Ministry of Health (FMOH) introduced a cancer control strategy and the *National health sector transformation plan, 2015-2020* for Ethiopia. To address the issue of reproductive tract cancers, cervical cancer diagnosis and treatment services were introduced (FMOH 2015a: 8). The cervical cancer screening services were free of charge in government health facilities and women could utilise services through self-referral, referral by health extension workers, and referral by other health care professionals (nurses, midwives, doctors and public health professionals). Local and national media also disseminated information regarding cervical cancer (FMOH 2015a:6).

## 1.2 BACKGROUND TO THE PROBLEM

In Ethiopia, cervical cancer is the second leading cancer among women. Approximately 6,294 new cases are diagnosed with about 4,884 cervical cancer deaths annually (Bruni, Albero, Serrano, Mena, Gómez, Muñoz, Bosch & De Sanjosé 2019:6).

Public health systems in the country have conventionally concentrated on the control of communicable diseases, not non-communicable diseases (NCDs). Non-communicable diseases, including cancer, have only received attention as public health issues since the introduction of the national health sector transformation plan (HSTP), 2015-2020 and the Ethiopian national cancer control plan (FMOH 2015a:2; 2015b:15). The silent epidemic of NCDs has placed a double burden of disease on the country that threatens to overwhelm it unless addressed.

About 80% of reported cases of cancer are identified at advanced stages at the only oncology centre in the country, the Tikur Abessa (Black Lion) Specialized Hospital (TASH) (FMOH 2015b:14). This is largely due to low awareness of cancer signs and symptoms, insufficient screening and early detection and cancer management services,

insufficient diagnostic facilities, and poorly structured referral systems. The reason for this is that the cancer treatment set-up in Ethiopia is inadequate and cancer management opportunities are not well established within the health care system. Cancer is treated with medical, surgical or radiation therapy (FMOH 2015b:15).

## 1.3 STATEMENT OF THE PROBLEM

Most people with cervical cancer in developing countries, including Ethiopia, present late with advanced stage, at which time management treatment may involve multiple modalities, such as surgery, radiotherapy, and chemotherapy, which would lessen chances of success. In Ethiopia, the oncology unit at the Tikur Anbessa (Black Lion) Specialized Hospital (TASH), in Addis Ababa, is the only oncology unit for the country. In a retrospective review of cancer cases registered at TASH between 1997 and 2012, Abate (2015:104) found that 5,293 were cervical cancer cases. The study found that new cases had increased between 1997 and 2012; the peak age of incidence was 40-49 years; the number of cases per region depended on their distance from Addis Ababa, and Addis Ababa, Oromia, and Amhara had the highest numbers (Abate 2015:104). Several factors, such as low level of awareness, educational status, financial capability and presence of health care facilities, determine the stage at which patients with cancer present to the health facility.

Screening for cervical cancer is the most accepted and successful strategy for cervical cancer control (Habtu, Yohannes & Laelago 2018:256). When cervical cancer is found early, it is highly treatable and associated with long survival and good quality of life (Centres for Disease Control and Prevention 2017a:1). Well-organised screening is cost-effective as well as a proven strategy in terms of its effectiveness in reducing the incidence and mortality of cervical cancer, but is underutilised by women who most need it. Low coverage of cervical cancer screening is a serious problem and a major barrier to reducing the mortality and morbidity in developing countries (Campos, Sharma, Clark, Lee, Geng, Regan, Kim & Resch 2016:3).

Early detection of cervical cancer can easily be made by an examination of swabs or smears from the cervix surface, which could be done at a gynaecological examination. If identified early, treatment and management of cervical cancer is simple, uncomplicated and effective. Therefore, the main risk factor for life-threatening cervical cancer is failing

to have regular periodical screening (Marth et al 2017:5). Ethiopia coverage of screening for cervical cancer has been very low the estimated coverage of cytology-based cervical cancer screening in Ethiopia was 1.6% in urban settings and 0.4% in rural areas (FMOH 2015b:10). Strategies are needed to increase the number of women who attend screening.

This study investigated factors that affected cervical cancer screening practice among women in Addis Ababa, reasons for non-utilisation, and health professionals' perceptions of women's utilisation of cervical cancer screening. Based on the findings the researcher wished to develop guidelines to assist in promoting women's screening practice for cervical cancer.

## 1.4 PURPOSE OF THE STUDY

The purpose of the study was to investigate factors that determine cervical cancer screening practice among women in Addis Ababa, Ethiopia and develop guidelines to improve the utilisation of cervical cancer screening services.

### 1.4.1 Research objectives

Phase 1: Quantitative approach

- Identify and discuss the determining factors of screening practice for cervical cancer among women in Addis Ababa, Ethiopia.

Phase 2: Qualitative approach

- Explore and describe health professionals' perceptions of cervical cancer screening utilisation among eligible women in Addis Ababa, Ethiopia.

Phase 3: Based on the finding

- Develop guidelines to improve the utilisation of cervical cancer screening by women in Ethiopia based on the finding.

### 1.4.1 Research questions

In order to achieve the purpose and objectives, the study wished to answer the following questions:

Phase 1: Quantitative

- What are determining factors related to screening for cervical cancer among women in Addis Ababa, Ethiopia?

Phase 2: Qualitative

- What are health professionals' perceptions of cervical cancer screening utilisation among eligible women in Addis Ababa, Ethiopia?

Phase 3:

- What guidelines can be developed for health professionals, planners and policymakers to promote utilisation of cervical cancer screening services among women in Ethiopia?

## 1.5 SIGNIFICANCE OF THE STUDY

The study focused on identifying determining factors for cervical cancer screening by eligible woman in Addis Ababa where cervical cancer screening service is available. The findings provided information on women's knowledge and practices that affect utilisation of cervical cancer screening in order to detect the presence of disease at an early stage. The participant health care providers' experience and perceptions of cervical cancer screening utilisation should assist implementation of the guidelines. The guidelines should encourage compliance with screening, promote behavioural modification, and help save lives from cervical cancer.

## 1.6 THEORETICAL FOUNDATION OF THE STUDY

A framework is "an abstract, logical structure of meaning" (Burns & Grove 2011:116). The study framework is the conceptual framework and guides the development of the study.

### 1.6.1 Research paradigm

A paradigm is a framework or set of beliefs about what should be studied, what methods should be used and how data should be interpreted for gaining knowledge of the natural or social world (Saks & Allsop 2013:19). Creswell (2013:18) describes a paradigm as a way of thinking about something or a belief system that guides the way we do things, or establishes a set of practices ranging from thought patterns to action. A paradigm is a way of looking at natural phenomena that encompasses a set of philosophical assumptions and guides a researcher's approach to inquiry (Polit & Beck 2010:11). Polit and Beck (2010:15) add that paradigms are lenses that help to sharpen the researcher's focus on a phenomenon. The research paradigm and research approach are the same and may be qualitative, quantitative or mixed methods (Brink, Van der Walt & Van Rensburg 2018:55).

**Table 1.1 Overview of pragmatism**

| **Paradigm** | **Ontology**<br><br>What is reality? | **Epistemology**<br><br>How can one know reality? | **Theoretical perspective**<br><br>Which approach used to know something? | **Methodology**<br><br>How do you go about finding? | **Method**<br><br>What technique used to find out? |
|---|---|---|---|---|---|
| **Pragma-tism** | Reality is what we perceive to be real | The best method is one that solves problems<br><br>Finding out is the means, change is the underlying aim | pragmatism research through design | Mixed methods design<br><br>Action research | Combination of any of the above and more, such as data, such as data mining expert review, usability testing, physical prototype |

(Patel 2015:2017)

Table 1.1 outlines the application of pragmatism in the study. In this study, the researcher adopted pragmatism as the research paradigm. Pragmatism is a worldview or a set of assumptions about how things work; a basic set of beliefs that guide action (Creswell 2013:35). Pragmatism believes that reality is constantly renegotiated, debated, interpreted, and therefore the best method to use is the one that solves the problem. Pragmatists emphasise the research problem and use all approaches

available to understand the problem (Creswell 2013:36). Using a pragmatist paradigm, the researcher collected both quantitative and qualitative data.

### 1.6.2 Theoretical framework

The study was based on the conceptual framework of the Health Belief Model (HBM). The HBM is based on people's beliefs about whether or not they are susceptible to a disease or condition and how their perceptions of the benefits of trying to avoid it influence their readiness to act (National Cancer Institute 2005:13). Health behaviour is based on perceived threat of disease (Rosenstock, Strecher & Becker 1988:177).

The HBM is a psychological health behaviour model generated to explain and anticipate health-related behaviours, and helps clarify why individuals may accept or reject preventive health services or adopt healthy behaviours (Day, Van Dort & Tay-Teo 2010:4). Abraham and Sheeran (2015:31) state that in terms of the HBM, people's beliefs about health problems, perceived benefits of action and barriers to action, and self-efficacy explain engagement (lack of engagement) in health-promoting behaviour. A stimulus or cue to action must also be present in order to activate health-promoting behaviour.

The researcher considered the HBM appropriate for this study in order to determine women's knowledge and beliefs about cervical cancer screening (Day, Dort & Tay-Teo 2010a:102; Tavafian 2012:5; Glanz & Rimer 2008:5). The HBM has fundamental constructs: perceived susceptibility; perceived seriousness; perceived benefits; perceived barriers; cues to action, and self-efficacy (Rosenstock et al 1988:177).

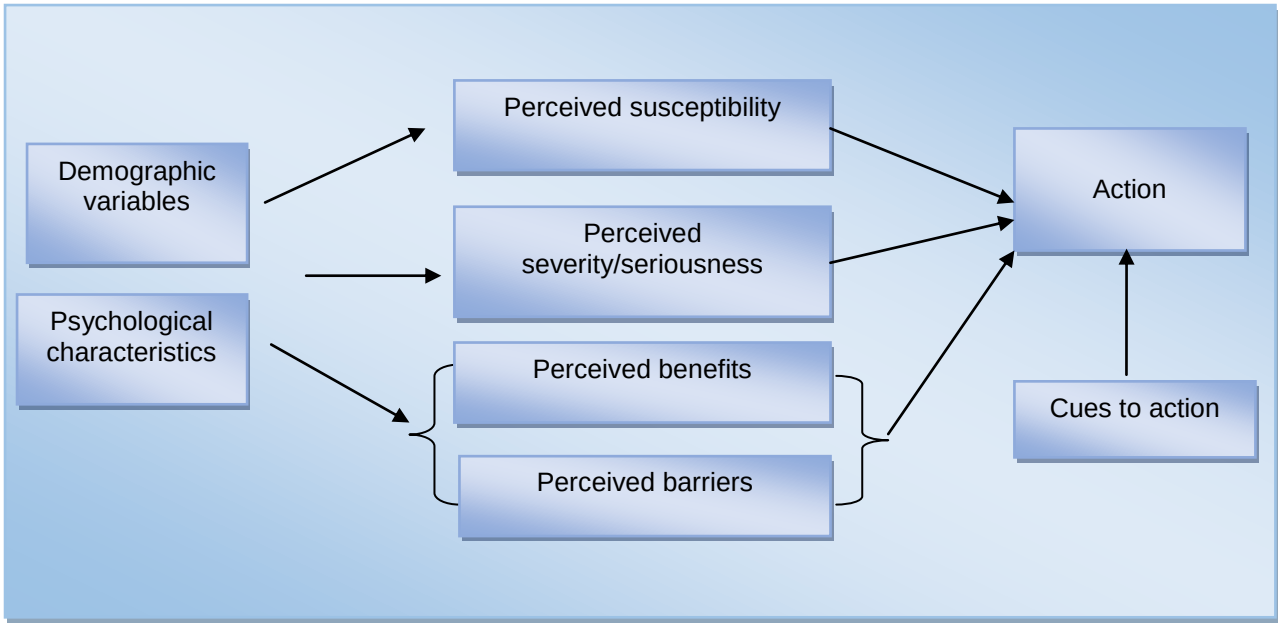


**Figure 1.1 Health belief model**

(Abraham & Sheeran 2015:32)

The HBM explains preventive health behaviours rather than behaviours in time of illness Figure 1.1 shows the health belief model. The HBM helps to clarify why individuals may accept or reject preventive health services or adopt healthy behaviours (Abraham & Sheeran 2015:32).

- **Perceived susceptibility**

Perceived susceptibility refers to subjective assessment of risk of developing a health problem. The HBM proposes that individuals who perceive a given health problem as serious are more likely to engage in behaviours to prevent the health problem from occurring (or reduce its severity) (Glanz & Rimer 2008:45). Perceived contracting a disease refers to individuals' subjective perception of their susceptibility to the disease (Day et al 2010b:4). The HBM predicts that women will be more liable to accept (the suggestion of) cervical cancer screening if they believe that they are prone to cervical cancer (Glanz & Rimer 2008:45). Individuals who believe they have risk factors for developing cervical cancer and perceived susceptibility to an illness are more likely to take action to prevent a negative health outcome. Therefore, women must consider that there is a possibility of contracting cervical cancer before they will undergo a screening test.

- **Perceived severity**

Perceived severity refers to the individual's assessment of the severity of a health problem and its potential consequences (Rosenstock 1974:328). The HBM holds that individuals who perceive that they are susceptible to a particular health problem will engage in behaviours to reduce their risk of developing the condition. Individuals' perception or evaluation of the severity of a health problem and acquiring an illness, or of leaving it untreated and the possible consequences affect health behaviour. Consequently, if women think that cervical cancer is a severe disease and believe that getting cervical cancer would have serious medical, social and economic consequences for them, they are more likely to undergo cervical cancer screening (Tavafian 2012:5).

- **Perceived benefit**

Perceived benefit refers to individuals' assessment of the value or efficacy of engaging in a health-promoting behaviour to decrease risk of disease. Health-related behaviours are influenced by the perceived benefits of taking action (Glanz & Rimer 2008:45). If individuals believe that a particular action will reduce their susceptibility to a health problem or decrease its seriousness, they are likely to engage in that behaviour regardless of the effectiveness of the action. Individuals who believe they are susceptible to a disease and that it is severe will take health action if they also perceive the action as potentially beneficial by reducing the threat (Tavafian 2012:5). Therefore, women must accept that a course of protective behaviours for cervical cancer would be beneficial in decreasing the risk of acquiring it.

- **Perceived barriers**

Perceived barriers refer to individuals' evaluation of the difficulties to behaviour modification (Glanz & Rimer 2008:48). Perceived barriers refer to the cost of taking action and individuals must believe the cost is outweighed by the benefits (Tavafian 2012:6). Thus, the joint action of susceptibility and severity offer the energy of power to take action and the perception of benefits gives an extended path of action (Glanz & Rimer 2008:45). Therefore, if women believe that the predictable benefit of carrying out behaviours to prevent cervical cancer exceed the barriers to or cost of the preventive

behaviours, they are more likely to undergo cervical cancer screening (Tavafian 2012:6).

- **Modifying variables**

Individual characteristics, including demographic, psychological and structural variables, can affect perceptions of seriousness, susceptibility, benefits, and barriers of health-related behaviours (Rosenstock 1974:328*).* Demographic variables include age, sex, race, ethnicity, and education; psychosocial variables include personality, social class, and peer and reference group pressure; structural variables include knowledge about a given disease and prior contact with the disease. These modifying variables can affect health-related behaviours indirectly either by mediating or moderating the key HBM constructs by affecting perceived seriousness, susceptibility, benefits, and barriers (Glanz, Rimer & Viswanath 2015:75). Tavafian (2012:10) states that race; knowledge, education and demographic, socio-psychological, cultural, and structural variables may influence perception and indirectly affect health-related behaviour. Thus, socio-demographic factors may indirectly impact individuals' behaviour of cervical cancer screening by influencing their perception of susceptibility to the disease, severity of the disease and benefits of screening.

- **Cues to action**

The HBM holds that a cue or trigger is necessary for timely involvement in health-promoting behaviours. Readiness to action (perceived susceptibility and perceived benefits) is prompted by other factors or cues to initiate action (Glanz & Rimer 2008:49). Cues to action are events, or environmental events such as media publicity that move people to change their behaviour (Tavafian 2012:7). Thus, women would be more likely to take preventive action of cervical cancer screening if they were encouraged or reminded by family members, friends, mass media or heath care service providers.

According to the HBM (Rosenstock et al 1988:177), people (in this study, women) are ready to act if:

- They believe they are susceptible to the condition (*perceived susceptibility* to cervical cancer).

- They believe the condition has serious consequences (*perceived severity* of contracting cervical cancer).
- They believe taking action will reduce their susceptibility to the condition or its severity (*perceived benefits* of cervical cancer screening). Health-related behaviours are influenced by the perceived benefits of taking action (Glanz & Rimer 2008:45).
- They believe the cost of taking action (*perceived barriers*) is outweighed by the benefits.
- They are exposed to prompt actions (*cues to action* in preventing the disease and prompting recovery, diagnosis and effective treatment of cervical cancer).
- They are confident in their ability to successfully perform an action (*self-efficacy*). Individual characteristics, including demographic, psychological, socio-cultural, education, and structural variables, may influence perception and thus indirectly affect the health-related behaviour (Day et al 2010a:102; Tavafian 2012:5).

## 1.7 RESEARCH DESIGN

A research design is the overall plan for addressing a research question, including the specifications for enhancing the integrity of the study (Polit & Beck 2014:741). Grove, Burns and Gray (2013:214) refer to a research design as a blueprint for carrying out a study that takes advantage of control over factors that could interfere with the validity of the findings.

Study designs are types of inquiry that provide precise direction for procedures in a research design, it is a technique used to gather information to resolve research problems including qualitative, quantitative, and mixed methods techniques (Creswell 2013:41). According to Creswell (2017:32), a study may be more qualitative than quantitative, or vice versa, Mixed methods research falls somewhere in the middle of this spectrum because it combines elements of both qualitative and quantitative approaches. The researcher selected a mixed methods research design for the study in order to collect quantitative and qualitative data.

**Mixed methods design.** According to Creswell (2013:32), mixed methods studies investigate quantitative and qualitative data, integrating the two forms of data. The field of mixed methods research is relatively new with major work in developing it stemming from the middle to late 1980s (Creswell 2013:43).

Many designs exist in the mixed methods, the convergent parallel design, the explanatory sequential design, the exploratory sequential design**,** the embedded design**,** the transformative design and the multiphase design. The way in which this data is combined will depend upon the nature of the inquiry and the philosophical outlook of the person conducting the research (Creswell 2013:44).

**Convergent parallel design** is a form of mixed methods design in which the researcher converges or merges quantitative and qualitative data in order to provide a comprehensive analysis of the research problem. In this design, the investigator typically collects both forms of data at roughly the same time and then integrates the information in the interpretation of the overall results. Contradictions or incongruent findings are explained or further probed in this design (Creswell 2013:44).

According to Creswell (2013:44), **explanatory sequential design** is one in which the researcher first conducts quantitative research, analyses the results, and then builds on the findings to explain them in more detail with qualitative research. It is considered explanatory because the initial quantitative data results are explained further with the qualitative data. It is considered sequential because the initial quantitative phase is followed by the qualitative phase.

**The exploratory sequential approach** starts with a qualitative research phase in which the researcher explores the views of participants (Creswell 2013:44). The data is then analysed, and the results are used to construct a second, quantitative phase. The qualitative phase may be used to develop an instrument that is best suited to the sample under study, to identify appropriate instruments for use in the follow-up quantitative phase, or to identify variables that must be included in a follow-up quantitative study. Particular challenges to this design reside in focusing in on the appropriate qualitative findings to use and the sample selection for both phases of research (Creswell and Plano Clark 2011:84).

**Embedded design,** as to Creswell (2013:44) state, the intent is to collect quantitative and qualitative data concurrently or sequentially, with one type of data acting as a support for the other. The reason for collecting the second form of data is that it

arguments or supports the primary form of data. The supportive data may either qualitative or quantitative.

**Transformative mixed methods design** is one that incorporates a theoretical lens based on social justice or power as an overarching perspective into a design that includes both quantitative and qualitative data. In this type of research, the data might be converged or arranged consecutively, one building after the other (Creswell 2013:44).

**A multiphase mixed methods design** is common in the fields of evaluation and program interventions. In this advanced design, concurrent or sequential strategies are used in tandem over time to best understand a long-term program goal (Creswell 2013:44).

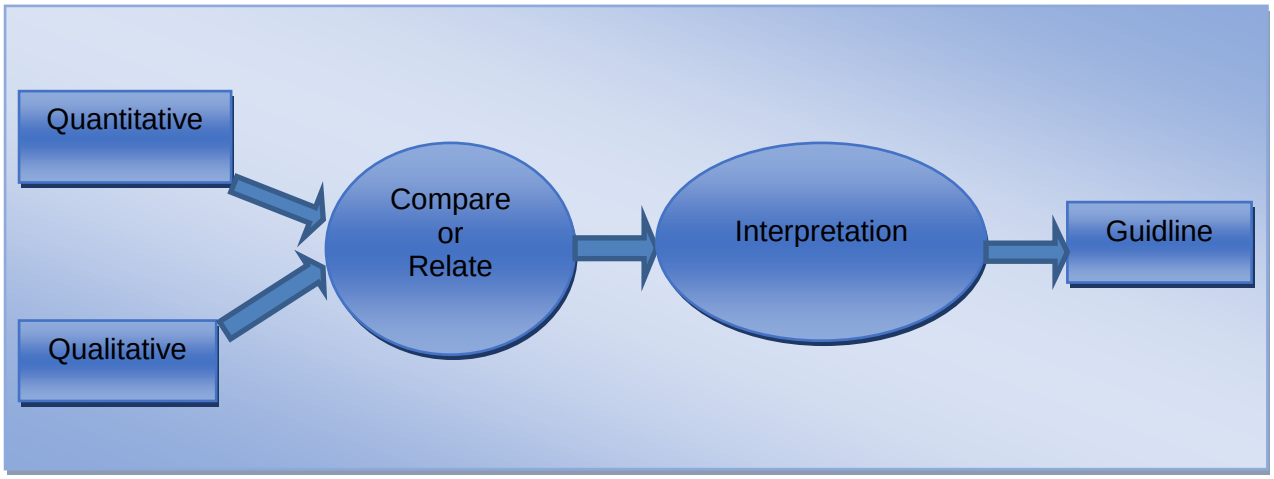


**Figure 1.2 Convergent parallel mixed method design of the study**

*Explanation of figure 1.2*

In this study, convergent parallel design was utilised. Both quantitative and qualitative research phases were administered concurrently, the finding compared or related each other and interpreted, and then the interpreted finding used to develop guidlines was developed.

**A convergent parallel mixed method**: Is a form of mixed methods design in which the researcher converges or merges quantitative and qualitative data in order to deliver a comprehensive analysis of the research problem (Creswell 2013:44).

**Quantitative**: Data collected from respodants women attending maternal health services using close ended questionnars.

**Qualitative**: Data collected from participants; the health provides using open ended questions.

**Compared or related**: Collected data from both findings compared each other.

**Interpretation**: Compared findings incorporated from both qualitative and quantitative data interpreted. In this study the women's knowledge, views and perceptions regarding cervical cancer screening compared and interpreted with the health provides's views; experiences and perception.

**Guidelines**: interpreted findings used for development of guidelines which used to improve cervical cancer screening utilisation.

The reason for using converging parallel study design in this study is, in this approach, the researcher gathers both quantitative and qualitative data simultaneously and then analyses the results compare or relate to see whether the findings validate or disprove each other. The researcher was interested in combining the strengths of quantitative and qualitative methodologies, as well as triangulating the methods to create a direct comparison and identify conflicts between qualitative and quantitative findings. (Creswell 2013:44) (see Chapter 3 for further discussion).

In this research design, the researcher typically collected both forms of data concurrently and then provided details on interpreting typical outcomes

## 1.8 RESEARCH METHODOLOGY

Research methodology is the plan for conducting the specific steps of a study and research methods are "the techniques researchers use to structure a study and to gather and analyse information relevant to the research question" (Polit & Beck 2014:741). The research methodology includes the setting, population, sampling and

sample, data collection, data analysis and interpretation, and findings. Chapter 3 discusses the research methodology in detail.

### 1.8.1 Setting

At the time of the study, 14 public health centres in Addis Ababa were providing cervical cancer screening free of charge. The study was conducted at six (6) selected public health centres that had started cervical cancer screening two years prior to data collection.

### 1.8.2 Population and sampling

The study collected quantitative data from patients and qualitative data from health care providers. Quantitative data was obtained in order to identify determinants of cervical screening practice. The population for this stage of the study was all women aged 18 years and above, screened and not screened, who attended maternal health services in the selected health centres in Addis Ababa. The researcher collected a sample from both screened and unscreened patients to allow for comparison between the two groups, using the sample size-calculation formula for sample size n. By using two proportion sample size calculations, the normal distribution at α/2 for a confidence level of 95%, for a power of 80%, ratio of sample size of group 2 to group 1 was 1.5. Using as $p_{1=}$56% assuming there is 12 difference $p_2$=44%. A group of 249 screened and 372 not screened participants were selected (Tadesse 2014:33).

Qualitative data provides culturally specific information about the values, opinions, behaviours, and social contexts of particular populations (Moriarty 2011:2; Creswell 2013:42). Qualitative data was obtained from selected health professionals (nurses, midwives, health officers) at the selected health centres by means of key informant interviews (Mack, Woodsong, Macqueen, Guest & Namey 2011:3). The purpose of the interviews was to obtain the respondents' perceptions of women's uptake of cervical cancer screening (see Chapter 3 for full discussion).

### 1.8.3 Data collection

The data was collected from the respondents at the selected health centres that provide antenatal care, family planning, immunisation, and post-natal care from December 1, to 30, 2018. The quantitative data was collected by 12 research assistants, using a questionnaire. The researcher conducted a two-day training programme with the research assistants and supervisors having informed them of the purpose of the study and the ethical considerations.

The researcher collected the qualitative data in interviews with health professional respondents at the selected health centres, using a semi-structured interview guide.

### 1.8.4 Data analysis

A statistician analysed the quantitative data, using the Statistical Package for Social Sciences (SPSS) Version 23. Bi-variate analysis was performed to assess statistical associations depending on variable and to identify factors significantly associated with uptake of cervical cancer screening. The level of statistical significance was set at $p$ value less than 0.05 and results presented in graphs, percentages and tables (see Chapter 3).

The researcher analysed the qualitative data by reading, categorising, and tabulating the transcribed interviews.

Finally, based on the quantitative and qualitative findings and the literature reviewed, the researcher developed guidelines to improve cervical cancer screening in Ethiopia. The participant health care providers' experience and perceptions of cervical cancer screening utilisation should assist implementation of the guidelines. The guidelines should encourage compliance with screening, promote behavioural modification, and help save lives from cervical cancer. The guidelines are designed to inform policies, strategies and operating procedures thereby assisting health professionals.

## 1.9 SCOPE OF THE STUDY

The study was conducted in selected public health centres in Addis Ababa with women, 18 years and older, who attended maternal health services, and nurses, midwives and health officers who worked in maternal health services in the health centres. The health care providers were the heads of each unit of maternal health services of each health centre, namely pre-cervical screening, family planning, abortion, ANC, childbirth and post-natal units.

The study explored and described the respondents' experience and perceptions of cervical cancer screening service utilisation. The study identified factors contributing to low utilisation of services and developed guidelines to improve the utilisation of cervical cancer screening services in Ethiopia.

## 1.10 DEFINITION OF KEY TERMS

For the purposes of this study, the following key terms are used as defined below.

**Cervical cancer**: The Centres for Disease Control and Prevention (CDC 2017a:1) defines cervical cancer as one type of cancer in the lower, narrow uterine cells that link to the vagina, which occurs in the cervix cells. This is a disorder in which cervical cells are dysfunctional and continue to develop uncontrollably.

In this study, cervical cancer referred to a cervical lesion that was confirmed pathologically in the women aged 18 and above who participated in the study.

**Determinants:** Dicker and Coronado (2012:2) define determinants as the range of factors or causes, whether incidents, feature, or other definable entity, that affects the health condition of subjects. *Collins English Dictionary* (1991:430) defines *determinant* as "1 (adj) serving to determine or affect; 2 (n) a factor, circumstance, etc that influences or determines".

In this study, determinants referred to all factors (demographic, social, economic, cultural, psychological and environmental) or conditions that hinder awareness, knowledge and perception, prevent or avoid acceptance for undergoing cervical cancer

screening or promote acceptance for undergoing cervical cancer screening among women.

**Ethiopia**: Ethiopia is the oldest independent and second most populous country in Africa. It has a unique cultural heritage with a diverse population mix of ethnicity and religion. It served as a symbol of African independence throughout the colonial period, and was a founding member of the United Nations and the African base for many international organisations (FMOH 2015a:18).

**Screening**: *Mosby's Medical and Nursing Dictionary* (1988:1017) defines *screening* as "(1) a preliminary procedure, as a test or examination, to detect the most characteristic sign or signs of a disorder that may require further investigation; (2) the examination of a large sample of a population to detect a specific disease or disorder, as hypertension". *Collins English Dictionary* (1991:1391) defines *screen* as "(vb tr) to examine for the presence of a disease, weapon, etc" and *screening test* as "(n) a simple test performed on a large number of people to identify those who have or are likely to develop a specific disease".

In this study, screening referred to women, 18 years of age and older, who had undergone some sort of screening test for cervical cancer once in their lifetime, regardless of the outcome, whether positive or negative.

**Practice**: The *Oxford Advanced Learner's Dictionary* (2010:1148) defines *practice* as "a way of doing something that is the usual or expected way in a particular organisation or situation; a thing that is done regularly". *Collins English Dictionary* (1991:1221) defines *practice* as "(n) a usual or customary action or proceeding".

In this study, practice referred to the established customs of women in the community, aged 18 and older, in relation to preventive behaviour by participation in cervical cancer screening tests.

**Woman**: *Collins English Dictionary* (1991:1764) defines *woman* as "(n. pl women) an adult female human being".

In this study, women referred to adult human beings, biologically female, aged 18 and above, who attended maternal health services in the selected health centres in Addis Ababa. The women might have had cervical cancer screening or not in their lifetime.

## 1.11 OPERATIONAL DEFINITIONS

In this study the following terms were operationally defined as follows:

**Awareness**: *Collins English Dictionary* (1991:106) defines *aware* as "(adj) (1) having knowledge; cognizant; (2) informed of current developments; awareness (n)". In this study, *awareness* referred to concern about and well-informed interest in cervical cancer screening.

**Guideline**: *Collins English Dictionary* (1991:689) defines *guideline* (pl guidelines) as "a principle put forward to set standards or determine a course of action". In this study, guidelines referred to the recommendations to determine a course of action to improve the utilisation of cervical cancer screening services.

**Health centre**: *Collins English Dictionary* (1991:717) defines *health centre* as "(n) premises, owned by a local authority, providing health care for the local community and usually housing a general practice, nursing staff, a child-health clinic, etc". In this study, health centres referred to the selected health centres/ health facilities within the primary health care (PHC) system that provide promotive, preventive, curative and rehabilitative outpatient care, including basic laboratory and pharmacy services. Health centres serve as referral centres for health posts, and provide supportive supervision for health extension workers (HEWs).

**Health professionals**: *Mosby's Medical and Nursing Dictionary* (1988:513) defines a *health professional* as "any person who has completed a course of study in a field of health, such as a registered nurse, physical therapist, or physician. The person is usually licensed by a government agency or certified by a professional organization." In this study, health professionals referred to persons who provided maternal health services as physicians, midwives, nurses, and health officers at the selected health centres.

**Knowledge**: In this study, knowledge referred to the patients' ability to correctly identify cervical cancer symptoms, causes, risk factors, prevention and treatment.

**Perception**: In this study, perceptions referred to the health professionals' knowledge, understanding and observations of cervical cancer and women's participation in preventive measures particularly screening for cervical cancer.

**Utilisation of cervical cancer screening services**: In this study, this referred to the use of cervical cancer prevention and control services by eligible women through cervical cancer screening.

## 1.12 ETHICAL CONSIDERATIONS

Ethics deals with matters of right and wrong. Ethical considerations are essential to any research involving human subjects in order to protect their rights (Polit & Beck 2014:152). Human research should be intended to produce benefits for participants themselves or for other individuals or society as a whole (Polit & Beck 2014:152). Health research involves human activities which are governed by individual, community and social values. Therefore, research ethics should engage in the safety and dignity of subjects and the publication of the work in the research (Fouka & Mantzorou 2011:4).

## 1.13 OUTLINE OF THE STUDY

The study consists of seven chapters.

- Chapter 1 introduces the study, briefly describing the problem, purpose and significance, research design and methodology of the study, and ethical considerations.
- Chapter 2 discusses the literature review conducted for the study.
- Chapter 3 describes the research design and methods
- Chapter 4 discusses the quantitative data analysis and findings.
- Chapter 5 discusses the qualitative data analysis and findings.
- Chapter 6 discusses the guidelines to improve cervical cancer screening utilisation for health providers, planners and policymakers.

- Chapter 7 presents the conclusions and limitations of the study and makes recommendations for further research.

## 1.14 SUMMARY

This chapter outlines the study introduction, background, and statement of the problem, purpose of the research, research objectives, research questions, significance of the study, definition of terms, theoretical foundation of the study, research design and methodology, data analysis, ethical consideration, scope of the study and finally it shows the overall structure of the thesis. Chapter 2 discusses the literature review undertaken for the study.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 INTRODUCTION

Chapter 1 described the problem, purpose, research design and methodology of the study. This chapter discusses the literature review conducted for the study.

A literature review is conducted to establish what is currently known about a topic. The review involves researching, reading and understanding literature relevant to the study (Brink et al 2018:55). In addition, it assists researchers to broaden their knowledge of the phenomenon under study as well as to compare their results with other findings (Creswell 2013:60; Polit et al 2014:105).

Literature review is a scientific activity aiming at searching, reading, analysing, and evaluation of what is known, unknown, unrealised and gaps in the topics of the study. This involves the collection and review of documents which include evidence, ideas, information, and data on the topic of the study. Literature review also gives knowledge on the topic of the study and help identifies the gaps that should be filled by the study (Ridley, 2012:3). In this particular study, literature review focuses providing a fuller picture on PNC services, its contributions towards reducing maternal and neonatal mortality and on factors associated with its utilisation and quality

The researcher reviewed literature on cervical cancer; cervical cancer screening determinants, knowledge, perceptions and cues of cervical cancer, early detection, treatment, screening, and the health belief model (HBM). The researcher conducted the literature review manually and electronically to obtain sources relevant to the topic, using Googlescholar and pubmed, journals, books, health reports, cancer registry and guidelines/manuals, using the search words: cervical cancer, aetiology, stages, signs and symptoms, risk factors, prevention of cervical cancer, diagnosis and available screening tests, treatment, and determinant factors in the health belief model.more over, in this particular study, literature review focuses providing a fuller picture on

cervical cancer screening services, its contributions towards reducing mortality and on factors associated with its utilisation and quality

## 2.2 CERVICAL CANCER

Cancer is defined as the uncontrolled proliferation of abnormal cells in any part of the body. Cancer cells, malignant cells, or tumour cells are all terms used to describe these aberrant cells. These cells have the ability to invade regular bodily tissues (Kumary 2020:1). Cancer is mostly named for the part of the body where it starts, even if it metastasises further to other parts of body. If cancer starts in the cervix, it is called *cervical cancer* (CDC 2017a:1).

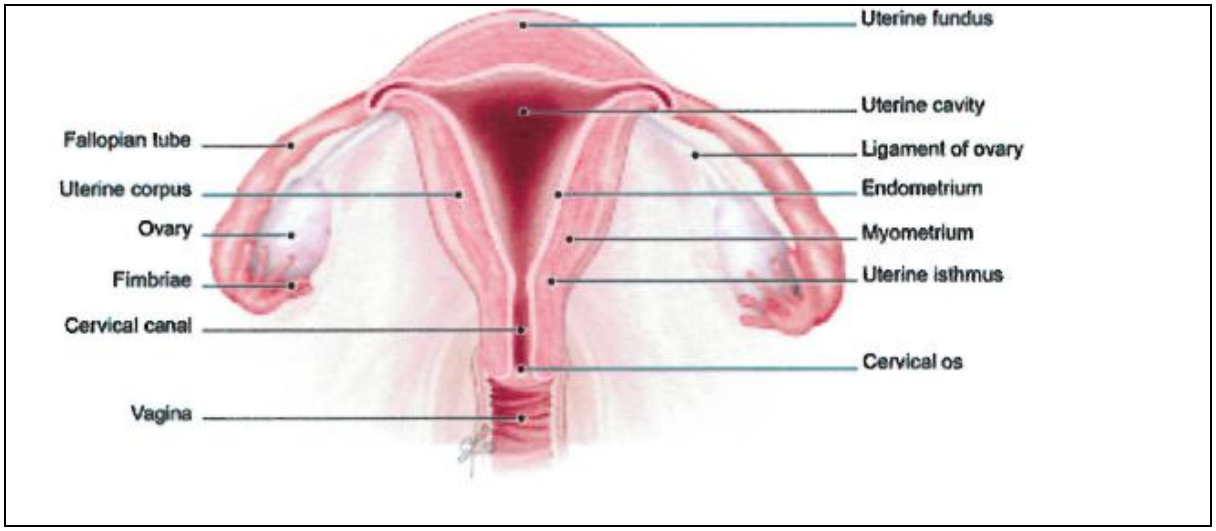


**Figure 2.1 Anatomy of female reproductive system**

(Ramírez, Vaamonde, Cunha, Varghese & Swanson 2016:22)

As figure 2.1 indicates, anatomically, the cervix is the lower, narrow end of the uterus. The cervix connects the vagina (birth canal) to the upper part of the uterus or womb. The uterus is the hollow pear-shaped internal female organ of reproduction in which the fertilised ovum is implanted and the foetus develops during pregnancy. The uterus has two parts: a body and a cervix. The cervix has a vaginal portion, protruding into the vagina, and a supra-vaginal portion at the juncture of the lower uterine segment (*Mosby's Medical and Nursing Dictionary* 1988:1173).

Although cervical cancer is a preventable disease, it is still one of the leading causes of morbidity and mortality among women in low- and middle-income countries worldwide (WHO 2014a:3).

In 2013, the highest incidence rates of cervical cancer were found in Central and South America, Eastern Africa, South and South-East Asia and the Western Pacific (WHO 2013:2). Although the incidence of cervical cancer has increased in most developing countries since the mid-1980s, cervical cancer rates have fallen in much of the developed world, largely as a result of screening and treatment programmes (WHO 2014a:8). When cervical cancer is found early, it is treatable and associated with prolonged survival and good quality of life. Through successful cancer treatment programmes, survival rates for cervical cancer can be further increased. Women die far more frequently from cervical cancer in developing countries, with the greatest burden of the disease in Sub-Saharan Africa (WHO 2013:2).

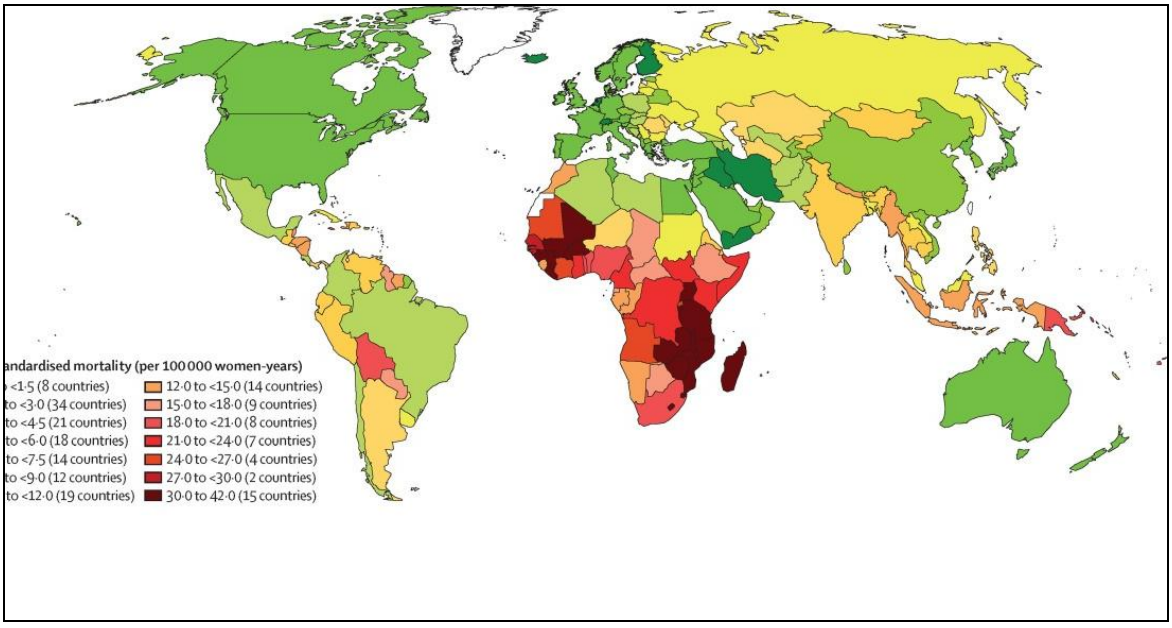


**Figure 2.2 Geographical distribution of world age-standardised mortality rate of cervical cancer by country, estimated for 2018**

(Arbyn, Weiderpass, Bruni, De Sanjosé, Saraiya, Ferlay & Bray 2020:e194)

Figure 2.2 illustrates the estimated global cervical cancer mortality incidence in 2018. Overall, the results from trends in cervical cancer incidence suggest that the incidence of Cervical Cancer is increasing in Sub-Saharan Africa (Jedy-Agba, Joko, Liu et al 2020:151).

Cervical cancer remains a major public health issue affecting middle-aged women, particularly in low-income countries. Approximately 84% of all cervical cancers and 88 % of all cervical cancer deaths occurred still in low-resource countries. In 2018, there were around 570 000 incidences and 311000 deaths occurred as a result of of cervical cancer disease (Arbyn et al 2020:e196) These figures mask a massive global disparity, with low- and middle-income countries accounting for 87 % of new cervical cancer cases and 91 % of cervical cancer deaths (LMICs).

## 2.3 SITUATION IN ETHIOPIA

In Ethiopia, the most prevalent cancers among the adult population are breast cancer (30.2%), cervical cancer (13.4%) and colorectal cancer (5.7%). Cancer accounts for about 5.8% of the total national mortality. Approximately two-thirds of reported annual cancer deaths occur among women (FMOH 2015b:14). Cervical cancer is the second leading cancer among women. Approximately 6,294 new cases are diagnosed (Bruni, Albero, Serrano, Mena, Gómez, Muñoz, Bosch & De Sanjosé 2019:6) and about 4,884 cervical cancer deaths occurred annually (Bruni et al 2019:14).

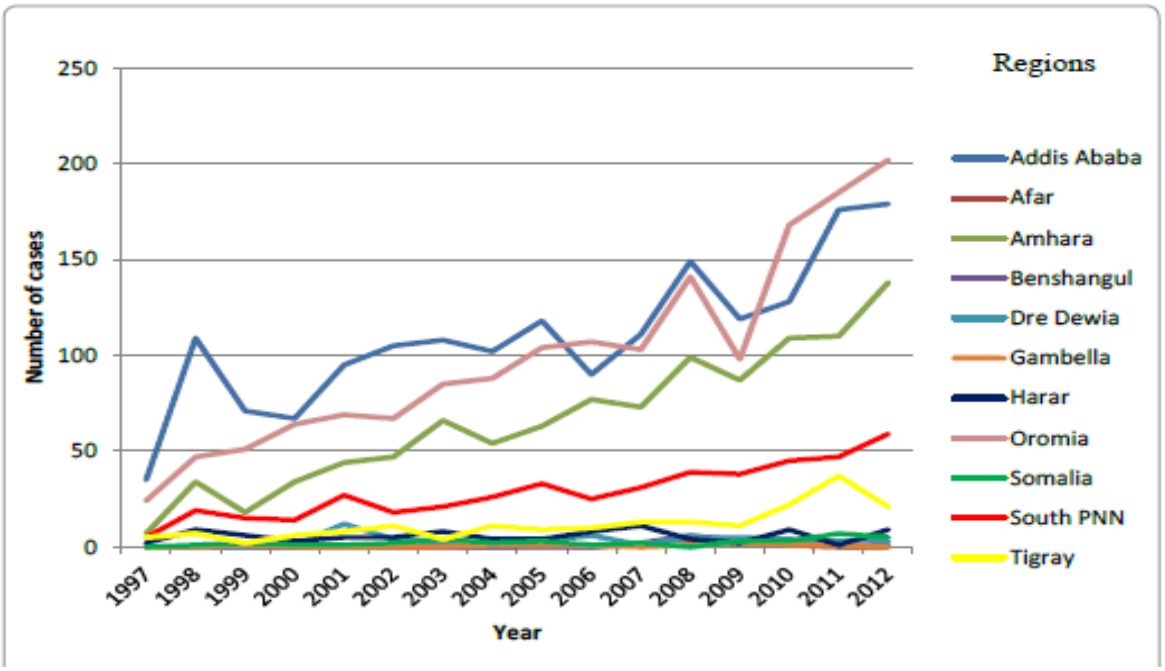


**Figure 2.3 Trends of cervical cancer in each region, 1997-2012**

(Abate 2015:104)

Figure 2.3 depicts the cancer trends between 1997 and 2012. In a retrospective review of cancer cases registered at the Tikur Anbessa (Black Lion) Specialized Hospital (TASH) between 1997 and 2012, Abate (2015:104) found that 5,293 were cervical cancer cases. New cases had increased between 1997 and 2012; the peak age of incidence was 40-49 years; the number of cases per region depended on their distance from Addis Ababa, and Addis Ababa, Oromia, and Amhara had the highest numbers (Abate 2015:104).

In 2016, Ethiopia had an estimated population of 29.43 million women aged 15 years and older who were at risk of developing cervical cancer (Human Papilloma Virus [HPV] Centre 2017:1). Cervical cancer was the second most frequent cancer among women in all age groups, and the most frequent cancer among women between 15 and 44 years of age. Abate (2015:104) found an estimated 31.8% adult prevalence of cervical cancer between 1997 and 2012.

Several factors, such as low level of awareness, educational status, financial capability and presence of health care facilities, determined the stage at which patients with cancer presented at Tikur Anbessa (Black Lion) Specialized Hospital (TASH) (Abate 2015:106).

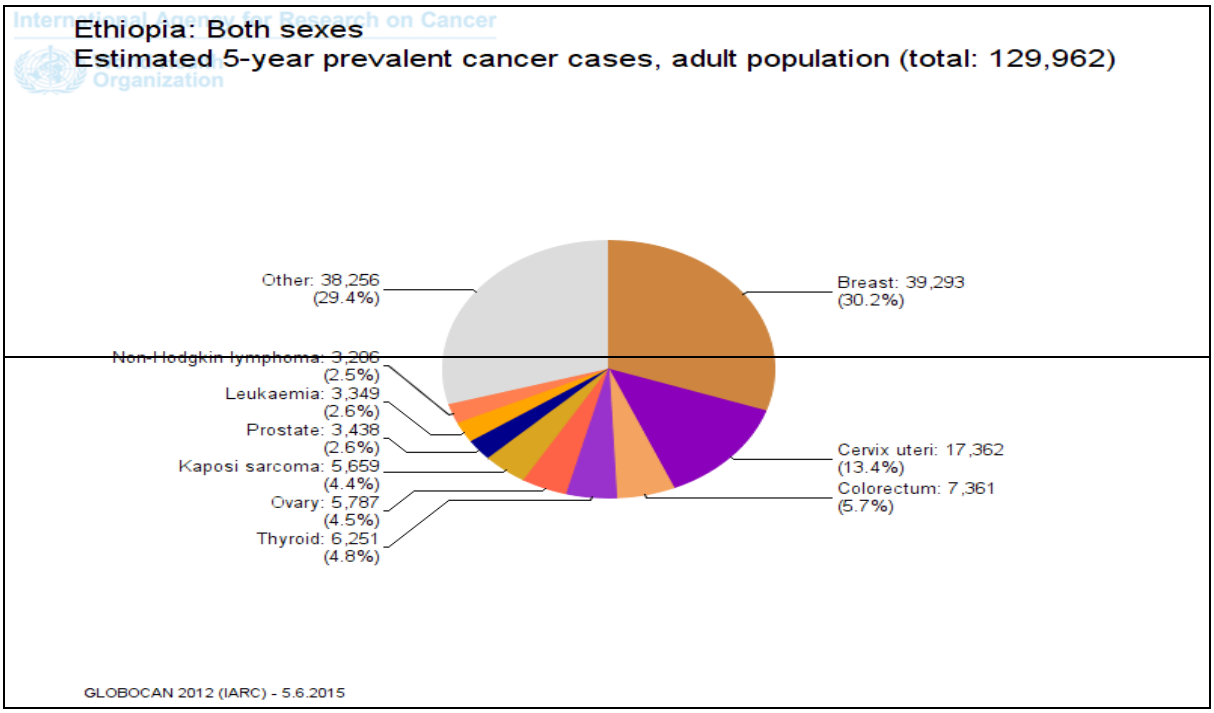


**Figure 2.4 Estimated 5-year prevalence of adult cancer cases, GLOBOCAN 2012**

(FMOH 2015b:14)

Figure 2.4 shows estimated 5 years prevalence of adult cancer cases. Ferlay et al (2012:E381) reported that Cervical cancer remains the most common cancer in women in Eastern and Middle Africa and a 5 year prevalent cervical cancer in adult population was found about 13.4%.

## 2.4 ETIOLOGY

Cervical cancer is the most common human papillomavirus (HPV)-related disease (WHO 2014a:25). Nearly all cases of cervical cancer can be attributed to HPV infection. HPV is the most common viral infection of the reproductive tract which is spread through sexual intercourse. Most sexually active women and men will be infected at some point in their lives and some may be repeatedly infected. HPV is sexually transmitted, but penetrative sex is not required for transmission, skin-to-skin genital contact is a well-recognised mode of transmission. There are many different types/strains of HPV. Human Papilloma Virus 6 and 11 are considered low-risk genital types while HPV 16 and 18 contribute to malignancy and fall under the high-risk genital types which could cause cervical cancer. Infection with a high-risk or oncogenic HPV type is the primary cause of pre-cancerous and malignant cervical lesions. A significant prevalence of high-risk kinds, particularly HPV16 is found in Human populations (WHO 2014a:39; HPV 2017:1; Zhang, Xu, Zhang & Qiao 2020:722).

Virtually all cervical cancers are associated with human papilloma viruses (HPV). However, the majority of women with HPV do not develop cervical cancer. Women become susceptible to developing cervical cancer following HPV infection, but other environmental factors are required for the cancer to develop (Bray et al 2018:399).

According to the WHO (2019:1), there is a risk for all women that HPV infection may become chronic and pre-cancerous lesions progress to invasive cervical cancer. It takes about 15 to 20 years for cervical cancer to develop in women with normal immune systems, but only 5 to 10 years in women with weakened immune systems, such as those with untreated human immunodeficiency virus (HIV) infection. Cervical cancer usually develops slowly. It starts as a precancerous condition called dysplasia, which can be detected by a Pap smear and is 100% treatable. It can take years for these changes to turn into cervical cancer.

## 2.5 STAGES OF CERVICAL CANCER

Staging refers to the extent or spread of cancer at the time of diagnosis therefore proper staging is essential in determining the choice of therapy and assessing prognosis (American Cancer Society [ACS] 2016:8). The International Federation of Gynaecology and Obstetrics (FIGO) staging system is used most often for cancers of the female reproductive organs, including cervical cancer (Wibea, Dennyb & Thomasa 2012:S100). Staging is based mainly on the results of the doctor's physical examination and other tests that are done in some cases, such as cystoscopy and proctoscopy. It is not based on what is found during surgery. Information about the tumour (T), lymph nodes (N), and any cancer spread (M) is then combined to assign the cancer an overall stage. This process is called stage grouping. The stages are described using the number 0 and Roman numerals from I to IV. Some stages are divided into sub-stages indicated by letters and numbers.

Additional imaging, such as computed tomography (CT), magnetic resonance imaging (MRI), or positron emission tomography (PET), was considered beneficial but not mandated for staging local findings, and the acquired findings were not taken into account when assessing the tumour stage. However, since the early tumour stage is the deciding significant predictor for patients, primary staging and precise determination of the tumour extent are highly important. As a result, the 2018 revision of the FIGO classification takes into account cross-sectional imaging methods for visualizing local findings for the first time when determining the primary stage. Furthermore, based on image processing, an already defined tumour stage can be adjusted (Merz, Bossart, Bamberg & Eisenblaetter 2020:939).

1. Imaging techniques can be used in addition to histology and clinical examination to determine cancer stage.
2. In stage I, the definition of microscopic pathological findings and size designations are being adapted to allow for the evaluation of cervical cancer using cross-sectional imaging methods.
3. Lymph nodes can be evaluated in stages I to III based on imaging and histopathological findings. If they are categorised as suspicious for malignant transformation, the case is classified as stage IIIC, regardless of the size and extent of the tumor (with specification of the method being used).

4. Currently, there is no recommendation for the repetitive use of imaging methods for cervical cancer local staging. On the basis of clinical findings, they can be performed in a supplementary capacity (Merz, et al 2020:940)

**Stage 0 (Tis, N0, M0)**

The cancer cells are only in the cells on the surface of the cervix (the layer of cells lining the cervix), without growing into (invading) deeper tissues of the cervix. This stage is also called *carcinoma in situ* (CIS) which is part of cervical intraepithelial neoplasia grade 3 (CIN3). Stage 0 does not exist in the FIGO system (America Cancer Society 2016:11; Wiebea et al 2012:S100).

**Stage I (T1, N0, M0)**

In this stage the cancer has grown into (invaded) the cervix, but it is not growing outside the uterus (T1). The cancer is limited to the cervix it has not spread to nearby lymph nodes (N0) or distant sites (M0).

**Stage IA (T1a, N0, M0)**

This is the earliest form of stage I. There is a very small amount of cancer, and it can be seen only under a microscope.

The cancer has not spread to nearby lymph nodes (N0) or distant sites (M0).

- **Stage IA1 (T1a1, N0, M0):** The cancer is less than 3 mm (about 1/8-inch) deep and less than 7 mm (about 1/4-inch) wide (T1a1). The cancer has not spread to nearby lymph nodes (N0) or distant sites (M0).
- **Stage IA2 (T1a2, N0, M0):** The cancer is between 3 mm and 5 mm (about 1/5-inch) deep and less than 7 mm (about 1/4-inch) wide (T1a2). The cancer has not spread to nearby lymph nodes (N0) or distant sites (M0).

**Stage IB (T1b, N0, M0)**

This includes stage I cancers that can be seen without a microscope as well as cancers that can only be seen with a microscope if they have spread deeper than 5 mm (about 1/5 inch) into connective tissue of the cervix or are wider than 7 mm (T1b). These cancers have not spread to nearby lymph nodes (N0) or distant sites (M0).

- **Stage IB1 (T1b1, N0, M0):** The cancer can be seen but it is not larger than 4 cm (about 1 3/5 inches) (T1b1). It has not spread to nearby lymph nodes (N0) or distant sites (M0).
- **Stage IB2 (T1b2, N0, M0):** The cancer can be seen and is larger than 4 cm (T1b2). It has not spread to nearby lymph nodes (N0) or distant sites (M0).

**Stage II (T2, N0, M0)**

In this stage, the cancer has grown beyond the cervix and uterus, but has not spread to the walls of the pelvis or the lower part of the vagina. It has not spread to nearby lymph nodes (N0) or distant sites (M0).

**Stage IIA (T2a, N0, M0)**

The cancer has not spread into the tissues next to the cervix (the parametria), but it may have grown into the upper part of the vagina (T2a). It has not spread to nearby lymph nodes (N0) or distant sites (M0).

- **Stage IIA1 (T2a1, N0, M0):** The cancer can be seen but is not larger than 4 cm (about 1 3/5 inches) (T2a1). It has not spread to nearby lymph nodes (N0) or distant sites (M0).
- **Stage IIA2 (T2a2, N0, M0):** The cancer can be seen and is larger than 4 cm (T2a2). It has not spread to nearby lymph nodes (N0) or distant sites (M0).
- **Stage IIB (T2b, N0, M0):** The cancer has spread into the tissues next to the cervix (the parametria) (T2b). It has not spread to nearby lymph nodes (N0) or distant sites (M0).

**Stage III (T3, N0, M0)**

The cancer has spread to the lower part of the vagina or the walls of the pelvis, and it may be blocking the ureters (tubes that carry urine from the kidneys to the bladder) (T3). It has not spread to nearby lymph nodes (N0) or distant sites (M0).

- **Stage IIIA (T3a, N0, M0)**: The cancer has spread to the lower third of the vagina but not to the walls of the pelvis (T3a). It has not spread to nearby lymph nodes (N0) or distant sites (M0).

- **Stage IIIB (T3b, N0, M0; OR T1-T3, N1, M0):**
  - The cancer has grown into the walls of the pelvis and/or has blocked one or both ureters causing kidney problems (hydronephrosis) (T3b), **or**
  - The cancer has spread to lymph nodes in the pelvis (N1) but not to distant sites (M0). The tumour can be any size and may have spread to the lower part of the vagina or walls of the pelvis (T1 to T3).

**Stage IV**

This is the most advanced stage of cervical cancer. The cancer has spread to nearby organs or other parts of the body.

- **Stage IVA (T4, N0, M0):** The cancer has spread to the bladder or rectum, which are organs close to the cervix (T4). It has not spread to nearby lymph nodes (N0) or distant sites (M0).
- **Stage IVB (any T, any N, M1):** The cancer has spread to distant organs beyond the pelvic area, such as the lungs or liver (M1).

## 2.6 SIGNS AND SYMPTOMS CERVICAL CANCER

Women with early cervical cancer and pre- cancer often do not have symptoms. The majority of HPV infections do not cause symptoms or disease and resolve spontaneously and take a long time after exposure to HPV infection (American Cancer Society [ACS] 2016:2). Symptoms of cervical cancer tend to appear only after the cancer has reached an advanced stage and may include abnormal vaginal bleeding,

such as irregular, inter-menstrual (between periods) or abnormal vaginal bleeding after sexual intercourse; post-menopausal bleeding and pain during intercourse; leg or pelvic pain; fatigue, weight loss, loss of appetite vaginal discomfort or odorous discharge, and in some cases, just one swollen leg. More severe symptoms may arise at advanced stages (America Cancer Society 2016:2).

In Soudi among 300 women with suspected cervical cancer were, the most common symptom was found to be vaginal bleeding (51.4%), followed by vaginal discharge (28.5%), and post-coital bleeding (13.9%) (Al-Madani, Ahmed, Arabi, Al Khodairy, Al Mutairi & Jazieh 2019:447). According to patients presented with symptoms related to cervical cancer, most common symptoms were found to be being abnormal vaginal bleeding, abdominal pain and vaginal discharge (Begoihn, Mathewos, Aynalem, Wondemagegnehu, Moelle, Gizaw, Wienke, Thomssen, Worku, Addissie & Jemal 2019:6). The study done southern Ethiopia by Teka, Kote, Kejela and Getachew (2019:4) showed the most common symptoms being abnormal vaginal bleeding, abdominal pain and vaginal discharge, more of 91.1% of patients presented with abnormal vaginal bleeding.

## 2.7 RISK FACTORS FOR CERVICAL CANCER

A risk factor is anything that changes the chance of getting a disease (American Cancer Society 2020:1). Knowing about risk factors for cervical cancer helps women to focus on those that could be changed. Infection with high-risk or oncogenic HPV types is the primary cause of pre-cancerous and cancerous cervical lesions. The majority of cervical cancer cases are caused by HPV16 and 18. High-risk types, particularly HPV16, have been discovered to be extremely common in human populations. Zhang et al stated (2020:722) that the infection is commonly transmitted through sexual contact, resulting in squamous intraepithelial lesions. Due to immunological intervention, the majority of lesions disappear after 6-12 months. However, a small percentage of these lesions remain and can cause cancer.

In Central and South America, Murillo, Herrero, Sierra and Forman (2016:S121) found that persistent infection of the cervix with high-risk types of human papillomavirus (HPV) caused the development of cervical cancer. The risk factors for HPV infection are linked

to individuals' sexual behaviour. Immaturity status and low production of mucus of the cervix also favour the presence of HPV in women.

Several risk factors increase the chance of developing cervical cancer, although some women with these risks do not develop the disease (American Cancer Society 2020:2). At the same time, women without any of these risk factors rarely develop cervical cancer. When a woman develops cervical cancer or pre-cancerous changes, it might not be possible to say that a particular risk factor was the cause and determining factor.

The risk factors for acquiring HPV and cervical cancer include a weakened immune system; smoking; sexually-transmitted infection Chlamydia infection; long-term use of oral contraceptives; having children at a young age; having multiple sexual partners, and a family history of cervical cancer which are explained below (Dangou 2012:18; (Zhang et al 2020:722).

### 2.7.1 Having a weakened immune system

The human immunodeficiency virus (HIV) that causes Acquired Immune-deficiency Syndrome (AIDS) damages a woman's immune system and puts her at higher risk for HPV infections (WHO 2014a:139). The immune system is important in destroying cancer cells and slowing their growth and spread, and might explain why women with AIDS have a higher risk of cervical cancer. When a woman has HIV, her immune system is less able to fight off early cancer. In women with HIV, a cervical pre-cancer might develop into an invasive cancer faster than it would normally.

Globally, about 6% of women with cervical cancer are living with HIV and just fewer than 5% of all cases of cervical cancer are attributable to HIV. Nevertheless, the proportions vary widely by region; 85 % of women with cervical cancer and HIV live in sub-Saharan Africa, underlining the major contribution of HIV to cervical cancer burden in the region (Stelzle, Tanaka, Lee Khalil, Baussano, Shah, McAllister, Gottlieb, Klug, Winkler & Bray 2020:e162). According to WHO (2020:11), women living with HIV are six times as likely to develop cervical cancer compared to women who are HIV negative and are more likely to develop it at a younger age.

In a study among HIV-positive women in southern Ethiopia, Gedefaw, Astatkie and Tessema (2013:4) found that 22.1% of the participants had precancerous cervical cancer. Women taking drugs to suppress their immune response, such as those being treated for an autoimmune condition or who have had an organ transplant, are also at risk for cervical cancer (WHO 2014a:42). A study done by Begoihn et al (2019:6) identified known HIV-infection was associated with an almost 1.5-fold risk of diagnosis at a more advanced stage compared to those patients with a negative or unknown HIV-status (95% CI 1.05–2.1 p = 0.025).

### 2.7.2 Smoking cigarettes

Women who smoke are more likely to get cervical cancer, implying that tobacco use is a contributing cause. Furthermore, tobacco use has an impact on both adaptive and innate immunological responses to HPV (Aguayo, Muñoz, Perez-Dominguez, Carrillo-Beltrán, Oliva, Calaf, Blanco & Nuñez-Acurio 2020:2201). Those who smoke are about twice as likely as non-smokers to get cervical cancer. Tobacco by-products have been found in the cervical mucus of women who smoke. Researchers believe that these substances damage the DNA of cervix cells and may contribute to the development of cervical cancer. Smoking also makes the immune system less effective in fighting HPV infections (American Cancer Society 2020:3). In an urban community of Kweara state, Nigeria, Durowade, Osagbemi, Salaudeen, Musa, Akande, Babatunde, Raji (2012:213) found tobacco smoking a risk factor for cervical cancer. Teka et al (2019:4) identified that in south Ethiopia women who had history of smoking were almost four times more likely to have pre-cervical cancer compared to those who had no history of smoking (AOR [95% CI]) = 3.7 [1.4-9.9]).

### 2.7.3 Having sexually-transmitted infection

Chlamydia is a relatively common type of bacteria that can infect the reproductive system. It is spread by sexual contact. Chlamydia infection can cause pelvic inflammation, leading to infertility. Some studies have seen a higher risk of cervical cancer in women whose blood tests and cervical mucus showed evidence of past or current Chlamydia infection. Women who are infected with Chlamydia often have no symptoms. In fact, they may not know that they are infected at all unless they are tested for Chlamydia during a pelvic examination (America Cancer Society 2020:4).

In a case control study done in Indea by Kashyap, Krishnan, Kaur and Ghai (2019:310) among 75 women diagnosed cervical cancer 18 participants had a history of Sexually Transmitted Disease (STD).

### 2.7.4 Long-term use of oral contraceptives (birth control pills)

Long-term use of oral contraceptives (OCs) increases the risk of cancer of the cervix. The risk of cervical cancer increases the longer a woman takes OCs, but decreases after the use of OCs is stopped, and returns to normal about 10 years after stopping. A woman and her doctor should discuss whether the benefits of using OCs outweigh the potential risks (WHO 2014a:40). Long-term use of oral contraceptives has been associated with cervical cancer risk In Ethiopia, women with long term use of oral contraceptives were associated with an increased risk of cervical cancer compared to women who do not use oral contraceptives (Kassa 2018:4).

### 2.7.5 Having children at a young age

Women who were younger than 20 years old when they had their first full-term pregnancy are almost twice as likely to get cervical cancer later in life than women who became pregnant when they were 25 or older (America Cancer Society 2020:4).

### 2.7.6 Having multiple sexual partners

Moreover, many studies have also suggested that women with multiple sexual partners are at high risk for HPV acquisition and cervical cancer in their meta-analysis of epidemiological studies, Liu, Liu, Liu, Ye and Chen (2015:3899) found that having multiple sexual partners was a potential risk factor for cervical cancer. Study done by Teka et al (2019:4) identified that woman who had two or more than two life-time sexual partners were 2.2 times more likely to have pre cervical cancer compared to those who had less than two life-time sexual partners (AOR [95% CI]) = 2.2 [1.1-4.7].

### 2.7.7 Having a family history of cervical cancer

Cervical cancer may run in families. If a woman's mother or sister had cervical cancer, the chances of developing the disease are two to three times higher than if no one in the family had it. This familial tendency may be caused by an inherited condition that makes some women less able to fight off HPV infection than others (America Cancer Society 2020:5). In a study among women aged 18-49 years in Njiru Sub-County, Nairobi, Kenya, Mungai, Kikuvi, Wanzala and Mutai (2016:88) found that being sexually active from a young age, giving birth to many children, and early age at first birth were also risks for acquiring cervical cancer. Al-Madani et al (2019:449) identified that family history of cancer (AOR, 4.216; 95% CI, and 1.433-12.400) was risk for cervical cancer.

### 2.7.8 Early age at first sexual intercourse

Sexual behaviour was associated with an increased risk of HPV 16/18 infection. Early sexual intercourse can be a risk factor for cervical cancer in young women. Women who begin to have sexual intercourse before the age of 16 is more vulnerable to HPV infection because during puberty because during puberty the cervix undergoes cellular changes at the transformation zone that are known as ectopy. During ectopy, the cervical cells may not only be more susceptible to HPV infection, but they may also be more prone to persistent HPV infection and to more lasting damage from an infection. Women who engaged in sexual intercourse at a younger age tended to have a higher risk of harbouring HPV 16/18 infection (Itarat, Kietpeerakool, Jampathong, Chumworathayi, Kleebkaow, Aue-Aungkul & Nhokaew 2019:490)

A significant association was found among women who had their first sexual intercourse prior to 16 years of age and HPV infection (OR 4.41; 95 %CI: 1.20- 19.33) ( Ribeiro, Costa, Alves, Villa, Saddi, dos Santos Carneiro, Zeferino, & Rabelo-Santos, 2015:3) Study done in Southern Ethiopia showed women who had first sexual intercourse at less than eighteen years were 6.6 times more likely to have pre-cervical cancer compared to those who had first intercourse at eighteen or above years (AOR [95% CI]) = 6.6 [3.14-13.0]) (Teka et al 2019:4).

## 2.8 PREVENTION OF CERVICAL CANCER

Cervical cancer prevention and control programmes are developed and designed to decrease cervical cancer incidence, morbidity and mortality. WHO (2014a:8) indicated that most women who die from cervical cancer, particularly in developing countries, are in the prime of their lives. They may be raising children or caring for their families and contributing to the social and economic lives of their community. A woman's death is both a personal disaster and a sad and unnecessary loss to her family and her community, with enormous consequences for the welfare of both. These deaths are unnecessary because there is compelling indication that cervical cancer is one of the most preventable and treatable forms of cancer if it is detected early and managed effectively. The WHO (2014a:45) recommends that comprehensive programmes should include primary, secondary and tertiary prevention activities and access to palliative care.

### 2.8.1 Primary prevention

Primary prevention consists of those preventive measures aimed at a healthy population or individual who is susceptible to a given disease. The purpose of primary prevention is to prevent an illness or injury from occurring. Common activities consist of activities that limit risk exposure or enhance the resistance of individuals at risk (Kisling & Das 2019). This would determine the women's awareness and knowledge of reducing the risk of cervical cancer.

#### *2.8.1.1 Reducing exposure to risk factors associated with HPV infection*

Primary prevention is essentially based on a healthy lifestyle and vaccination against HPV. Cervical cancer belongs to the group of cancers that are preventable and treatable by vaccination of HPV and early screening diagnoses. healthy sexuality education for boys and girls, tailored as appropriate to age and culture, essential messages which include delay of sexual initiation, and reduction of high-risk sexual behaviours; condom promotion or provision for those who are sexually active; male circumcision where relevant and appropriate aimed to reduce the risk of HPV transmission (WHO 2014a:53). Preventing HPV infection will prevent cervical cancer. This primary prevention approach, however, presents greater challenges than for most

other STIs. In a study among Zimbabwean women on anti-retroviral therapy (ART), Pomerai, Muchekez and Nyachowe (2012:495) found that although condoms significantly reduce the risk of HIV infection, there was no evidence that they reduced the risk of HPV infection.

#### *2.8.1.2 HPV vaccine*

Vaccination against HPV is the most effective way to prevent cervical cancer. In developing countries where women's healthcare facilities are minimal or extremely limited, the benefits of such a vaccine will be especially important. New vaccines against the *Human papillomavirus* (HPV) help to prevent cervical cancer further (WHO 2013:2).

According to the WHO (2013:4), 70% of cervical cancers worldwide are caused by only two HPV types (16 and 18). Two vaccines against HPV are licensed in most countries because both vaccines prevent 95% of HPV infections caused by HPV types 16 and 18, and may have some cross-protection against other less common HPV types which cause cervical cancer. The most effective population to target for HPV vaccination is young, adolescent girls. However, effective, affordable and equitable delivery strategies to reach girls 9-13 years of age three times during a 6-month period are required. Immuno-compromised individuals, including those who are living with HIV and females aged 15 years and older should also receive the vaccine and need three doses (WHO 2014a:108).

Despite the HPV vaccine’s proven safety, efficacy and cost-effectiveness there exists a significant lag in its introduction in low- and middle-income countries (Wigle, Coast & Watson 2013:3812). Until a protective vaccine is widely available and accessible, primary prevention must focus on reducing the behaviours and risks that increase people’s risk of becoming infected. Risk reduction counselling on the risk factors should be incorporated into all levels of the healthcare system, especially those dealing with young people, and should inform adolescents about practices designed to minimise the risk of STI or HIV exposure, like condom promotion, health information (WHO 2014a:53).

### 2.8.2 Secondary prevention

Secondary prevention of cervical cancer focuses on identifying and treating women with precancerous (WHO 2020:28). The goal of secondary prevention intervention is to decrease the incidence and prevalence of cervical cancer and associated mortality, by discontinuing progress from pre-cancer to invasive cancer. Interventions include counselling and information sharing, and screening for all women aged 30-49 years (or ages determined by national standards) to identify precancerous lesions, which are usually asymptomatic; treatment of identified (WHO 2014a:53).

#### *2.8.2.1 Cervical cancer screening*

Cervical cancer prevention programmes aim to screen the largest possible proportion of women. Cervical cancer screening refers to the systematic application of a test to identify cervical abnormalities in an asymptomatic population (WHO 2013:6). Early detection, by screening all women in the target age group, followed by treatment of detected precancerous lesions can prevent the majority of cervical cancers. Cervical cancer screening should be performed at least once for every woman in the target age group 30-49 years where most benefit can be achieved. Cervical cancer screening, at least once, is recommended for every woman in the target age group, but this may be extended to women younger than age 30 if there is evidence of a high risk. For cervical cancer prevention to be effective, women with positive screening test results must receive effective treatment (WHO 2014a:131).

Women who are already infected with HPV should be screened to determine whether they have early, easily treatable precancerous lesions. If lesions are found, they should be treated before they progress to cancer. Although the Pap smear is the most well-established method of screening women for precancerous lesions, other approaches to screening women at risk for cervical cancer include visual screening, HPV tests and cytology screening (WHO 2013:7). With the aim of eliminating cervical cancer globally, cervical cancer screening, is becoming more important in overall prevention and control, in addition to HPV vaccination, particularly for those treatments that have shown to be effective in clinical trials (Zhang et al 2020:723).

#### *2.8.2.2 Cytology-based screening*

For decades, the Papanicolaou (Pap) smear has been used throughout the world to identify precancerous cervical lesions for treatment and follow-up. Cytology-based screening has been shown to be effective when implemented as part of national programmes with high coverage and in settings where resources exist for patient follow-up, additional diagnostic tests such as colposcopy and pathology, and disease management. However, in low- and middle-income countries cytology-based programmes have been challenging to implement, even where they have been implemented screening coverage is low (WHO 2020:28). In developed countries, routine Pap smear screening has contributed to a 70-80% reduction of cervical cancer. However, a single cervical cytology result is relatively insensitive for the detection of cervical pre-cancer and cancer (Ahmed 2016:6)

Cytology-based screening involves taking a sample of cells from the entire transformation zone, and can use either conventional Pap smear or liquid-based cytology (LBC). With conventional cytology, a sample of cells is smeared on a glass slide, and preserved by a fixative agent. For LBC, instead of smearing the sample onto a slide, it is placed into a container of preservative solution and sent to the laboratory for microscopic examination (WHO 2014a:146).

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Cervical cancer screening should not start before 30 years of age. Screening women between the ages of 30 and 49 years, even once, would reduce deaths from cervical cancer. Cervical cancer screening is recommended for every woman in this target age group, but this may be extended to younger ages if there is evidence of a high risk, such as HIV prevalence (WHO 2014a:138).

#### *2.8.2.3 Visual inspection with acetic acid (VIA)*

Visual inspection with acetic acid (VIA) is a method for detecting early cell changes that are visible when using a speculum to inspect the cervix with the naked eye after applying diluted solution (3-5%) acetic acid for nearly 1-2 minutes. After the use of the acetic acid, epithelial changes become aceto-white, which indicates that these have immature squamous metaplasia; that is, cervix infection with HPV and true cervical cancer precursors (WHO 2014a:144; Ahmed 2016:5). Visual inspection with acetic acid

does not require laboratory staff training except the training and supervision of primary care providers. The results are immediately available, allowing treatment during a single visit and thus reducing loss to patient follow-up, and promoting a “screen and treat” mechanism that entails diagnosis and treatment at a single visit. The sensitivity of VIA is equivalent to or better than that of a Pap smear, although its specificity is lower (WHO 2014a:148).

#### *2.8.2.4 Visual inspection with Lugol’s Iodine (VILI)*

The first method for cervical cancer screening was visual inspection of the cervix after application of Lugol’s iodine (VILI), originally known as the Schiller test, and was introduced by Schiller in the 1930s. It involves naked eye examination of the cervix to identify mustard yellow lesions in the cervix immediately after application of Lugol’s iodine. A positive result is based on the appearance of a definite mustard yellow area on the cervical os or on a cervical growth. The test cannot be repeated for several hours as iodine stains and changes persist for a long time (Denny 2012:71). Schiller’s test has poor specificity and was almost completely replaced with cervical cytology. Current cervical cancer screening includes a combination of cervical cytology and HPV testing. Limited specificity notwithstanding, visual inspection of the cervix has re-emerged as a screening tool for low-resource settings because it is economical and provides immediate results. Visual inspection can be done with acetic acid (VIA) or Lugol’s iodine (VILI) (Denny 2012:72). A cross sectional study done in India, identified that sensitivity for VIA and VILI was 89.5 and 100 per cent, respectively, while the specificity for VIA and VILI and was 91.2, 93.3 and 99.1 per cent, respectively (Ghosh, Gandhi, Kochhar, Zutshi & Batra 2012:265).

#### *2.8.2.5 HPV testing*

HPV testing established that cervical neoplasia is caused by persistent infection with certain oncogenic types of HPV. This knowledge led to the evaluation of HPV testing as a screening tool. The hybrid capture assay (HCA) is currently the most widely used. Other HPV DNA testing formats based on polymerase chain reaction permit identifying infection with individual oncogenic types. One advantage of HPV DNA testing is that it is not as subjective as cytology screening. Moreover, in addition to identifying those who

are at increased risk for developing cervical disease, HPV DNA testing can identify women who already have the disease (Ahmed 2016:6).

HPV testing is incorporated into cervical cancer screening programmes as a primary screening test in high resource settings (WHO 2014a:129). A population-based randomised trial indicated that using HPV DNA testing as the primary screening followed by cytological triage and repeat HPV DNA testing of women with normal cytology who were HPV DNA positive after at least one year was a feasible strategy for incorporating HPV testing in primary cervical cancer screening, because it improved sensitivity and maintained a high positive predictive value, thus minimising unnecessary referrals. However, HPV DNA testing is expensive and presents similar challenges as cytology screening in low-resource areas (Ahmed 2016:7).

#### *2.8.2.6 Treatment options for cervical pre-cancer*

Treatment aims to destroy or remove areas of the cervix identified as pre-cancerous lesion. Treatment methods may be ablative (destroying abnormal tissues by burning or freezing) or excision (surgically removing abnormal tissues). With ablative methods, no tissue specimen is obtained for further confirmatory histopathological examination (WHO 2014a:155). Cryotherapy or loop electrosurgical excision (LEEP) can provide effective and adequate treatment for the majority of women who are positive for cervical pre-cancer (WHO 2014a:131).

The screen-and-treat approach was developed to reduce loss to follow-up, and this strategy was increasingly adopted worldwide (WHO 2013:5). Instead of screening and diagnosis by the standard sequence of cytology, colposcopy, biopsy, and histological confirmation of CIN, an alternative method is to use a screen-and-treat approach in which the treatment decision is based on a screening test and treatment is provided soon or, ideally, immediately after a positive screening test. Even for women who have received an HPV vaccination, it is important to continue screening and treatment when they reach the target age (WHO 2013:8). Each treatment method, namely Cryotherapy, Loop Electrosurgical Excision Procedure (LEEP) and Cold Knife Conisation (CKC), has eligibility criteria that should be met before proceeding with treatment (WHO 2014a:131).

Other forms of therapy, such as laser excision or ablation, are not as widely available. A hysterectomy is rarely an appropriate means to treat pre-cancer. Unless there are other compelling reasons to remove the uterus, a hysterectomy should not be performed for pre-cancer (WHO 2014a:155).

### 2.8.3 Tertiary prevention of cervical cancer

The annual number of new cases of cervical cancer has been projected to increase from 570 000 to 700 000 between 2018 and 2030 throughout the world that need treatment (WHO 2020:7). Invasive cervical cancer is treated by surgery and/or radiotherapy. Chemotherapy can complement the treatment regime in late stages. In many countries there is insufficient capacity to provide these services or the existing services are not accessible and affordable to the majority of affected women Palliative care which is tertiary prevention is provided to patients when the disease has already reached an incurable stage (Pomerai et al 2012:496).

## 2.9 DIAGNOSIS

A diagnostic or confirmatory test is a medical test performed to aid in the diagnosis or detection of a disease. Since not all women with positive results on cervical screening tests have pre-cancer, a subsequent diagnostic test is sometimes used for confirmation of pre-cancer or cancer (WHO 2014a:136). Colposcopy, biopsy and endo cervical curettage (ECC) are the most commonly used diagnostic tests.

## 2.10 TREATMENT OF CERVICAL CANCER

Globally, an estimated 570 000 new cases of cervical cancer are diagnosed annually that need treatment (WHO 2020:7). Treatment of cervical cancer is dependent on the stage of the disease, age and medical state of the patient, tumour characteristics, patient preferences, and resources within the health sector of each country. Cervical cancer treatment options include surgery, radiotherapy and chemotherapy, and these may be used in combination (WHO 2014a:165).

A systematic review of cervical cancer prevention and treatment in public health facilities in Africa, found the availability of these options typically limited to capital cities

or not available at all (Finocchario-Kessler, Wexler, Maloba, Mabachi, Ndikum-Moffor & Bukusi 2016:29). Consequently, palliative care with symptom control and support may be the most likely option for severely late-stage cervical cancer or for women with less advanced disease, but who cannot afford or access treatment. In many African countries, only 24% to 67% of those diagnosed with cervical cancer receive some form of treatment (either radiotherapy or hysterectomy). Table 2.1 lists treatment options with respect to stage of cervical cancer.

**Table 2.1 Treatment options with respect to stage of cervical cancer**

| **Stage of cancer** | **Treatment** |
|---|---|
| **Stage 1** Cancer strictly confined to the cervix | |
| **Stage IA** Invasive cancer identified only microscopically | Simple hysterectomy |
| **Stage IB** Clinical lesions (lesions that can be seen without a microscope) confined to cervix<br><br>**Stage II** Cancer extends beyond cervix, but not extended onto pelvic wall<br><br>**Stage IIA** Cancer spread to upper part of vagina, but no obvious parametrial involvement | Radical hysterectomy with pelvic node dissection or external beam and intra-cavity radiotherapy |
| **IIB** Obvious parametrial involvement<br><br>**Stage III** Extended onto the pelvic wall or to the lower third of the vagina<br><br>**Stage IIIA** No extension onto the pelvic wall, but involvement of lower third of vagina<br><br>**Stage IIIB** Extension onto the pelvic wall or blocked urine flow. | Pelvic radiotherapy |
| **Stage IV** Extended beyond true pelvis or clinically involved mucosa of bladder or rectum | Chemotherapy with or without pelvic radiotherapy |

(Adopted from WHO 2014a:375) (Annexure 10)

## 2.11 FACTORS INFLUENCING TO CERVICAL CANCER SCREENING

Several factors contribute to poor screening, but may be summarised in three categories: (1) lack of knowledge and misinformation about cervical cancer; (2) psychosocial beliefs about cervical cancer and perceived barriers to screening, and (3) structural barriers to healthcare access. These factors are explained in the Health Belief

Model (HBM) that describes individuals' health-related behaviours, particularly in regard to the uptake of health services.

## 2.12 HEALTH BELIEF MODEL AND CERVICAL CANCER SCREENING BEHAVIOUR

The health belief model (HBM) is a conceptual framework that describes a person's health behaviour as an expression of health beliefs. The model was designed to predict a person's health behaviour, including the use of health services, and to justify intervention to alter maladaptive health behaviour. Components of the model include the person's own perception of susceptibility to a disease or condition, the likelihood of contracting it, the person's perception of the severity of the consequences of contracting it, the perceived benefits of care and barriers to preventive behaviour, and the internal or external stimuli that result in appropriate health behaviour by the person (*Mosby's Medical and Nursing Dictionary* 1988:512). (Detailed explanation of the model see chapter 1).

- **Perceived susceptibility**

As explained in chapter 1, Individuals who believe they have risk factors for developing cervical cancer and perceived susceptibility to an illness are more likely to take action to prevent a negative health outcome. In Kisumu, Kenya, Morema et al (2014:335) found that women who were not aware of susceptibility to cervical cancer had a higher likelihood of not being screened. In Mekelle Zone, Northern Ethiopia, Bayu, Berhe, Mulat and Alemu (2015:2) found that perceived susceptibility to cervical cancer was a significant predictor of cervical cancer screening service uptake. A study in Arba Minch Town, Southern Ethiopia, found that 41.4% of the participants utilised the cervical cancer screening service due to their perceived susceptibility to the disease (Gebru, Gerbaba & Dirar 2016:297). The study done in Jimma town, south-west Ethiopia revealed that perceived susceptibility for cervical cancer was a factor that affect cervical cancer screening utilizationshowing that women who had high perceived susceptibility were more likely to undergo screening when compared with low perceived susceptibility (Nigussie, Admassu & Nigussie 2019).

- **Perceived severity**

Perceived severity of cervical cancer refers to women's feelings about the medical harm (death, disability or pain) or social damage (effects on work, family and social life) in developing cervical cancer or not utilising cervical cancer screening/treatment. In their study in Arba Minch town, Southern Ethiopia, Gebru et al (2016:297) found that 30.3% of the participants perceived the severity of cervical cancer and accepted screening for cervical cancer. Further, more than one-third of women perceived the seriousness of the disease in the study done in Saudi (Aldohaian, Alshammari & Arafah 2019:8). According to Annan, Asante and Kugbey (2019:4), increased perceived seriousness significantly predicted increased cervical cancer screening behaviours ($b = .04$, $p < .05$)

- **Perceived benefit**

Individuals who believe they are susceptible to a disease and that it is severe will take health action if they also perceive the action as potentially beneficial by reducing the threat (Tavafian 2012:5). Gebru et al (2016:297) found that 48.2% of the participants perceived the benefit of screening by detecting pre-cancerous cells, which gave them a sense of decreasing risk. In Njiru Sub-County, Nairobi, Kenya, Mungai et al (2016:88) reported that the majority of the participants perceived screening as highly effective in the prevention of cervical cancer.

- **Perceived barriers**

Perceived barriers refer to the cost of taking action and individuals must believe the cost is outweighed by the benefits (Tavafian 2012:6). In a study in Mekelle Zone, North Ethiopia, the participants believed the benefits outweighed the perceived barriers or cost of action, which was a predictor of cervical cancer screening uptake (Bayu et al 2015:5). In Saudi 27% of the participants perceived barriers to obtaining a cervical cancer screening test (Aldohaian et al 2019:8).

- **Modifying variables**

Modifying variables can affect health-related behaviours indirectly either by mediating or moderating the key HBM constructs by affecting perceived seriousness, susceptibility,

benefits, and barriers (Glanz, Rimer & Viswanath 2015:75). Thus, socio-demographic factors may indirectly impact individuals' behaviour of cervical cancer screening by influencing their perception of susceptibility to the disease, severity of the disease and benefits of screening.

Several studies found that participants were aware or had heard of cervical cancer, but had limited knowledge of the causes, risk factors and prevention of the disease (Mwaka, Orach, Were, Lyratzopoulos, Wabinga & Roland 2015:859; Mungai et al 2016:88; Aswathy, Quereshi, Kurian & Leelamoni 2012:207; Getahun, Mazengia, Abuhay & Birhanu 2013:4; Interis, Anakwenze, Aung & Jolly 2016:56).

The study done in Bugiri and Mayuge districts in eastern Uganda, Ndejjo, Mukama, Musabyimana and Musoke (2016:6) found that the independent predictors of cervical cancer screening were: being recommended by a health worker, knowing where screening services were offered, and knowing someone who had ever been screened.

According to Weng, Jiang, Haji, Nondo, and Zhou (2020:3) the married/cohabiting group showed higher acceptance than the divorced/widowed group (60.58% vs 48.97%, P = 0.000). (60.58% vs 48.97%, P = 0.000)

- **Cues to action**

Readiness to action (perceived susceptibility and perceived benefits) is prompted by other factors or cues to initiate action (Glanz & Rimer 2008:49). According to Ndejjo et al (2016:6) one of cue to action was being recommended by a health worker.

The HBM holds that a cue or trigger is necessary for timely involvement in health-promoting behaviours. Readiness to action (perceived susceptibility and perceived benefits) is prompted by other factors or cues to initiate action (Glanz & Rimer 2008:49). Cues to action are events, or environmental events such as media publicity that move people to change their behaviour (Tavafian 2012:7). Thus, women would be more likely to take preventive action of cervical cancer screening if they were encouraged or reminded by family members, friends, mass media or heath care service providers. According to Ndejjo et al (2016:6) one of cue to action was being recommended by a health worker.

Lack of specialized training in cervical cancer care and its management reported as a barrier by the health managers and a health worker that means the knowledge and skills of the health professionals are limited.

## 2.13 SUMMARY

This chapter discussed the literature review undertaken for the study. Chapter 3 describes the research design and methodology.

# CHAPTER 3

# RESEARCH DESIGN AND METHODOLOGY

## 3.1 INTRODUCTION

Chapter 2 discussed the literature review conducted for the study. This chapter discusses the research design and methodology of the study.

Polit and Beck (2017:271) describe research methodology as the “steps, procedures and strategies taken to investigate the problem being studied and to analyse the collected data”. Research methods are “the techniques researchers use to structure a study and to gather and analyse information relevant to the research question” (Polit & Beck 2017:271). The methodology included the study setting, population, sample, and data collection and analysis.

## 3.2 RESEARCH DESIGN

A research design is the overall plan for addressing a research question, including the specifications for enhancing the integrity of the study (Polit & Beck 2014:741). Brink et al (2018:92) describe a research design as “a set of logical steps taken by the researcher to answer the research question”. A research design is an overall plan for identifying and selecting participants, collecting the data pertaining to the research questions, analysing the data and writing the report on the findings (Creswell & Creswell 2018:43).

There are three types of research design, namely qualitative, quantitative, and mixed methods research designs to be different types of inquiry within these different approaches and the choice of research design depends on the nature of the research problem being studied (Creswell & Creswell 2018:43).

## 3.3 MIXED METHOD RESEARCH APPROACHES

Mixed method research design combines qualitative and quantitative approaches to complement each other to provide comprehensive data. Mixed method states that researchers collect and analyse both qualitative and quantitative data in a sequential and/or simultaneous and rigorous manner which integrates the two forms of data (Creswell 2014:32). The researcher considered a mixed methods design appropriate for the study as the combination of qualitative and quantitative data which would provide a deeper understanding of the research problem.

The mixed approach designs classified as explanatory, exploratory sequential, and convergent parallel mixed method approaches. In this study, the researcher used a convergent parallel mixed methods approach, collecting quantitative and qualitative data (Creswell 2014:43). Quantitative data was collected from clients and qualitative data from health care providers Using the two methods provided different perspectives and allowed the researcher to explore the complex issues deeply (Creswell & Creswell 2018:44).

### 3.3.1 Convergent parallel mixed methods approach

The convergence of mixed methods strategy collects both quantitative and qualitative data simultaneously and then analyses the results concurrently to see whether the findings validate or disprove each other (Creswell 2013:44). Convergent of parallel integrated approach is the design of the blended techniques in which the researcher assembles quantitative and qualitative data to provide a detailed evaluation of the research issue (Creswell 2014:43). Accordingly, convergent parallel mixed approaches were used in this study. The researcher collected quantitative and qualitative data simultaneously and incorporated both sets of data into the interpretation of the overall results. The quantitative data was statistically analysed to establish clear predictors, and then triangulated with the qualitative data to be used in the development of the guidelines. The researcher then developed the guidelines to improve utilisation of cervical cancer screening based on the quantitative and qualitative findings.

### 3.3.2 Rationale for conducting the concurrent parallel mixed method

In concurrent/convergent parallel mixed methods research strategies, qualitative and quantitative data are collected, as the name indicates, at the same time or in parallel. This design involves a single study containing qualitative and quantitative data collection which is conducted at the same time.

### 3.3.3 Purpose of concurrent parallel mixed method

The purpose of convergent parallel design mixed methods is to provide a comprehensive analysis of cervical cancer screening utilisation by converging or merging quantitative and qualitative data.

### 3.3.4 Comparative cross-sectional study

A comparative cross-sectional study compares the prevalence of outcomes of interest, such as health, disease, risk factors, disability or death (Ahmad, Marwat & Khan 2013:243). It is a type of non-experimental quantitative research in which the researcher compares two or more groups in terms of a cause (Creswell 2013:41).

The researcher conducted an institutional based comparative study, in six selected health centres with two groups of patients, namely screened and not screened, to identify and compare the knowledge, awareness and perceptions of utilisation of cervical screening among women attending maternal health services at the selected health centres. The influencing factors for cervical cancer screening were compared and analysed between participants who were screened and participants who were not screened. The purpose was to explore the participants' exposure to cervical cancer screening and assess the determinant factors for women in Addis Ababa who attend maternal health services.

## 3.4 QUANTITATIVE AND QUALITATIVE STRANDS: PHASE 1

### 3.4.1 Purpose

The purpose of the study was to investigate factors that determine cervical cancer screening among women in Addis Ababa, Ethiopia.

#### *3.4.1.1 Objectives*

- Identify the determining factors of screening practice for cervical cancer among women in Addis Ababa, Ethiopia.
- Explore and describe health professionals' perceptions of cervical cancer screening utilisation among eligible women in Addis Ababa, Ethiopia.

#### *3.4.1.2 Research questions*

- What are determining factors related to screening for cervical cancer among women in Addis Ababa, Ethiopia?
- What are health professionals' perceptions of cervical cancer screening utilisation among eligible women in Addis Ababa, Ethiopia?

### 3.4.2 Research setting

A setting refers to the "physical site or location used to conduct a study and in which data collection takes place" (Polit & Beck 2017:274). The study was conducted in Addis Ababa, the capital city of Ethiopia. Ethiopia is the oldest independent and second most populous country in Africa. Ethiopia is located at 3 degrees and 14.8 degrees latitude, 33 degrees and 48 degrees longitude in the eastern part of Africa between the Equator and the Tropic of Cancer. It is bordered on the Northeast by Eritrea and Djibouti, on the East and Southeast by Somalia, on the south by Kenya, and on the West and Northwest by Sudan known as the Horn of Africa (Central Statistical Agency [CSA] of Ethiopia 2015:1).

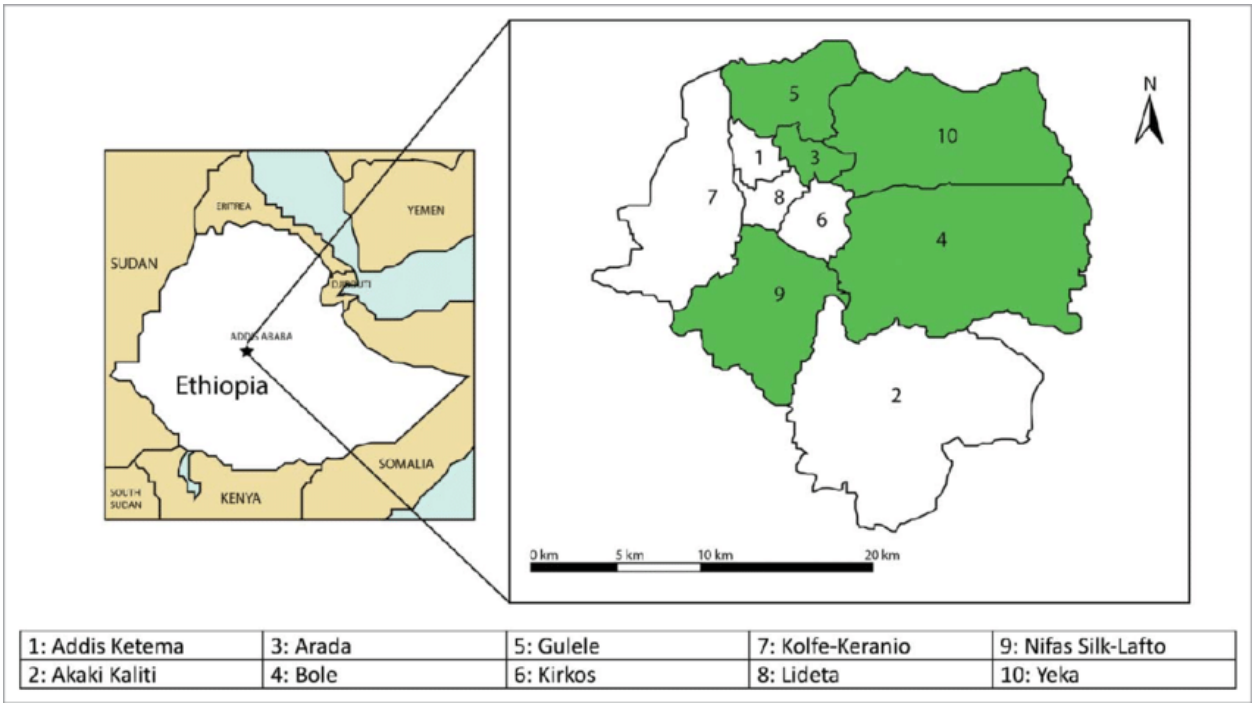


**Figure 3.1 Map of Ethiopia, Addis Ababa**

(Masters, Tefera, Wagner & Boulton 2018:1-8)

Figure 3.1 presents Map of Ethiopia, Addis Ababa. Addis Ababa is the largest city in Ethiopia, with an estimated population of 3,194,000 and an annual growth rate of 3% (Central Statistic Agency 2015:16). The city is administratively divided into 10 sub-cities, 116 *Woredas* (lower administrative units), and 99 *kebeles* (villages), with a total of 42 hospitals, 98 health centres, 359 clinics and 35 health posts in the city, including the private sector (Population Census Commission 2008:1). At the time of the study, 14 public health centres in Addis Ababa were providing cervical cancer screening free of charge. The study was conducted at six (6) selected public health centres, namely Kolfe Keranio, Arada, Kolfe Woreda 9, Semen, Kotebe, and Yeka Woreda 1 health centres. These health centres were selected because they are governmental/public health centres and had started cervical cancer screening free of charge two years before the study period. The quantitative and qualitative data collection was done at the selected health centres.

### 3.4.3 Population sampling and sample methods

#### *3.4.3.1 Population*

A population is “the entire aggregate of cases in which a researcher is interested” (Polit & Beck 2017:273). A study population comprises the entire aggregate of cases in which a researcher is interested (Creswell 2013:50). Walliman (2018:144) also defined study population as a collective term consisting of the total quantity of things which are the subject of the study. It can consist of objects, organisation, people or events to be studied. The researcher used two populations, namely clients and health care providers. In the quantitative phase, the population consisted of all the patients attending maternal health services in the selected health centres who met the inclusion criteria. In the qualitative phase, the population consisted of the health care workers providing the services.

The population for quantitative research included all women who came to the selected health centres for antenatal, family planning, immunisation and postnatal service who visited the selected health centres in Addis Ababa city administration public health centres.

For the quantitative part, women who came for maternal health service during the data collection period and who fulfilled the following inclusion criteria were included in the study.

- Attend maternal health services and agree to participate voluntarily.
- Be aged 18 years or older.
- Have been residents of Addis Ababa for at least one year.

Women with poor health conditions and/or a history of the disease (carcinoma of the cervix) were excluded from the study.

For the qualitative study the population consisted of nurses, midwives and health officers in the health centres. To be included in the study, the respondents had to:

- Be nurses, midwives or health officers working at the selected health centres.
- Have served in the maternal health service units in the health centres for at least one year.

#### *3.4.3.2 Sample and Sampling Method*

The researcher performed sampling for each of the quantitative and qualitative phases of the study. Sampling refers to the practice of choosing incidents in the sample to represent the whole population (Polit & Beck 2017:275). A sample is a population subset. Individual units of the sample and population are referred to as elements. Elements may be in any shape, such as human beings and events. The researcher deals with samples rather than with the whole population. Sample refers to a subset of a population (individuals, elements or objects) or a group selected to act as representative of the population as a whole. The representative samples have all the characteristics of the population (Polit & Beck 2017:275).

Sampling is the selection of a number of study units from a population of interest (Alvi 2016:11). Sampling refers to the practice of selecting a portion of the population in order to describe and analyse the characteristics of the phenomenon under study (Polit & Beck 2017:275).

### 3.4.4 Sample size determination for quantitative and qualitative

#### *3.4.4.1 Sample size determination for quantitative phase of the study*

The sample size of the study is an important consideration in the design of many medical studies. In a comparative research study, the means or proportions of some characteristic in two or more comparison groups are measured. A statistical test is then used to assess whether or not there is a substantial difference between the means or proportions found in the comparison groups (Eng 2003:309).

Since this study was a comparative study, the researcher used the following formula for the sample size n:

n=(Zα/2+Zβ) 2 * (p1 (1-p1) +p2 (1-p2))/ (p1-p2)2 (Sample Size Calculator 2016:1).

Where Zα/2 is the critical value of the Normal distribution at α/2 (e.g. for a confidence level of 95%, α is 0.05 and the critical value is 1.96).

Zβ is the critical value of the Normal distribution at β (e.g. for a power of 80%, β is 0.2 and the critical value is 0.84) and p1 and p2 are the expected sample proportions of the two groups (Charan & Biswas2013:121)

By using two proportion sample size calculation online calculator for the above formula, using the normal distribution at α/2 for a confidence level of 95%, for a power of 80%, ratio of sample size of group 2 to group 1 is 1.5.

$p_1$=56% assuming there is 12 difference $p_2$=44% then the expected sample proportions becomes group 1 (screened)=226 and group 2 (not yet screened)=339 total sample became to 565.

Taking into account the 10% of 565 non-responses which is 56, this added to 565+56 then the total sample size becomes 621. Then the ratio of group 1 took=249 and group took 2=372.

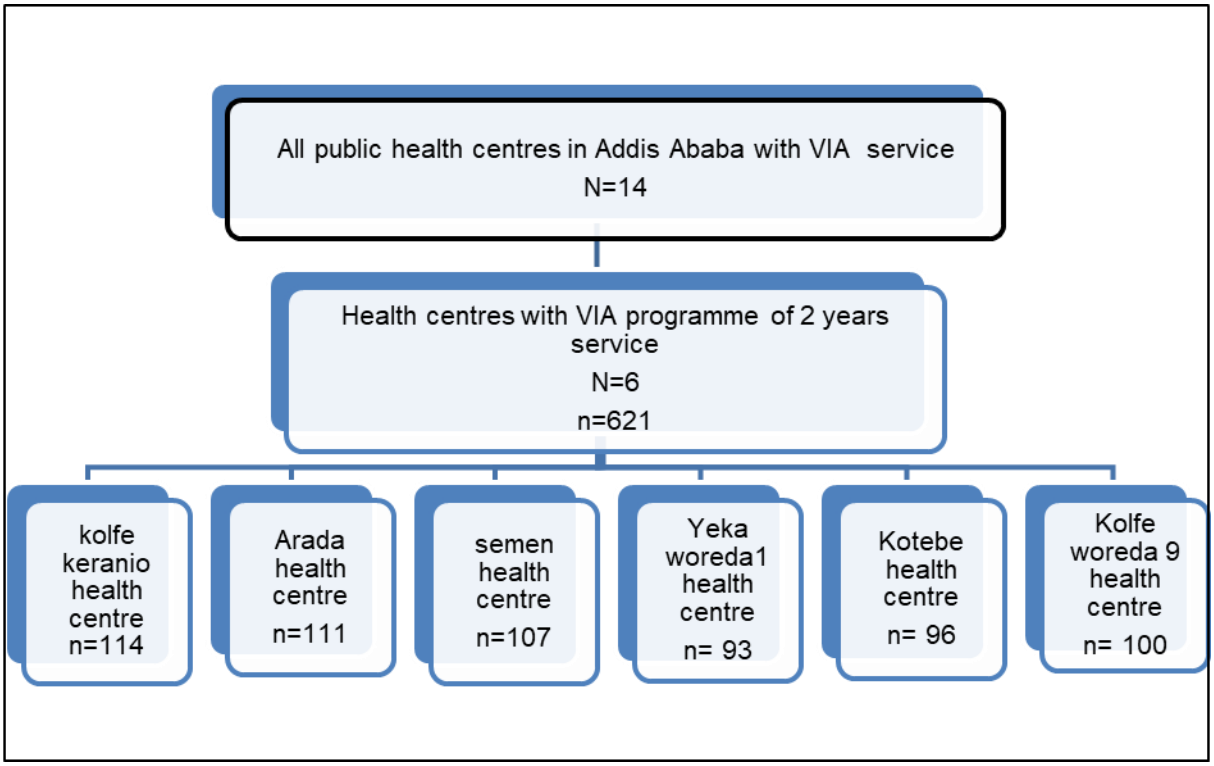


**Figure 3.2 Number of participants from the selected health centres in the study**

First, Stratified sampling was used on the assumption that women come to different unit/service of maternal health in the health centres, namely antenatal care; immunisation; family planning and postnatal unit. The calculated sample size was allocated to each health centre in proportion to the sample size as shown in Figure 3.2. Stratified random sampling allows the random selection of subjects from two or more strata of the population independently (Hoffmann, Bennett & Del Mar 2013:31). Secondly, systematic random sampling was used to select respondent from each randomly selected health centre and came up with a desired sample size of 621. Then: Proportional allocation of sample size was made to each health centre units as shown in Table 3.1 based on records from the health centre and taking the average number of women who visited each unit for each department by using the following formula:

nj=n /N* Nj
nj is sample size of the jth stratum
Nj is population size of the jth stratum
n=n1 + n2 + ...+ nk is the total sample size
N=N1 + N2 + ...+ Nk is the total population size

Then this number was allocated proportionally according to flow of women to each health centre taken from the previous year's performance

**Table 3.1 Number of maternal health care clients in the selected health centres and sample interviewed for qualitative data**

| Health Centres | Population at maternal health units | Sample interviewed/surveyed | | |
|---|---|---|---|---|
| | | Group 1 | Group 2 | Total |
| Kolfe Woreda 9 | 9,628 | 40 | 60 | 100 |
| Arada | 10,576 | 45 | 66 | 111 |
| Semen | 10,212 | 43 | 64 | 107 |
| Yaka Woreda 1 | 8,898 | 37 | 56 | 93 |
| Kolfe Keranio | 10,941 | 46 | 68 | 114 |
| Kotebe | 9,482 | 38 | 58 | 96 |
| **Total** | **59,737** | **249** | **372** | **621** |

Table 3.1 presents the number of maternal health care clients in the selected health centres and sample interviewed for quantitative data

#### *3.4.4.2 Sample size determination for qualitative phase of the study*

Purposive sampling was used to pick the participants in the sample. Purposive sampling involves the selection of information-rich subjects which enhance the credibility of the study (Joubert & Ehrlich 2007:101). In this study the study population for qualitative research included the head of every unit of maternal health services in each health centre. A total of 18 health professionals, namely 8 nurses, 6 midwives, and 4 health officers, who were working at antenatal, family planning, immunisation and postnatal service unit, participated in the study. The selection process involeved using the inclusion critera those who are voluntairs and who are the heads of the units were selected. The researcher performed interviews until no new information was obtained and thus data saturation was reached.

### 3.4.5 Inclusion and exclusion criteria: quantitative and qualitative

Inclusion criteria are the key characteristics of the target population that the researchers will use to answer their research question. Demographic, clinical, and geographic factors are commonly used to determine eligibility. In contrast exclusion criteria are characteristics of potential study participants who meet the inclusion criteria but have special features that may interfere with the study's success or increase their risk of an unfavourable outcome. Characteristics of eligible individuals that make them highly likely to be lost to follow-up, miss scheduled appointments to collect data, provide inaccurate data, have comorbidities that could bias the study's results, or increase their risk of adverse events are common exclusion criteria (Patino and Ferreira 2018:84).

For the quantitative, women who came for maternal health service during the data collection period and who fulfilled the following inclusion criteria were included in the study.

- Attend maternal health services and agree to participate voluntarily.
- Be aged 18 years or older.
- Have been residents of Addis Ababa for at least one year.

Women with poor health conditions and/or a history of the disease (carcinoma of the cervix) were excluded from the study.

For the qualitative study the population consisted of nurses, midwives and health officers in the health centres. To be included in the study, the respondents had to:

- Be nurses, midwives or health officers working at the selected health centres.
- Have served in the maternal health service units in the health centres for at least one year.

### 3.4.6 Data collection instruments

#### *3.4.6.1 Data collection of the quantitative phase of the study*

Data collection is the precise, systematic gathering of information relevant to the research purpose or objectives of the study (Burns & Grove 2009:52; Polit & Beck 2017:276). Data is collected from the respondents by means of a data-collection instrument so that it is objective and systematic (Polit & Beck 2017:276; LoBiondo-Wood & Haber 2006:319).

**Figure 3.3 Data collectors, principal investigator and supervisor at Semen Health Centre**

Figure 3.3 shows the data collector supervisor (left), researcher (middle), the two with the white gown were the data collectors (right)

The researcher selected and trained data collectors who had completed a Bachelor's degree in Health Studies and who has experience in research assisstance. Data has been collected by 12 data collectors two in each health centre and supervised by the researcher and a data collector supervisor. The data was collected from the respondents at the selected health centres that provide antenatal care, family planning, immunisation, and post-natal care from December one, to thirty, 2018 (from 1-30/12/2018). The quantitative data was collected by 12 research assistants, using a questionnaire. The researcher conducted a two-day training programme with the research assistants and supervisors having informed them of the purpose of the study and the ethical considerations.

**Variables**

The *Oxford Advanced Learner's Dictionary* (2010:1650) defines *variable* as "(noun) a situation, number or quantity that can vary or be varied". Creswell (2013:84) describes a variable as a characteristic of a person, object, or observable fact, which can take on different values. These may be in the form of numbers or non-numerical characteristics. Variables are classified as independent or dependent. Independent variables influence outcome measures. Dependent variables are influenced by the independent variables. Dependent variables may be what a researcher is trying to predict and are the result of the influence of independent variables. Dependent variables are also referred to as criteria, outcomes, and effect-and-response variables.

In this study, the main outcome (dependent) variable of interest was the respondents' history of having been screening at least one in their lifetime. Predictor variables of interest included socio-demographic and fertility health-related background, awareness and knowledge of cervical cancer, prevention and cervical cancer screening, risk behaviours and perceptions (perceived susceptibility, perceived seriousness, perceived barriers, perceived benefits, and cues to action) of cervical cancer and screening.

#### *3.4.6.2 Data collection of the qualitative phase of the study*

The researcher selected key informant interviews to collect qualitative data in order to obtain the respondents' experience and perceptions of women's practice of cervical

cancer screening. Key informant interviews provide first-hand information on research topics (Mack et al 2011:3).

Key informant interview is described as an exchange of information between a researcher and a respondent; health professionals to make reasonable data by encouraging them freely discuss their lives to generate facts about their thoughts, views, values, attitudes, and beliefs regarding their private experience related to cervical cancer screening (Saldaña 2011:32).

In this study, data was collected in face-to-face key informant interviews, using a semi-structured interview guide. Semi- structured questions were used to probe the persons to grant responses. The researcher collected the qualitative data in interviews from health professional participants at the selected health centres, using a semi-structured interview guide. Field notes were taken and interviews were recorded with an audio tape recorder at the permission of the respondents. The audio records and the field notes were fully transcribed and analysed as soon as possible following the interviews. This helped the researcher to make necessary adjustments for the subsequent interview.

The researcher translated the Amharic transcripts into English verbatim. The researcher's colleague who fluently speaks both English and Amharic checked the consistency between the Amharic transcripts and its English version. The participation of the researcher in the translation process helps to familiarise with the emerging concepts and themes.

### 3.4.7 Data-collection instrument

Data is collected from the respondents by means of a data-collection instrument (Polit & Beck 2017:278). In this study, the researcher developed two data-collection instruments: a survey-type questionnaire for quantitative data from the clients, and interview guide for qualitative data from the health service providers.

#### *3.4.7.1 Data-collection instrument for quantitative data*

A quantitative study is a formal, objective and systematic process to describe relationships and examine cause-and-effect interaction among variables (Burns & Grove 2011:747). In quantitative studies, researchers use structured data-collection instruments and statistical data analysis (Polit & Beck 2012:16). A survey design instrument describes a population's trends, attitudes and opinions (Creswell & Creswell 2018:147). In this study the data collectors collected quantitative data by completing the questionnaires with the clients' participants.

A questionnaire is a written list of questions to be answered by participants in a study (Kumar 2011:138). Participants read or hear the questions, interpret what is expected and then give the answers.

In this study, the researcher developed a questionnaire based on the literature review and the HBM (Abraham & Sheeran 2015:31). The questionnaire was prepared in English and translated to the local Amharic language so that the participants could answer the questions in a language that they understood. The answers were translated back into English. The questionnaire consisted of four sections as follows:

- Section I Participants' socio demographic and health profile
- Section II Awareness and knowledge of cancer and cervical cancer
- Section III Practice of cervical cancer screening
- Section IV Perception of cervical cancer and screening
    - Perceived susceptibility
    - Perceived seriousness/severity
    - Perceived benefits
    - Perceived barriers
    - Cues to action

Knowledge level measured were adapted and modified from Bloom's cut of points Aschalew and Dube (2019:2) as follows:

- 80-100%: good knowledge

- 60-79%: moderate knowledge
- less than 60%: poor knowledge

For the knowledge part of the questions, any two correct answerers were scored 2, one correct answer was scored 1 and 0 for wrong and don't know answers.

A 5-point Likert scale was used in the sections on perceived susceptibility. The Likert scale is used to indicate how often people agree or disagree with given statements (McLeod 2019:1). 5-Point Likert scale is a type of psychometric response scale in which responders specify their level of agreement to a statement typically in five points: (1) Strongly disagree; (2) Disagree; (3) Neither agree not disagree; (4) Agree; (5) Strongly agree (Preedy & Watson 2010:4288).

### 3.4.8 Pilot study

A pre-test or pilot study is a trial run to determine whether the instrument is clearly worded and free from major biases and whether it solicits the desired information (Brink et al 2018:94). It provides an opportunity to try out the technique or instructions that will be used with an instrument, especially if the instrument has not been used with a specific population, as in the case of this study. Kumar (2011:158) adds that the pretesting of the data-collection instrument should be carried out under actual field conditions on a group of individuals similar to the study population.

The purpose is to identify problems that the potential respondents might have in understanding or interpreting any questions as well as to estimate the time needed to fill out the questionnaire. Pre-testing the instrument allows researchers to critically examine the questions and their meaning, and identify whether different respondents interpret a question differently (Kumar 2011:158). According to LoBiondo-Wood and Haber (2014:305), pre-testing identifies problems in the design and sequencing of questions, and determines the instrument's reliability and validity. Accordingly, in order to ensure that the questions measured what they were intended to measure, the questionnaire was tested in a pre-test on 30 participants who were not involved in the main study. Based on the feedback, the researcher reviewed and refined the questionnaire.

Modification of the questionnaire was performed according to the results of the pilot study. Women who participated in the pilot study were excluded from the main study.

### 3.4.9 Data collection quantitative and qualitative research

#### *3.4.9.1 Quantitative data collection process*

For the quantitative data collection process twelve data collectors with BSc in health studies were responsible for gathering quantitative data. Approximately 621 women who came to randomly selected health centres for antenatal, family planning, immunisation and postnatal services and who met the inclusion criteria. Six data supervisors and 12 data collectors took part in the quantitative study. The researcher conducted a two-day training programme with the research assistants, having informed them of the purpose of the study and the ethical considerations, inclusion and exclusion criteria and data collection processThe supervisors were in charge of monitoring and addressing the problems of research assistants in the data collection process. The supervisors coordinated the required logistics for data collection prior to the date of data collection. The data collectors were directed to their project areas and to the people who led them on the field. From the first day on, the supervisors went around and instructed the research assistants to comply with the Data Collection Guidelines to ensure the accuracy of the data and to provide additional technical assistance over the phone. At the end of the day, supervisors checked the completeness and accuracy of the completed data collection instruments. They also discussed the enumerator and took the field notes of the day's achievements and the challenges they encountered.

#### *3.4.9.2 Qualitative data collection process*

For the qualitative data collection process key informants' interview with health care providers were used. The researcher and two other research assistants with qualitative data collection experience have collected the data.

For the qualitative data collection, semi-structured questions were used to probe for people to give answers. A field note was taken and interviews were conducted with an audio tape recorder with the permission of the respondents.


**Figure 3.4 A data collector completing a questionnaire with a participant at Kolfe Woreda 9 Health Centre**

## 3.5 VALIDITY AND RELIABILITY: MEASURES TO ENSURE TRUSTWORTHINESS

Validity and Reliability in research refer especially to measurements in the data used to answer the question of research, and the key question for identifying the reliability and validity of data is the instrument that measures the study variables (Burns et al 2013:389). In this study, the researcher developed the quantitative and qualitative data-collection instruments based on models and the literature review.

### 3.5.1 Validity

Validity refers to the degree to which an instrument accurately measures what it is intended to measure (Polit & Beck 2017:582). Validity determines whether the research instrument truly measures that which it was intended to measure or how truthful the research results are. According to Kumar (2011:168), validity is the process of establishing the appropriateness, quality and accuracy of the procedures which a researcher adopted for finding answers to the research questions. Validity can apply to the research process as a whole or to any of its steps: study design, sampling strategy,

conclusions drawn, the statistical procedures applied, or the measurement procedures used. In terms of measurement procedures, therefore, validity is the ability of an instrument to measure what it is designed to measure (Smith 1991:106).

#### *3.5.1.1 Types of validity in quantitative research*

In this study, the researcher ensured internal, external, and content and face validity.

**Internal validity**

Internal validity is concerned with the congruence of the research findings with the reality. It deals with the degree to which the researcher observes and measures what is supposed to be measured (Zohrabi 2013:258). In this study, to boost the internal validity of the research data and instruments, the researcher used triangulation of the data and findings. Moreover, the researcher gave for two experienced researchers to review and comment on the interview questionnaire.

**External validity**

External validity is the extent to which the findings can be generalised to other groups and settings (Heale & Twycross 2015:66). The findings of this study could be generalised to most areas of Addis Ababa city with similar demographic and socio-economic status. The findings should also be important to other regions of Ethiopia.

**Content and face validity**

Content validity refers to whether the items or questions measure what the instrument is supposed to measure (Polit & Beck 2017:458). Content validity refers to the extent to which the instrument represents the factors of the study (Heale & Twycross 2015:66). Each aspect should be equally represented in the questions or items.

Face validity reveals the logical link between the questions and the objectives of the study. Face validity basically verifies that the instrument gives the appearance of measuring the concept (LoBiondo-Wood & Haber 2006:315; Heale & Twycross 2015:66).

The researcher conducted a pre-test to ensure instrument validity and measure the effectiveness of the data collection instrument. Pretesting is the process of evaluating the questionnaire and survey procedures in advance to assess whether they will cause problems for respondents and interviewers and whether the survey will meet its intended objectives (Presser, Couper, Lessler, Martin, Rothgeb & Singer 2004:109). Presser et al (2004:109) add that the purpose of pretesting includes determining whether:

- The instrument will elicit responses required to achieve the research objectives.
- The content of the instrument is relevant and adequate.
- The wording of questions is clear and suited to the understanding of the respondents.
- The question structure and sequencing is consistent.

In this study, the researcher administered the quantitative questionnaire to 30 participants who were not involved in the main study. The researcher modified the content, question structure and sequencing based on the pre-test findings. The findings from the pre-test were not included in the statistics of the main study. All necessary adjustments on the interview questions and on the overall approach of the questions were corrected as deemed important.

#### *3.5.1.2 Trustworthiness/rigour in qualitative research*

Trustworthiness refers to the confidence that qualitative researchers have in their data, using the strategies of credibility, dependability, conformability, and transferability (Polit & Beck 2017:220; Kumar 2011:184).

**Credibility**

Credibility refers to the believability of the results from the participants' perspective. Accordingly, the researcher ensured that the results reflected the participants' experiences and views (Polit & Beck 2017:787).

**Dependability**

Dependability refers to the achievement of similar results if the study were conducted again (Kumar 2011:184). Triangulation ensured the dependability and transferability of the study findings. Transferability refers to the degree to which the results of qualitative research can be generalised or transferred to other contexts or settings (Kumar 2011:184). In this study triangulation was introduced as a technique to incorporate qualitative and quantitative advantages and to enhance the quality of the assessment and results (Dang 2015:11).

**Conformability**

Conformability reduces researcher bias (Polit & Beck 2017:723). Conformability refers to the degree to which the results could be confirmed by other independent reviewers (Polit & Beck 2017:724; Kumar 2011:184. The interview transcriptions and audio recordings served as evidence of the participants' views.

**Transferability**

Transferability is the degree to which the findings can be transferred to have applicability in different settings or organisations (Polit & Beck 2012:585; Kumar 2011:184). Triangulation ensured the dependability and transferability of the study findings.

### 3.5.2 Reliability

Reliability refers to "the degree of consistency or dependability with which the instrument measures the attribute it is designed to measure. The instrument is reliable; the results will be the same each time the test is repeated" (Polit & Beck 2017:194). According to Kumar (2011:168), reliability is the level to which the research tool yields the same results on repeated applications. Therefore, reliability is the degree of accuracy or precision in the measurements made by a research instrument.

According to Kumar (2011:169), reliability can be affected by the physical setting, the respondent's mood, the interviewer's mood and the nature of interaction in the

interview. Reliability of a study can be determined using internal and external consistency methods.

**External** consistency compares findings from two independent processes of data collection with each other as a means of verifying the reliability of the measure.

**Internal** consistency determines that items or questions measuring the same phenomenon, if they are reliable indicators, should produce similar results irrespective of their number in an instrument.

According to Heale and Twofold (2015:67), Cronbach's α is the most commonly used test to determine the internal consistency of an instrument. In this test, the average of all correlations in every combination of split-halves is determined. Instruments with questions that have more than two responses can be used in this test. The Cronbach's α result is a number between 0 and 1. The alpha of 0.7 in Cronbach's α is considered acceptable (Burns & Grove 2005:374). In this study Cronbach's alpha calculation was found to be 0.795, which indicated a high level of internal consistency (Table 3.2).

**Table 3.2 Reliability statistics of Cronbach's Alpha result**

| Cronbach's Alpha | Cronbach's Alpha based on standardised items | N of Items |
|---|---|---|
| .795 | .792 | 8 |

## 3.6 RESPONDENTS AND PARTICIPANTS QUALITATIVE AND QUANTITATIVE RESEARCH

In quantitative research survey respondent is appropriately referred to as a "respondent" because that is exactly the role they play in the research process. They're answering the researcher's questions, which are usually structured and closed-ended. Similarly, the qualitative research participant is appropriately referred to as a "participant" because their role extends beyond simply answering a series of questions to include participation in the research on different levels. The participant explains on the interviewer's/moderator's questions, changes the topic if need be to convey an idea, takes part in a social relationship with the interviewer/moderator, engages with other participants in a focus group discussion, is willingly observed in an ethnographic study,

and, in some instances, is asked to aid in the analysis. For all of these reasons (and more), it is research participants, not respondents, who provide qualitative data (Roller and Lavrakas 2016:16.)

### 3.6.1 Ethical consideration

Research that is carried out with human participants requires careful consideration of ethical issues that may also occur at some point during the duration of the study. While there are no acknowledged harms related to this research, the researcher shall observe and be guided through moral principles. Ethics research is linked to the morality of research from the beginning to the completion and publication of results (Babbie 2008:66). Trust in research results in trust in the integrity of researchers and the reliability of their scientific work. Science must remain reliable; researchers must follow basic moral principles (Rivera & Borasky 2009: 6). The researcher obtained permission to conduct the study and upheld the principles of autonomy, anonymity and confidentiality, permission, informed consent and beneficence.

- **Permission**

The researcher obtained approval and permission to conduct the study from the Ethics and Research Committee of the Department of Health Studies at the University of South Africa (see Annexure A). Written permission was also obtained from the Regional State Health and Ethical Administration Office of Addis Ababa for the study to be conducted at the selected health centres (see Annexures B and C).

- **Informed consent**

Informed consent protects individuals' right to autonomy because participants knowingly and voluntarily consent to participate (Fouka & Mantzorou 2011:4). In this study, the participants were informed of the purpose of the study, their role in the study, and the approximate time required for completing the questionnaire. The participants were assured of confidentiality and anonymity because their names would not be filled in on the questionnaires. Moreover, for the qualitative part the data collectors informed the respondents that participation was voluntary, they could refuse to answer any

questions, and they could withdraw from the study at any time should they wish to do so.

The researcher collected qualitative data from the health professional participants after explaining the purpose of the study, arranging the time and place convenient for their interviews.

Informed consent was obtained from all the participants (see Annexure F).

- **Anonymity and confidentiality**

The participants were assured of anonymity and confidentiality. No names were provided on the questionnaires. All the questionnaires were numbered and no information given could be traced to any participant. Confidentiality and anonymity is closely connected to respect for the human dignity. Sharing information about a respondent with others for purposes other than research is unethical (Akaranga & Makau 2016:6).

- **Beneficence**

The principle of beneficence requires researchers to do good and above all do no harm. Beneficence imposes a duty on researchers to minimise harm to study participants and maximise benefits (Polit & Beck 2017:139).

The participants were not exposed to any discomfort and were told that they would not necessarily benefit from participating in the research, but that their involvement would enable health care professionals to take a better approach to the cervical cancer screening programme (Fouka & Mantzorou 2011:5).

- **Justice**

Justice requires a fair and equal distribution of the benefits and risks of participating in a research study. According to this principle, all research participants were treated fairly. (Rivera & Borasky 2009:9). This provides special protection to disadvantaged groups.

Since this was not an intervention or experimental study, there was no anticipated major risk to the participants in this study.

In this specific research, the researcher ensured that the rights of the participants are treated fairly/equally through the application of a systematic random sampling technique to select the study participants and purposive sampling technique for qualitative study. The researcher also applied the same types of assessment tools and methods for all participants.

## 3.7 DATA ANALYSIS QUANTITATIVE AND QUALITATIVE RESEARCH

Analysis of quantitative data is a methodological way in which the researcher transforms data collected into numerical data (Burns & Grove 2011:290).

### 3.7.1 Data processing and analysis for quantitative study

Data entry and analysis for quantitative part was done using Statistical Package for Social Sciences (SPSS) version 23 program. The results from the data analysis and interpretation were presented in the form of frequency tables, percentages, graphs and diagrams correlation analysis was also determined. Chi-square ($X^2$) was used to explore the significance and relationships between the variables in this study. The level of statistical significance was set at p-value <0.05 with 95% confidence interval. The level of statistical significance was set at p-value <0.05 with 95% confidence interval (detail part presented in Chapter 4).

### 3.7.2 Data processing and analysis for qualitative study

Qualitative research is interpretative and involves researchers in a close relationship with the participants (Creswell & Creswell 2018:183). Qualitative data analysis commences with data collection, and involves specific to general steps (Creswell & Creswell 2018:183). The researcher organised and prepared the data. First, the researcher transcribed the interviews verbatim and compared the transcriptions with the recordings. The researcher read all the transcriptions carefully to get an overall picture and jotted down ideas as they came to mind in order to develop codes (Creswell &

Creswell 2018:196). Coding is a process of organising data by bracketing chunks and writing a word representing a category in the margin.

The researcher identified topics and themes that emerged from the data in the transcriptions. Topics that related to each other were grouped together and themes identified. The researcher wrote topics next to appropriate segments of text, checking to see whether new themes emerged. The topics were turned into categories by finding descriptive wording, final abbreviations for categories, and arranging them alphabetically. Codes were formulated for each theme developed. The researcher used the computer software program ATLAS ti to code the data.

## 3.8 SCIENTIFIC INTEGRITY OF THE RESEARCH

To maintain scientific integrity and eliminate the possibility of scientific misconduct and plagiarism, the researcher followed the steps mentioned in Rivera and Borasky (2009:61). Hence, the researcher preserved primary data and documentation during the study. When citing ideas, words, processes, findings and results obtained by other authors, a clear reference was made to the respective sources. Important results which were contrary to the researchers' results and conclusions were cited and discussed. Besides, the limitation of the research methods was recognised and properly documented and reported in chapter 7.

The initial review of the research protocol was received from the Health Studies Research Ethics Committee (HSREC) of the UNISA Department of Health Studies (REC-012714-039) (NHERC). After reviewing the informed consent documents and data collection tools, the committee approved the protocol in addition to the research protocol (see Annexure A). Rivera and Borasky (2009:61) suggest that researchers are responsible for ensuring that no individual will be involved in the study prior to obtaining informed consent. The guideline of the council for international organizations of medical sciences (CIOMS) also states that the researcher has a duty to inform prospective subjects of all the information necessary for adequate informed consent. In particular, the researcher had an obligation to protect the confidentiality of the study participants (Rivera & Borasky 2009:61). In this study, the researcher was honest to accomplish the integrity of the research by adhering to study procedures, and by being transparent in the identification and management of conflict of interest,

## 3.9 BRIEF DEVELOPMENT OF GUIDELINES: PHASE 2

The guidelines were developed to enhance cervical cancer screening service utilization among women in Ethiopia. The guidelines provided recommendations addressing the themes, categories and sub-categories identified by the study. The guidelines were developed based on the findings from the interview conducted with women to assess the views and experiences on cervical cancer screening and findings from the interview conducted with health care professionals to assess the perception and experiences on clients' utilisation to cervical screening. The guidelines can be utilised by policy makers, health service managers, and health service providers at different levels of the health system.

## 3.10 BRIEF VALIDATION OF GUIDELINES: PHASE 3

The draft guidelines were reviewed by senior public health experts to make sure that the recommendations are feasible and in line with the country's context. Criteria consist of issues on Clarity and presentation, Specificity, Reliability, Effectiveness, Validity, Achievability: Relevance: Applicability (OECD 2021:36) was distributed to experts to evaluate the draft guidelines. Then, the guidleliens were finalised incorporating the evaluation and comments from the expertise.

## 3.11 SUMMARY

This chapter described the research design and methodology, study population, sample size, data collection and data analysis of the study. Chapter 4 discusses the quantitative data analysis and interpretation and findings.

# CHAPTER 4

# QUANTITATIVE DATA ANALYSIS AND INTERPRETATION

## 4.1 INTRODUCTION

Chapter 3 described the research design and methodology of the study. This chapter discusses the quantitative data analysis and interpretation. The purpose of the study was to develop guidelines to improve the utilisation of cervical cancer screening by women in Ethiopia. In order to do so, the aim was to determine the factors that impacted the uptake of cervical cancer screening among women in Addis Ababa, including socio-demographic and socio-economic circumstances and perceptions that facilitated or prevented screening.

The quantitative data was obtained from patient participants (screened and not screened) at the selected health centres.

## 4.2 PRESENTATION AND DISCUSSION OF QUANTITATIVE FINDINGS

Burns and Grove (2011:535) describe data analysis as the technique used to reduce, organise and give meaning to data. It is the process of gathering, modelling, and analysing data in order to extract insights that can be used to make decisions. Depending on the research type and the goal of the analysis, there are various methods and techniques for performing analysis (Durcevic 2020:1).

Quantitative data analysis is the statistical manipulation of numerical data for the purpose of describing phenomena or making inferences about how phenomena are related (Polit & Beck 2010:565). In this study, a face-to-face survey using a structured questionnaire was used to gather quantitative data. A total of 609 respondents took part in the study.

The questionnaire had a covering page explaining the purpose of the study, data collection, the right to anonymity and confidentiality and to leave the study at any time should they wish to do so. Participants who agreed to participate voluntarily then signed

informed consent. The questionnaire consisted of four sections. Section A covered the respondents' socio-demographic profile and health background; section B covered their awareness and knowledge of cervical cancer; section C covered their practice of cervical cancer screening, and section D covered their perceptions of cervical cancer and screening.

The quantitative data was analysed using the SPSS version 23 for Windows program. All the variables were entered numerically on an SPSS spread sheet. Descriptive statistics such as frequencies and percentages and inferential statistics such as chi square test and independent sample t-tests; and spearman rank correlation were presented. The chi-square test for independence, also called Pearson's chi-square test or the chi-square test of association, is used to discover if there is a relationship between two categorical variables. Independent sample t-tests were made to see if there is a significant difference in average rating of a variable between two groups. The level of statistical significance was set at $p$-value <0.05. Control for potential confounders such as age and socioeconomic class of respondents was done by placing our respondents in different categories. The adjusted odds ratio and 95% confidence interval were obtained to determine factors that were significantly associated with uptake of cervical cancer screening programs among our respondents

### 4.2.1 Respondents' demographic information

**Table 4.1 Selected health centres and number of respondents**

| Health centre | Frequency | % |
|---|---|---|
| Kolfe Woreda 9 Health Centre | 100 | 16.4 |
| Arada Health Centre | 107 | 17.6 |
| Semen Health Centre | 103 | 16.9 |
| Yeka Woreda 1 Health Centre | 91 | 14.9 |
| Kolfe Keranio Health Centre | 112 | 18.4 |
| Kotebe Health Centre | 96 | 15.8 |
| **Total** | **609** | **100.0** |

Table 4.1 presents the number of respondents from each of the selected health centres. A total of 609 patient respondents participated in the study. The respondents were selected at each of the six participating health centres. Of the respondents, 16.4% (n=100) were from Kolfe Woreda 9 Health Centre; 17.6% (n=107) were from Arada

Health Centre; 16.9% (n=103) were from Semen Health Centre; 14.9% (n=91) were from Yeka Woreda1 Health Centre; 18.4% (n=112) were from Kolfe Keranio Health Centre, and 15.8% (n=96) were from Kotebe Health Centre. The respondents were composed of 233 screened and 376 not screened women.

### 4.2.2 Respondents' socio-demographic profile and screening status

Table 4.2 presents the respondents' socio-demographic data covered their age, marital status, educational level, occupation, ethnic group and monthly income.

**Table 4.2 Respondents' socio-demographic profile and screening status (N=609)**

| Factors | Classification | Screening status | |
|---|---|---|---|
| | | **Screened N (%)** | **Not screened N (%)** |
| Age in years | 18-24 years | 7 (3%) | 88 (23.4%) |
| | 25-34 years | 140 (60.1%) | 227 (60.3%) |
| | 35-44years | 84 (36%) | 57 (15.2%) |
| | Above 44 years | 2 (0.9%) | 4 (1.1%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Marital status | Single | 42 (18%) | 109 (29%) |
| | Married | 149 (64%) | 233 (62%) |
| | Divorced/separated | 32 (13.7%) | 28 (7.4%) |
| | Widowed | 10 (4.3%) | 6 (1.6%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Educational level | No education | 22 (9.4%) | 28 (7.4%) |
| | Primary | 81 (34.8%) | 154 (41%) |
| | Secondary | 50 (21.5%) | 96 (25.5%) |
| | College and above | 80 (34.3%) | 98 (26.1%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Occupation | Housewife | 65 (27.9%) | 112 (29.8%) |
| | Government employee | 95 (40.8%) | 102 (27.1%) |
| | Private employee | 62 (26.6%) | 126 (33.5%) |
| | Daily labourer | 11 (4.7%) | 36 (9.6%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Ethnic group | Amhara | 85 (36.5%) | 144 (38.3%) |
| | Oromo | 42 (18%) | 98 (26.1%) |
| | Tigrie | 40 (17.2%) | 36 (9.6%) |
| | Southern Nations | 66 (28.3) | 97 (25.7%) |
| | Other | 0 | *1 (0.3%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Monthly income | <400 birr | 23 (9.9%) | 25 (6.6%) |
| | 401-999 birr | 44 (18.9%) | 67 (17.8%) |
| | 1000 and above | 102 (43.8%) | 177 (47.1%) |
| | Not known | 64 (27.4) | 107 (28.5%) |
| | Total | 233 (100%) | 376 (100%) |

* Afar

- **Respondents' age**

The mean age of the respondents was 30 ± 5.7 years. Of the screened respondents, 60.1% (n=140) were 25-34 years old; 36% (n=84) were 35-44; 3% (n=7) were 18-24, and 0.9% (n=2) were over 44 years old. Of the not screened respondents, 60.4% (n=227) were 25-34 years old; 23.4% (n=88) were 18-24; 15.1% (n=57) 35-44, and 1.9% (n=4) were over 44 years old.

- **Marital status**

Of the screened respondents, 64% (n=149) were married; 18% (n=42) were not married, 13.7% (n=32) were divorced/separated, and 4.3% (n=10) were widowed. Of the not screened respondents, 62% (n=233) were married; 29% (n=109) were not married; 7.4% (n=28) were divorced/separated, and 1.6% (n=6) were widowed.

- **Educational level**

About 9.4% (n=22) of screened and 7.4% (n=28) of not screened respondents had no education. Of the screened respondents, 34.8% (n=81) were attended primary education, 21.5% (n=50) attended secondary education and 34.3% (n=80) attended College and above educational level. Of not screened respondents, 41% (n=154) were found at primary level of education, 25.5% (n=96) attended secondary education and 26.1% (N=98) attended College and above educational level.

- **Occupation**

Of the screened respondents, 27.9% (n=65) were housewives; 40.8% (n=95) were government employees; 26.6% (n=62) were private employees; and 4.8% (n=11) were daily labourers. Of the respondents who were not screened, 29.8% (n=112) were housewives; 27.1% (n=102) were government employees, 33.5% (n=126) were private employees; 9.6% (n=36) were daily labourers.

- **Ethnic group**

Of the screened respondents, 36.5% (n=85) were Amhara; 28.3% (n=66) were Southern Nations; 18% (n=42) were Oromo, and 17.2% (n=40) were Tigrie. Of the respondents who were not screened, 38.3% (n=144) were Amhara; 26.1% (n=98) were Oromo; 26.1% (n=98) were Southern nations; 9.6% (n=36) were Tigrie, and 0.3% (n=1) was Afar (Table 4.2).

- **Monthly income**

Of the screened respondents, 9.9% (n=23) reported as they earned <400 birr; 18.9% (n=44) earned between 401-999 birr and 43.8% (n=102) reported as they earned 1000 birr and more per month, while 27.4% (n=64) did not know their monthly income. Of the respondents who was not been screened, 6.6% (n=25) reported as they earned <400 birr; 17.8% (n=67) earned between 401-999 birr, 47.1% (n=177) earned 1000 birr and more per month; and 28.5% (n=107) did not know their monthly income.

### 4.2.3 Respondents' reproductive health information

The respondents' reproductive health data covered contraceptive use, type of contraceptive methods, number of children, age at menarche and first sexual intercourse, age at first pregnancy, number of sexual partners, and miscarriages.

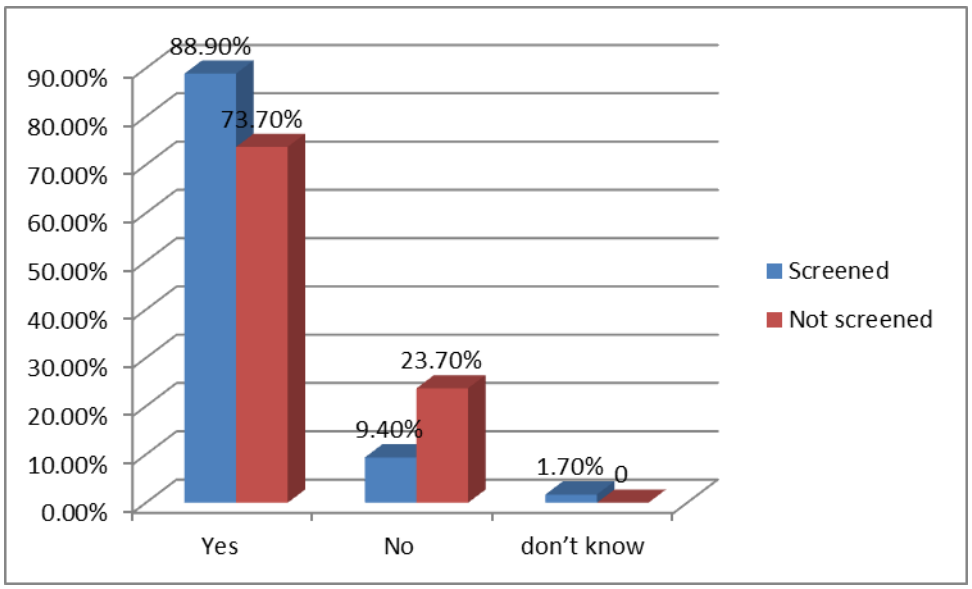


**Figure 4.1 Respondents' use of contraceptives and screening status**

- **Use of contraceptive methods**

Figure 4.1 presents the respondents' use of contraceptives and screening status. Of the screened respondents, 88.9% (n=207) used contraceptives; 9.4% (n=22) did not use contraceptives, and 1.7% (n=4) did not answer the question. Of the not screened respondents, 73.7% (n=277) used contraceptives; 23.7% (n=89) did not use contraceptives, and 2.6% (n=10) did not answer the question.

**Table 4.3 Respondents' age at first pregnancy, and screening status**

| Factor | Classification | Screening status | |
|---|---|---|---|
| | | Screened N (%) | Not screened N (%) |
| Age of woman at first pregnancy | <15 years | 16 (6.9%) | 15 (4%) |
| | 15-18 years | 84 (36%) | 113 (30%) |
| | >18 years | 115 (49.4%) | 186 (49.5%) |
| | No response | 18 (7.7%) | 62 (16.5%) |
| | **Total** | **233 (100%)** | **376 00%)** |

Table 4.3 indicates the respondents' age at first pregnancy and their screening status of respondents. Of the screened respondents, 49.4% (n=115) were over 18 years old at their first pregnancy; 36% (n=84) were between 15 and 18 years old, and 6.9% (n=16) were age below 15 years old. Of the not screened respondents, 49.5% (n=186) were over 18 years old at their first pregnancy; 30% (n=113) were between 15 and 18 years old, and 4% (n=15) were below 15 years old.

**Table 4.4 Respondents' reproductive health information and screening status**

| Factors | Classification | Screening status | |
|---|---|---|---|
| | | Screened N (%) | Not screened N (%) |
| What was your age at menarche? | <14 years | 85 (36.5%) | 127 (33.8%) |
| | 14-15 years | 113 (48.5%) | 203 (54) |
| | >15 years | 26 (11.2%) | 25 (6.6%) |
| | No response | 9 (3.8%) | 21 (5.6%) |
| | **Total** | **233 (100%)** | **376 (%)** |
| Age of woman at first intercourse | <15 years | 23 (9.9%) | 33 (8.8%) |
| | 15-18 years | 85 (36.5%) | 145 (38.6%) |
| | >18 years | 113 (48.5%) | 158 (42%) |
| | No response | 12 (5.1%) | 40 (10.6%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Have you had any miscarriages? | Yes | 64 (27.5%) | 76 (20.2%) |
| | No | 150 (64.4%) | 262 (69.7%) |
| | No response | 19 (8.1%) | 38 (10.1) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Have you been using birth control contraceptives | Yes | 207(88.9%) | 277(73.7%) |
| | No | 22(9.4%) | 89(23.7%) |
| | No response | 4(1.7%) | 10(2.6%) |
| Type of contraceptive used | Hormonal contraceptives | 152 (73.5% | 229(82.7%) |
| | Barrier methods | 46(22.2%) | 30(10.8%) |
| | Mixed methods | 9(4.3%) | 14(5.1%) |
| | No response | - | 4(1.4%) |
| | **Total** | **207 (100%)** | **277 (100%)** |
| Number of children | None | 21 (9.1%) | 122 (32.4%) |
| | One | 40 (17.2%) | 98 (26.1%) |
| | Two to four | 136 (58.3%) | 125 (33.2%) |
| | Above four | 33 (14.1%) | 28 (7.5%) |
| | No response | 3 (1.3%) | 3 (0.8) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Do you have more than one sexual partner? | Yes | 94 (40.3%) | 107 (28.5%) |
| | No | 132 (56.7%) | 251 (66.7%) |
| | No response | 7 (3%) | 18 (4.8%) |
| | **Total** | **233 (%)** | **376 (100%)** |

Table 4.4 indicates respondents' reproductive health information and screening status. Th description presented as follows.

- **Age at menarche and first sexual intercourse**

Of the screened respondents, 48.5% (n=113) reported that they had menarche at the age of 14-15 years; 36.5% (n=85) had menarche before the age of 14, and 11.2% (n=26) had menarche after 15 years of age. Of the not screened respondents, 33.8% (n=127) had menarche before the age of 14; 54% (n=203) had menarche at 14-15

years of age; 6.6% (n=25) had menarche after 15 years of age, and 5.6% (n=21) did not answer the question.

Of the screened respondents, 48.5% (n=113) started sexual intercourse after the age of 18 years; 36.5% (n=85) started at 15-18 years old; 9.9% (n=23) started before the age of 15, and 5.1% (n=12) did not answer the question. Of the not screened respondents, 42% (n=158) started sexual intercourse after the age of 18 years; 38.6% (n=145) started at 15-18 years old; 8.8% (n=33) started before the age of 15, and 5.1% (n=12) did not answer the question

- **Type of contraceptives used**

Regarding type of contraceptives, of the screened respondents, 72% (n=152) used hormonal contraceptives; 21.8% (n=46) used barrier methods, and 4.3% (n=9) used mixed methods. Of the not screened respondents, 79.7% (n=229) used hormonal contraceptives; 10.5% (n=30) used barrier methods, and 4.9% (n=14) used mixed methods (Table 4.4).

- **Number of children**

Of the screened respondents, 58.3% (n=136) had two to four children; 17.2% (n=40) had one child; 14.1% (n=33) had more than four children, and 9.1% (n=21) had no children. Of the not screened respondents, 33.2% (n=125) had two to four children; 32.4% (n=122) had no children; 26.1% (n=98) had one child, and 7.5% (n=28) had more than four children (Table 4.4).

- **Having more than one sexual partner**

Regarding their number of sexual partners, of the screened respondents, 40.3% (n=94) said they had more than one sexual partner; 56.7 (n=132) said they had no more than one sexual partner and 3% (n=7) did not answer the question. Of the not screened respondents, 66.7% (n=251) said they had more than one sexual partner; 28.5% (n=107) said they had no more than one sexual partner and 4.8% (n=18) didn’t respond.

- **Having any miscarriages**

The respondents were asked if they had had any miscarriages. Of the screened respondents, 27.5% (n=64) reported that they had miscarriage; 64.4% (n=150) reported that they had no miscarriage and 8.1% (n=19) did not answer the question. Of the not screened respondents, 20.2% (n=76) reported that they had miscarriage; 69.7% (n=262) reported that they had no miscarriage and 10.1% (n=38) did not answer the question.

### 4.2.4 Respondents' awareness of cervical cancer

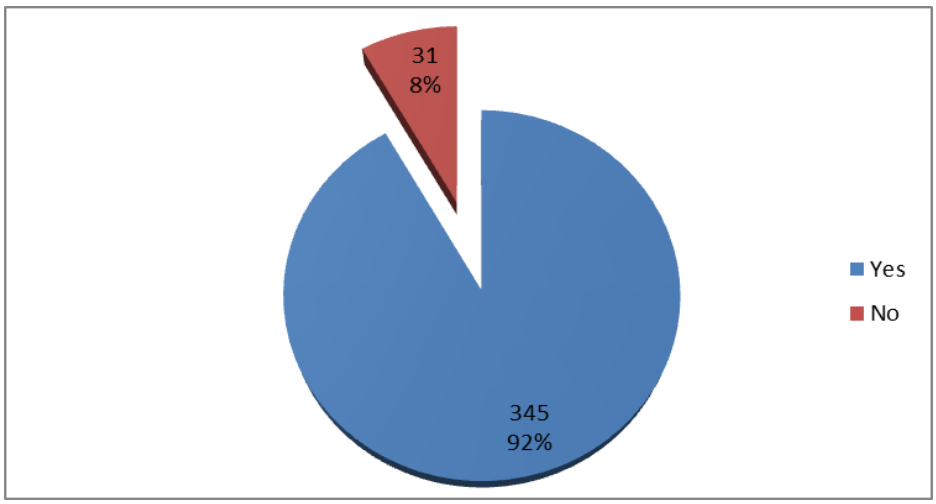


**Figure 4.2 Distribution of not screened respondents who had heard about cervical cancer**

Concerning awareness about cervical cancer respondents were asked if they heard of about cervical cancer, causes, prevention, risk factors, screening and treatment. The response to each question was 'yes' or 'no'.

Figure 4.2 presents the distribution of not screened respondents who had heard about cervical cancer. Of those not screened respondents 92% (n=345) reported that they heard about cervical cancer and 8 % (31) reported that they had not heard.

Of screened respondents, 53.7% (n=173) were aware of causes of cervical cancer and 20.9% (n=60) were not aware of causes of cervical cancer; 75.1% (n=175) were aware of the risk factors for cervical cancer and 24.9% (n=58 ) were not aware the risk factors

for cervical cancer; 179 (76.8%) were aware of methods of cervical cancer preventions and 54 (23.2%) were not aware of methods of cervical cancer preventions; all of them were aware of where to get test for cervical cancer; 73.8% (n=172) were aware of whether cervical cancer treatable or not and 26.2% (n=61 ) were not aware of whether cervical cancer treatable or not; 35.2% (n=82) were knew person with cervical cancer and 151 (64.8%)were not knew any person with cervical cancer.

**Table 4.5 Respondents' awareness of cervical cancer and screening status**

| Factor | Classification | Screening status | |
|---|---|---|---|
| | | Screened N (%) | Not screened N (%) |
| Do you know the causes of cervical cancer? | Yes | 173 (53.7%) | 149 (39.7%) |
| | No | 60 (20.9%) | 226 (60.3%) |
| | **Total** | **233 (38.3%)** | **375 (61.7%)** |
| Do you know the risk factors for cervical cancer? | Yes | 175 (75.1%) | 132 (35.1%) |
| | No | 58 (24.9%) | 244 (64.9%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Do you know any methods of cervical cancer prevention? | Yes | 179 (76.8%) | 125 (33.3%) |
| | No | 54 (23.2%) | 250 (66.7%) |
| | **Total** | **233 (100%)** | **375 (100%)** |
| Have you ever heard of cervical cancer screening? | Yes | 233 (100%) | 200 (72.5%) |
| | No | (0%) | 175 (27.5%) |
| | **Total** | **233 (100%)** | **375 (100%)** |
| Do you know where to get test for cervical cancer? | Yes | 233 (100%) | 133 (35.5%) |
| | No | (0%) | 242 (64.5%) |
| | **Total** | **233 (100%)** | **375 (100%)** |
| Is cervical cancer treatable? | Yes | 172 (73.8%) | 158 (42%) |
| | No | 61 (26.2%) | 218 (58%) |
| | **Total** | **233 (100%)** | **376 (100%)** |
| Do you know any person with cervical cancer? | Yes | 82 (35.2%) | 75 (27.2%) |
| | No | 151 (64.8%) | 301 (72.8%) |
| | **Total** | **233 (100%)** | **376 (100%)** |

Table 4.5 shows respondents' awareness of cervical cancer and screening status. The causes, risks factors, method of prevention, ever heard of cervical cancer creening, whether cervical cancer is treatable and know any person with cervical cancer presented. Of not screened respondents 39.7% (n=149) were aware of the causes of cervical cancer and 60.3% (n=226) were not aware of the causes of cancer cervical cancer; 35.1% (n=132) were aware of risk factors for cervical cancer and 64.9% (n=244) were not aware of risk of cervical cancer; 33.3% (n=125) were aware of methods of cervical cancer prevention and 66.7% (n=250 ) were not aware of any

methods of cervical cancer prevention; 72.5% (n=200) were aware of cervical cancer screening 27.5% (n=175) were not aware of cervical cancer screening; 42% (n=158) aware of whether cervical cancer treatable or not and 58% (218) were not whether cervical cancer treatable or not; 27.2% (n=75) knew person with cervical cancer and 72.8% (n=301) didn't know any person with cervical cancer.

### 4.2.5 Respondents' knowledge of cervical cancer

The respondents' knowledge of cervical cancer covered the part of the body affected; signs and symptoms of cervical cancer; transmission, prevention, stages and treatment options; screening frequency and results, and risk factors for cervical cancer.

#### *4.2.5.1 Respondents' knowledge of part of the body affected, and screening status*

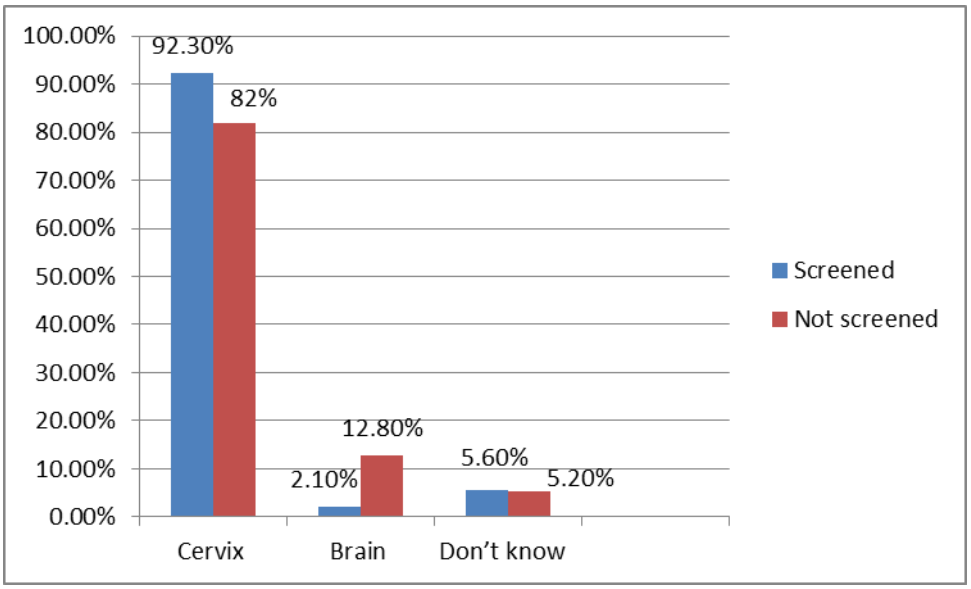


**Figure 4.3 Respondents' knowledge on part of the body affected by cervical cancer, and screening status**

Figure 4.3 presents respondents' knowledge on part of the body affected by cervical cancer, and screening status. Of the screened respondents, 92.3% (n=215) answered that the main part of body affected by cervical cancer is the cervix; 2.1% (n=5) answered the brain, and 5.6% (n=13) didn't know which parts of the body is affected by cervical cancer. Of the not screened respondents, 82% (n=283) answered that the main

part of body affected by cervical cancer is the cervix, and 12.8% (n=44) answered the brain and18 (5.2%) did not know which part of the body was affected by the disease.

#### *4.2.5.2 Respondents' knowledge of cervical cancer signs and symptoms, and screening status*

**Table 4.6 Respondents' knowledge of cervical cancer signs and symptoms, and screening status**

| Factor | Classification | Screening status | |
|---|---|---|---|
| | | Screened (N=225) (%) | Not screened (N=345) (%) |
| Signs and symptoms of cervical cancer | Pain during intercourse | 32 (14.2%) | 35 (10.1%) |
| | Post coital bleeding | 28 (12.4%) | 41 (11.9%) |
| | Irregular vaginal bleeding | 21 (9.3%) | 18 (5.2%) |
| | Weight loss | 15 (6.7%) | 56 (16.2%) |
| | Foul smell vaginal discharge | 20 (8.9%) | 104 (30.1%) |
| | Two of the above | 67 (29.9%) | 42 (12.2%) |
| | Three of the above | 28 (12.4%) | 28 (8.1%) |
| | All of the above | 11 (4.9%) | 18 (5.2%) |
| | I don't know | 3 (1.3%) | 3 (1%) |

Table 4.6 indicates the respondents' knowledge of signs and symptoms of cervical cancer and screening status. Of the screened respondents, 14.2% (n=32) answered pain during intercourse was a sign and symptom of cervical cancer; 12.4% (n=28) answered post-coital bleeding; 9.3% (n=21) answered irregular vaginal bleeding; 6.7% (n=15) answered weight loss, and 8.9% (n=20) answered foul smell of vaginal discharge was a sign and symptom of cervical cancer; while 29.9% (n=67) said two of the above; 12.4% (n=28) said three of the above, and 11 (4.9%) said all of the above were signs and symptoms of cervical cancer. Of the not screened respondents, 10.1% (n=35) answered pain during intercourse; 11.9% (n=41) answered post coital bleeding; 16.2% (n=56) answered weight loss, and 30.1% (n=104) answered foul smell of vaginal discharge was a sign and symptom of cervical cancer; while 12.2% (n=42) said two of the above; 8.1% (n=28) said three of the above, and 5.2% (n=18) said all of the above were signs and symptoms of cervical cancer.

#### *4.2.5.3 Respondents' knowledge of cervical cancer transmission, prevention, treatment options and regarding the stage at which cervical cancer can be cured*

**Table 4.7 Respondents' knowledge of cervical cancer transmission, prevention and treatment options, stages and screening status**

| Factor | Classification | Screening status | | $X^2$ | P-value |
|---|---|---|---|---|---|
| | | Screened N (%) | Not screened N (%) | | |
| The virus is transmitted through | Sexual intercourse | 161 (69.4%) | 160 (46.4%) | 48.7 | 0.000** |
| | Maternal-foetal transmission | 17 (7.3%) | 19 (5.5%) | | |
| | Blood transfusion | 15 (6.5%) | 12 (3.5%) | | |
| | I don't know | 39 (16.8%) | 154 (44.6%) | | |
| | **Total** | **232 (100%)** | **345 (100%)** | | |
| How can a person prevent getting cancer of the cervix? | Avoid multiple sexual partners | 32 (13.7%) | 35 (10.1%) | 101.3 | 0.000** |
| | Avoid early sexual intercourse | 34 (14.6%) | 10 (3%) | | |
| | Quit smoking | 5 (2.2%) | 28 (8.1%) | | |
| | Vaccination of HPV | 10 (4.3%) | 27 (7.8%) | | |
| | Regular medical check-up for screening | 25 (10.7%) | 62 (18%) | | |
| | Two or more of the above | 126 (53.2%) | 112 (32.4%) | | |
| | I don't know | 3 (1.3%) | 71 (20.6%) | | |
| | **Total** | **232 (100%)** | **345 (100%)** | | |
| What is the treatment for cervical cancer? | Radiation | 46 (20.1%) | 54 (15.7%) | 17,1 | 0.004** |
| | Surgery | 36 (15.7%) | 53 (15.4%) | | |
| | Chemotherapy | 41 (17.9%) | 35 (10.1%) | | |
| | Two or more of the above | 39 (17%) | 72 (20.9%) | | |
| | Other | 4 (1.7%) | 24 (7%) | | |
| | I don' know | 63 (27.5%) | 107 (31%) | | |
| | **Total** | **229 (100%)** | **345 (100%)** | | |
| Stage when cervical cancer can be cured | Early | 165 (70.8%) | 192 (55.6%) | 53.07 | 0.000** |
| | Cannot be cured | 28 (12.1%) | 15 (4.3%) | | |
| | Any time | 15 (6.4%) | 13 (3.7%) | | |
| | I don't know | 25 (10.7%) | 125 (36.2%) | | |
| | **Total** | **233 (100%)** | **345 (100%)** | | |

** Highly significant p<0.001, p<.001

Table 4.7 presentes the respondents' knowledge of cervical cancer transmission, prevention and treatment options, stages and screening status. Regarding knowledge of cervical cancer transmission, of the screened respondents, 69.4% (n=161) said by sexual intercourse; 7.3% (n=17) said by maternal-foetal transmission; 6.5% (n=15) said by blood transfusion, and 16.8% (n=39) did not know. Of the not screened respondents,

46.4% (n=160) sexual intercourse, 5.5% (n=19) maternal-foetal transmission, 3.5% (n=12) blood transfusion, and 44.6% (n=154) did not know.

Regarding how to prevent getting cervical cancer, of the screened respondents, 13.7% (n=32) said avoid multiple sexual partners; 14.6% (n=34) said avoid early sexual intercourse; 2.2% (n=5) said quit smoking; 4.3% (n=10) said by HPV vaccination; 10.7% (n=25) said by regular medical check-up for screening, and 53.2% (n=126) said two or more of the above. Of the not screened respondents, 10.1% (n=35) said avoid multiple sexual partners; 3% (n=10) said avoid early sexual intercourse; 8.1% (n=28) said quit smoking; 27 (7.8%) said by HPV vaccination, 18% (n=62) said by regular medical check-up, and 32.4% (n=112) said by two or more of the above.

Regarding treatment modality of cervical cancer, of the screened respondents, 20.1% (n=46) said radiation; 15.7% (n=36) said surgery; 17.9% (n=41) said chemotherapy; 17% (n=39) said two or more of the above; 1.7% (n=4) said other but did not specify, and 27.5% (n=63) did not know. Of the not screened respondents, 15.7% (n=54) said radiation; 15.4% (n=53) said surgery; 10.1% (n=35) said chemotherapy; 20.9% (n=72) said two or more of the above; 7% (n=24) said other but did not specify, and 31% (n=107) did not know.

Regarding the stage at which cervical cancer can be cured, of the screened respondents, 70.8% (n=165) said early; 12.1% (n=28) said it cannot be cured; 6.4% (n=15) said at any time, and 10.7% (n=25) did not know. Of the not screened respondents, 55.6% (n=192) said early; 4.3% (n=15) said it cannot be cured; 3.7% (n=13) said at any time, and 36.2% (n=125) did not know.

#### *4.2.5.4 Respondents' knowledge about cervical cancer screening period and result interpretation and screening status*

**Table 4.8 Respondents' knowledge of cervical cancer screening period and result interpretation and screening status**

| Factor | Classification | Screening status | | $X^2$ | P value |
|---|---|---|---|---|---|
| | | Screened N (%) | Not screened N (%) | | |
| How often should cervical cancer screening be done? | Annually | 51 (22%) | 109 (31.6%) | 107.1 | 0.000 |
| | Every 2-3 years | 65 (28%) | 54 (15.7%) | | |
| | Every 5 years | 97 (41.8%) | 38 (11%) | | |
| | I don't know | 20 (8.6%) | 143 (41.4%) | | |
| | **Total** | **232 (100%)** | **345 (100%)** | | |
| What does an abnormal cervical cancer screening result mean? | Precancerous cells | 121 (51.9%) | 96 (27.8%) | 122.4 | 0.000 |
| | Cervical cancer | 70 (30.1%) | 67 (23.1%) | | |
| | Sexually transmitted infection | 27 (11.6%) | 21 (6.0%) | | |
| | I do not know | 15 (6.4%) | 161 (46.7%) | | |
| | **Total** | **233 (100%)** | **345 (100%)** | | |

Figure 4.8 indicates the respondents' knowledge of cervical cancer screening period and result interpretation and screening status, 41.8% (n=97) of the screened respondents said screening should be done every 5 years; 28% (n=65) said every 2-3 years; 22% (n=51) said annually, and 8.6% (n=20) they did not know. Of the not screened respondents, 41.1% (n=143) said they did not know; 31.6% (n=109) said annually; 15.7% (n=54) said every 2-3 years, and 11% (n=38) said every 5 years.

Regarding the meaning of an abnormal screening test result, of the screened respondents, 51% (n=121) said it indicated precancerous cells; 30.1% (n=70) said cervical cancer; 11.6% (n=27) said sexually transmitted infection, and 6.4% (n=15) said they did not know. Of the not screened respondents, 46.7% (n=161) did not know; 27.8% (n=96) said precancerous cells; 23.1% (n=67) said cervical cancer, and 6% (n=21) said sexually transmitted infection.

### *4.2.5.5 Respondents' knowledge of cervical cancer risk factors*

**Table 4.9 Respondents' knowledge of risk factors for cervical cancer and screening status**

| Factor | Classification | Screening status | | $X^2$ | P-value |
|---|---|---|---|---|---|
| | | Screened N (%) N=233 | Not screened N (%) N=345 | | |
| Having multiple sexual partners | Yes | 205 (88%) | 249 (72.2%) | 45.1 | <0.001 |
| | No | 24 (10.3%) | 24 (7%) | | |
| | I don't know | 4 (1.7%) | 72 (20.8%) | | |
| Having sex at an early age | Yes | 184 (79%) | 197 (84.5%) | 40.38 | <0.001 |
| | No | 31 (13.3%) | 49 (14.2%) | | |
| | I don't know | 18 (7.7%) | 99 (28.7%) | | |
| Smoking cigarettes | Yes | 146 (62.7%) | 169 (49%) | 20.1 | <0.001 |
| | No | 54 (23.2%) | 72 (20.9%) | | |
| | I don't know | 33 (14.1%) | 104 (30.1%) | | |
| Use of contraceptives | Yes | 102 (43.8%) | 64 (27.5%) | 44.1 | <0.001 |
| | No | 83 (35.6%) | 164 (79.4%) | | |
| | I don't know | 48 (20.6%) | 117 (50.2%) | | |
| Having sexually transmitted infection | Yes | 154 (66.1%) | 184 (53.3%) | 40.49 | <0.001 |
| | No | 57 (24.5%) | 52 (15.1%) | | |
| | I don't know | 22 (9.4%) | 109 (31.6%) | | |
| Acquiring human papillomavirus infection | Yes | 140 (60.1%) | 128 (37.1%) | 40.23 | <0.001 |
| | No | 36 (15.4%) | 43 (12.5%) | | |
| | I don't know | 57 (24.5%) | 174 (50.4%) | | |
| Family history of cervical cancer | Yes | 134 (57.5%) | 133(38.55%) | 20.56 | <0.001 |
| | No | 35 (15%) | 67 (19.4%) | | |
| | I don't know | 64 (27.5%) | 145 (42%) | | |
| Having a weakened immune system | Yes | 145 (62.2%) | 146 (42.3%) | 27.6 | <0.001 |
| | No | 39 (16.7%) | 58 (16.8%) | | |
| | I don't know | 49 (21%) | 141 (40.9%) | | |

***** Highly significant P-value <0.001

Table 4.9 indicates the respondents' knowledge of risk factors, and screening status.Of the screened respondents, 88% (n=205) said having multiple sexual partners was a risk factor for cervical cancer; 10.3% (n=24) said having multiple sexual partners was not a risk factor, and 1.7% (n=4) did not know. Of the not screened respondents, 72.2% (n=249) said having multiple sexual partners was a risk factor; 7% (n=24) said it was not, and 20.8% (n=72) did not know. Of the screened respondents, 79% (n=184) said having sexual intercourse at an early age was a risk factor; 13.3% (n=31) said it was not, and 7.7% (n=18) did not know. Of the not screened respondents, 84.5% (n=197) said it was a risk factor; 14.2% (n=49) said it was not, and 28.7% (n=99) did not know.

Of the screened respondents, 62.7% (n=146) said smoking cigarettes was a risk factor; 23.2% (n=54) said it was not, and 14.1% (n=33) did not know. Of the not screened respondents, 49% (n=169) said it was a risk factor; 20.9% (n=72) said it was not, and 30.1% (n=104) did not know. Of the screened respondents, 43.8% (n=102) said use of contraceptives was a risk factor; 35.6% (n=83) said it was not, and 20.6% (n=48) did not know. Of the not screened respondents, 27.5% (n=64) said use of contraceptives was a risk factor; 79.4% (n=164) said it was not, and 50.2% (n=117) did not know.

### 4.2.6 Respondents' practice of cervical cancer screening

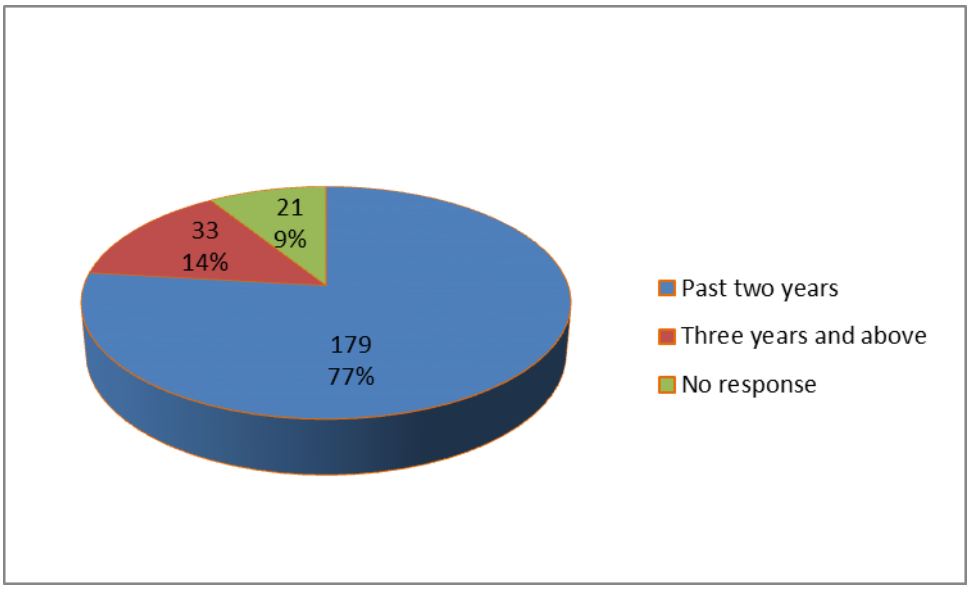


**Figure 4.4 Respondents' practice of cervical cancer screening**

Figure 4.4 indicates that of the screened respondents, 77% (n=179) had been screened in the past two years; 14% (n=33) had been screened three and above years before, and 9% (n=21) no respond.

### 4.2.7 Respondents' perceptions of susceptibility to cervical cancer

**Table 4.10 Screened respondents' perceived susceptibility to cervical cancer**

| Description | Strongly disagree 1 | Disagree 2 | Neutral 3 | Agree 4 | Strongly agree 5 | Total |
|---|---|---|---|---|---|---|
| I worry about getting cervical cancer | 27 (12%) | 67 (29.5%) | 22 (9.7%) | 54 (23.7%) | 57 (25.1%) | 227 (100%) |
| I worry about getting human papilloma virus, the virus which cause**s** cervical cancer | 23 (9.9%) | 73 (31.4%) | 31 (13.4%) | 63 (27.2%) | 42 (18.1%) | 232 (100%) |
| It is beyond my personal control, because all women have an equal chance of developing cervical cancer | 41 (17.6%) | 54 (23.3%) | 47 (20.3%) | 51 (22%) | 39 (16.8%) | 232 (100%) |
| My chances of getting cervical cancer are high | 36 (15.5%) | 76 (32.7%) | 50 (21.6%) | 42 (18.1%) | 28 (12.1%) | 232 (100%) |
| My chances of contracting human papilloma virus are low | 5 (2.1%) | 75 (32.2%) | 39 (16.7%) | 58 (25%) | 56 (24%) | 233 (100%) |
| I have the ability to avoid cervical cancer | 11 (4.7%) | 44 (18.9%) | 27 (11.6%) | 88 (37.8%) | 63 (27%) | 233 (100%) |
| I have the ability to avoid HPV infection | 3 (1.4%) | 49 (21%) | 17 (7.3%) | 98 (42%) | 66 (28.3%) | 233 (100%) |

The participants were asked about their perceptions to cervical cancer susceptibility. Table 4.10 indicates the screened respondents' percieved susceptibility to cervical cancer.

Of the screened respondents,

25.1% (n=57) strongly agreed; 23.7% (n=54) agreed; 9.7% (n=22) were neutral; 29.5% (n=67) disagreed, and 12% (n=27) strongly disagreed that they worried about getting cervical cancer.

18.1% (n=42) strongly agreed; 27.2% (n=63) agreed; 13.4% (n=31) were neutral; 31.4% (n=73) strongly disagreed, and 9.9% (n=23) disagreed that they worried about getting HPV.

16.8% (n=39) strongly agreed; 22% (n=51) agreed; 20.3% (n=47) were neutral; 23.3% (n=54) strongly disagreed, and 17.6% (n=41) disagreed that it was beyond their control to prevent developing of cervical cancer.

28.3% (n=66) strongly agreed; 42% (n=98) agreed; 7.3% (n=17) were neutral; 21% (n=49) strongly disagreed, and 1.4% (n=3) disagreed that their chances of getting cervical cancer were high.

24% (n=56) strongly agreed; 25% (n=58) agreed; 16.7% (n=39) were neutral; 32.2% (n=75) strongly disagreed, and 2.1% (n=5) disagreed that their chances of contracting HPV were low.

27% (n=63) strongly agreed; 37.8% (n=88) agreed; 11.6% (n=27) were neutral; 18.9% (n=44) strongly disagreed, and 4.7% (n=11) disagreed that they had the ability to avoid cervical cancer.

28.3% (n=66) strongly agreed; 42% (n=98) agreed; 7.3% (n=17) were neutral; 21% (n=49) strongly disagreed, and 1.4% (n=3) disagreed that they had the ability to avoid HPV infection.

**Table 4.11 Not screened respondents' perceived susceptibility to cervical cancer**

| Description | Strongly disagree 1 | Disagree 2 | Neutral 3 | Agree 4 | Strongly agree 5 | Total |
|---|---|---|---|---|---|---|
| I worry about getting cervical cancer 1 | 56 (16.5%) | 133 (39.1%) | 35 (10.3%) | 55 (16.2%) | 61 (17.9%) | 340 (100%) |
| I worry about getting human papilloma virus, the virus which causes cervical cancer | 57 (16.6%) | 135 (39.2%) | 41 (11.9%) | 63 (18.3%) | 48 (14%) | 344 (100%) |
| It is beyond my personal control, because all women | 45 (13.2%) | 122 (35.7%) | 43 (12.6%) | 70 (20.4%) | 62 (18.1%) | 342 (100%) |

| Description | Strongly disagree 1 | Disagree 2 | Neutral 3 | Agree 4 | Strongly agree 5 | Total |
|---|---|---|---|---|---|---|
| have an equal chance of developing cervical cancer | | | | | | |
| My chances of getting cervical cancer are high | 60 (17.5%) | 138 (40.4%) | 50 (14.6%) | 53 (15.5%) | 41 (12%) | 342 (100%) |
| My chances of contracting human papilloma virus are low | 31 (9%) | 105 (30.5%) | 73 (21.2%) | 83 (24.2%) | 52 (15.1%) | 344 (100%) |
| I have the ability to avoid cervical cancer | 20 (5.8%) | 87 (25.3%) | 43 (12.5%) | 119 (34.6%) | 75 (21.8%) | 344 (100%) |
| I have the ability to avoid HPV infection | 19 (5.5%) | 83 (24.3%) | 45 (13.2%) | 123 (36%) | 72 21%) | 342(100%) |

Table 4.11 presents the not screened respondents' perceptions about their susceptibility to cervical cancer. Of the not screened respondents, 17.9% (n=61) strongly agreed; 16.2% (n=55) agreed; 10.3% (n=35) were neutral; 39.1% (n=133) disagreed, and 16.5% (n=56) strongly disagreed that they worried about getting cervical cancer.

Of not not screened respondents,

14% (n=48) strongly agreed; 18.3% (n=63) agreed; 11.9% (n=41) were neutral; 39.2% (n=135) strongly disagreed, and 16.6% (n=57) disagreed that they worried about getting HPV.

18.1% (n=62) strongly agreed; 20.4% (n=70) agreed; 12.6% (n=43) were neutral; 35.7% (n=122) strongly disagreed, and 13.2% (n=45) disagreed that it was beyond their control to prevent developing cervical cancer.

12% (n=41) strongly agreed; 15.5% (n=53) agreed; 14.6% (n=50) were neutral; 40.4% (n=138) strongly disagreed, and 17.5% (n=60) disagreed that disagreed that their chances of getting cervical cancer were high.

15.1% (n=52) strongly agreed; 24.2% (n=83) agreed; 21.2% (n=73) were neutral; 30.5% (n=105) strongly disagreed, and 9% (n=31) disagreed that their chances of contracting HPV were low.

21.8% (n=75) strongly agreed; 34.6% (n=119) agreed; 12.5% (n=43) were neutral; 25.3% (n=87) strongly disagreed, and 5.8% (n=20) disagreed that they had the ability to avoid cervical cancer.

72.2% (n=66) strongly agreed; 36% (n=123) agreed; 13.2% (n=45) were neutral; 24.3% (n=83) strongly disagreed, and 5.5% (n=19) disagreed that they had the ability to avoid HPV infection.

#### *4.2.7.1 Respondents' perceived severity seriousness of cervical cancer*

**Table 4.12 Respondents' perceptions of seriousness/severity of cervical cancer, and screening status**

| Question | Screening status | |
|---|---|---|
| | Screened | Not screened |
| **I will not screen for cervical cancer because of fear of the result** | **No (%)** | **No (%)** |
| True | 48 (20.8%) | 89 (25.9%) |
| False | 171 (74%) | 192 (56.0%) |
| I don't know | 12 (5.2%) | 62 (18.1%) |
| **Total** | **231 (100%)** | **343 (100%)** |
| **There is very little that one can do about cervical cancer** | | |
| True | 112 (48.3) | 108 (28.9%) |
| False | 99 (42.7%) | 155 (41.4%) |
| I don't know | 21 (9.0%) | 111 (29.7%) |
| **Total** | **232 (100%)** | **374 (100%)** |
| **I would rather screen for cervical cancer** | | |
| True | 169 (72.8%) | 221 (59.2%) |
| False | 49 (21.1%) | 88 (23.6%) |
| I don't know | 14 (6.0%) | 64 (17.2%) |
| **Total** | **232 (100%)** | **373 (100%)** |
| All women who develop cervical cancer must have their uteruses removed | | |
| True | 44 (19.0%) | 79 (23.0%) |
| False | 140 (60.6%) | 138 (40.1%) |
| I don't know | 47 (20.4%) | 127 (36.9%) |
| **Total** | **231 (100%)** | **344 (100%)** |
| **Early detection can increase survival chances** | | |
| True | 163 (70.3%) | 198 (57.6%) |
| False | 44 (18.9%) | 63 (18.3%) |
| I don't know | 25 (10.8%) | 83 (24.1%) |
| **Total** | **232 (100%)** | **344 (100%)** |
| **Loss of cervix or uterus through surgery would affect my sexuality** | | |
| True | 99 (42.3%) | 153 (44.5%) |
| False | 77 (33%) | 100 (29.1%) |
| I don't know | 57 (24.7%) | 91 (26.4%) |
| **Total** | **233 (100%)** | **344 (100%)** |
| **Among the diseases I can imagine getting cervical cancer is among the most serious** | | |

| Question | Screening status | |
|---|---|---|
| | **Screened** | **Not screened** |
| True | 162 (69.5%) | 203 (59.3%) |
| False | 61 (26.2%) | 72 (21.1%) |
| I don't know | 10 (4.3%) | 67 (19.6%) |
| **Total** | **233 (100%)** | **342 (100%)** |
| **Cervical cancer is a life-threatening disease** | | |
| True | 150 (65.5%) | 213 (62.4%) |
| False | 62 (27.1%) | 66 (19.4%) |
| I don't know | 17 (7.4%) | 62 (18%) |
| **Total** | **229 (100%)** | **341 (100%)** |
| **Cervical cancer would threaten my relationship with my husband/partner** | | |
| True | 148 (63.5%) | 215 (62.5%) |
| False | 60 (25.8%) | 53 (15.4%) |
| I don't know | 25 (10.7%) | 76 (22.1%) |
| **Total** | **233 (100%)** | **344 (100%)** |
| **Most women who develop cervical cancer will die from it.** | | |
| True | 87 (37.3%) | 126 (36.6%) |
| False | 83 (35.6%) | 89 (25.9%) |
| I don't know | 63 (27.0%) | 129 (37.5%) |
| **Total** | **233 (100%)** | **344 (100%)** |
| **My whole life would change if I had cervical cancer** | | |
| True | 105 (45.1%) | 146 (42.6%) |
| False | 99 (42.5%) | 112 (32.6%) |
| I don't know | 29 (12.4%) | 85 (24.8%) |
| **Total** | **233 (100%)** | **343 (100%)** |

Regarding their perceived seriousness of cervical cancer, the respondents were required to answer True or False to statements. Table 4.12 shows respondents' perceptions about seriousness/severity of cervical cancer, and screening status

Of the screened respondents,

20.8% (n=48) said 'true' and 74% (n=171) said 'false' for 'I will not screen for cervical cancer because of fear of the result'; 48.3% (n=112) said 'true' and 42.7% (n=99) said 'false' for 'There is very little that one can do about cervical cancer'; 72.8% (n=169) said 'true' and 21.1% (=49) said false for 'I would rather screen for cervical cancer'; 19% (n=44) said 'true' and 60.6% (n=140) said 'false' for 'All women who develop cervical cancer must have their uteruses removed'.

70.3% (n=163) said 'true' and 18.9% (n=44) said 'false' for 'Early detection can increase survival chances'; 42.3% (n=99) said 'true' and 33% (n=77) said 'false' for 'Loss of cervix or uterus through surgery would affect my sexuality'; 69% (n=162) said 'true' and 26.2% (n=61) said 'false' for 'Among the diseases I can imagine getting cervical cancer is among the most serious'; 65.5% (n=150) said 'true' and 27.1% (n=62) said 'false' for

‘Cervical cancer is a life threatening disease’; 63.5% (n=148) said ‘true’ and 25.8% (n=60) said ‘false’ for ‘Cervical cancer would threaten my relationship with my husband/partner’; 37.3% (n=87) said ‘true’ and 35.6% (n=83) said ‘false’ for ‘Most women who develop cervical cancer will die from it’; 45.1% (n=105) said ‘true’ and 42.5% (n=99%) said ‘false’ for ‘My whole life would change if I had cervical cancer’.

Of the not screened respondents, 25.9% (n=89) said ‘true’ and 56% (n=192) said ‘false’ to ‘I will not screen for cervical cancer because of fear of the result’. 28.9% (n=108) said ‘true’ and 41.4% (n=155) said ‘false’ for ‘There is very little that one can do about cervical cancer.’ 59.2% (n=221) said ‘true’ and 23.6% (n=88) said ‘false’ for ‘I would rather screen for cervical cancer’. 23% (n=79) said ‘true’ and 40.1% (n=138) said ‘false’ for ‘All women who develop cervical cancer must have their uteruses removed’. 57.6% (n=198) said ‘true’ and 18.3% (n=63) said ‘false’ for ‘Early detection can increase survival chances’. 44.5% (n=153) said ‘true’ and 29.1% (n=100) said ‘false’ for ‘Loss of cervix or uterus through surgery would affect my sexuality’. 59.3% (n=203) said ‘true’ and 21.1% (n=72) said false for ‘Among the diseases I can imagine getting cervical cancer is among the most serious’. 62.4% (n=213) said ‘true’ and 19.4% (n=66) said ‘false’ for ‘Cervical cancer is a life-threatening disease’. 62.5% (n=215) said ‘true’ and 15.4% (n=53) said ‘false’ for ‘Cervical cancer would threaten my relationship with my husband/partner’. 36.6% (n=126) said ‘true’ and 25.9% (n=89) said ‘false’ for ‘Most women who develop cervical cancer will die from it’. 42.6% (n=146) said ‘true’ and 32.6% (n=112) said ‘false’ for ‘My whole life would change if I had cervical cancer’.

#### *4.2.7.2 Respondents’ perceived benefits of cervical cancer screening*

**Table 4.13 Respondents’ perceived benefits of cervical cancer screening**

| Question | Respondents’ screening status | | | |
|---|---|---|---|---|
| | Screened N (%) | | Not screened N (%) | |
| **Cervical cancer can be diagnosed at an early stage** | | | | |
| Yes | 212 | 91.0 | 251 | 73.0 |
| No | 8 | 3.4 | 30 | 8.7 |
| I don’t know | 13 | 5.6 | 63 | 18.3 |
| **Total** | **233** | **100.0** | **344** | **100.0** |
| **Cervical cancer screening would save lives if detected at an early stage** | | | | |
| Yes | 193 | 83.2 | 221 | 64.2 |
| No | 29 | 12.5 | 54 | 15.7 |
| I don’t know | 10 | 4.3 | 69 | 20.1 |
| **Total** | **232** | **100.0** | **344** | **100.0** |

| Question | Respondents' screening status | | | |
|---|---|---|---|---|
| | Screened N (%) | | Not screened N (%) | |
| **Cervical cancer is often curable with early detection and proper medical treatment** | | | | |
| Yes | 201 | 86.6 | 230 | 66.9 |
| No | 16 | 6.9 | 31 | 9.0 |
| I don't know | 15 | 6.5 | 83 | 24.1 |
| **Total** | **232** | **100.0** | **344** | **100.0** |
| **Regular cervical cancer screening decreases the risk of cancer** | | | | |
| Yes | 199 | 85.8 | 221 | 64.4 |
| No | 24 | 10.3 | 37 | 10.8 |
| I don't know | 9 | 3.9 | 85 | 24.8 |
| **Total** | **232** | **100.0** | **343** | **100.0** |

The respondents were required to answer 'yes' or 'no' to statements on the perceived benefits of cervical cancer screening. Table 4.13 depicts respondents' perceived benefits of cervical cancer screening. Of the screened respondents, 91% (n=212) said 'yes' and 3.4% (n=8) said 'no' to 'Cervical cancer can be diagnosed at an early stage', and 5.6% (n=13) did not know; 83.2% (n=193) said 'yes' and 12.5% (n=29) said 'no' to 'cervical cancer screening would save lives if detected at an early stage', and 4.3% (n=10) did not know; 86.6% (n=201) said 'yes' and6.9% (n=16) said 'no' to 'cervical cancer is often curable with early detection and proper medical treatment', and 6.5% (n=15) did not know.; 85.8% (n=199) said 'yes' and 10.3% (n=24) said 'no' to 'regular cervical cancer screening decreases the risk of cervical cancer', and 3.9% (n=9) did not know.

Of the not screened respondents, 73% (n=251) said 'yes' and 8.7% (n=30) said 'no' to 'cervical cancer can be diagnosed at an early stage', and 18.3% (n=63) did not know; 64.2% (n=221) said 'yes' and 15.7% (n=54) said 'no' to 'cervical cancer screening would save life if detected at an early stage', and 20.1% (n=69) did not know; 66.9% (n=230) said 'yes' and 9% (n=31) said 'no' to 'cervical cancer is often curable with early detection and proper medical treatment', and 24.1% (n=83) did not know; 64.4% (n=221) said 'yes' and 10.8% (n=37) said 'no' to 'regular cervical cancer screening decreases the risk of cancer', and 24.8% (n=85) did not know.

### *4.2.7.3 Respondents' perceived barriers to cervical cancer screening*

## Table 4.14 Respondents' perceived barriers to cervical cancer screening

| Question | Screening status | |
|---|---|---|
| **I don't want to be seen in a cervical cancer screening clinic by my friends.** | **Screened** | **Not screened** |
| True | 120 (51.9%) | 167 (48.6%) |
| False | 105 (45.5%) | 127 (36.9%) |
| I don't know | 6 (2.6%) | 50 (14.5%) |
| **Total** | **231 (100%)** | **344 (100%)** |
| **Cervical cancer screening test is humiliating.** | | |
| True | 56 (33.1%) | 69 (28.8%) |
| False | 88 (52.1%) | 104 (43.3%) |
| I don't know | 25 (14.8%) | 67 (27.9%) |
| **Total** | **169 (100%)** | **240 (100%)** |
| **I have no time for doing a test.** | | |
| True | 46 (19.7%) | 56 (16.49%) |
| False | 175 (75.1%) | 225 (66%) |
| I don't know | 12 (5.2%) | 60 (17.6%) |
| **Total** | **233 (100%)** | **341 (100%)** |
| **I am not aware of any test.** | | |
| True | 46 (19.9%) | 113 (33.1%) |
| False | 171 (74%) | 162 (47.5%) |
| I don't know | 14 (6.1%) | 66 (19.4%) |
| **Total** | **231 (100%)** | **341 (100%)** |
| **I do not know where the test is done.** | | |
| True | 53 (22.8%) | 117 (34.4%) |
| False | 170 (73.3%) | 164 (48.2%) |
| I don't know | 9 (3.9%) | 59 (17.4%) |
| **Total** | **232 (100%)** | **340 (100%)** |
| **I don't know how much it costs.** | | |
| True | 85 (36.8%) | 172 (50.4%) |
| False | 131 (56.7%) | 93 (27.3%) |
| I don't know | 15 (6.5%) | 76 (22.3%) |
| **Total** | **231 (100%)** | **341 (100%)** |
| **I am still too young for the test.** | | |
| True | 44 (18.9%) | 63 (18.5%) |
| False | 179 (76.8%) | 234 (68.6%) |
| I don't know | 10 (4.3%) | 44 (12.9%) |
| **Total** | **233 (100%)** | **341 (100%)** |
| **My partner is uncomfortable about my having cervical cancer screening test** | | |
| True | 51 (22.1%) | 53 (15.6%) |
| False | 162 (70.1%) | 235 (69.1%) |
| I don't know | 18 (7.8%) | 52 (15.3%) |
| **Total** | **231 (100%)** | **340 (100%)** |
| **Cervical cancer screening test is painful and unpleasant** | | |
| True | 74 (31.9%) | 182 (31.8%) |
| False | 150 (64.7%) | 274 (47.8%) |
| I don't know | 8 (3.4%) | 117 (20.4%) |
| **Total** | **232 (100%)** | **341 (100.%)** |
| **I don't have a risk of getting cervical cancer therefore I don't want to be screened.** | | |
| True | 34 (14.6%) | 59 (17.4%) |
| False | 187 (80.3%) | 223 (65.8%) |
| I don't know | 12 (5.2%) | 57 (16.8%) |
| **Total** | **233 (100%)** | **339 (100%)** |

Table 4.14 shows the respondents' response on perceived barriers to cervical cancer screening. Of the screened respondents; 51.9% (n=120) said 'true' and 45.5% (n=105) said 'false' to "I don't want to be seen in a cervical cancer screening clinic by my friends", and 6(2.6%) did not know; 33.1% (n=56) said 'true' and 88% (n=52.1) said 'false' to "Cervical cancer screening test is humiliating", and 14.8% (n=25) did not know; 19.7% (n=46) said 'true' and 75.1% (n=175) said 'false' to "I have no time for doing a test", and 5.2% (n=12) did not know; 19.9% (n=46) said 'true' and 74% (n=171) said 'false' to "I am not aware of any test", and 6.1% (n=14) did not know; 22.8% (n=53) said 'true' and 73.3% (n=170) said 'false' to "I do not know where the test is done", and 3.9% (n=9) did not know; 36.8% (n=85) said 'true' and 56.7% (n=131) said 'false' to "I don't know how much cost required", and 6.5% (n=15) did not know;18.9% (n=44) said 'true' and 76.8% (n=179) said 'false' to "I am still too young for the test", and 4.3% (n=10) did not know; 22.1% (n=51) said 'true' and 70.1% (n=162) said 'false' to "My partner is uncomfortable about my having the test and 7.8% (n=18) did not know;31.9% (n=74) said 'true' and 64.7% (n=150) said 'false' to "Cervical cancer testing is painful and unpleasant" and 3.4% (n=8) did not know;14.6% (n=34) said 'true' and 80.3% (n=187) said 'false' to "I don't have a risk of developing cervical cancer, therefore I don't want to be screened", and 5.2% (n=12) did not know.

Of not screened respondents, 48.8% (n=167) said 'true' and 127% (n=36.9) said 'false' to "I don't want to be seen in a cervical cancer screening clinic by my friends", and 14.5% (n=50) did not know; 28.8% (n=69) said 'true' and 43.3% (n=104) said 'false'' to "Cervical cancer screening is humiliating", and 27.9% (n=67) did not know; 16.4% (n=56) said 'true' and 66% (n=225) said 'false'' to "I have no time for doing a test", and 17.6% (n=60) did not know; 50.4% (n=172) said 'true' and 27.3% (n=93) said 'false'' to "I am not aware of any test", and 22.3% (n=76) did not know; 34.4% (n=117) said 'true' and 48.2% (n=164) said 'false'' to "I do not know where the test is done", and 17.4% (n=59) did not know; 50.4% (n=172) said 'true' and 27.3% (n=93) said 'false'' to "I don't know how much it costs", and 22.3% (n=76) "Don't know how much cost requested" 18.5% (n=63) said 'true' and 68.6% (n=234) said 'false'' to "I am still too young for the test", and 12.9% (n=44) did not know; 15.6% (n=53) said 'true' and 69.1% (n=235) said 'false'' to "My partner is uncomfortable about my having cervical cancer screening test", and 15.3% (n=52) did not know; 31.8% (n=182) said 'true' and 47.8% (n=274) said 'false'' to "Cervical cancer screening test is painful and unpleasant" and 20.4% (n=117)did not know;7.4% (n=59) said 'true' and 65.8% (n=223) said 'false' to "I don't

have a risk of getting cervical cancer, therefore I don't want to be screened", and 16.8% (n=57) did not know.

### 4.2.8 Respondents' cues to action

The HBM holds that a cue or trigger is necessary for timely involvement in health-promoting behaviours. Readiness to action (perceived susceptibility and perceived benefits) is prompted by other factors or cues to initiate action (Glanz & Rimer 2008:49). This section covered the respondents' sources of information on cervical cancer screening services which cued their action, namely health care providers, media, friends or neighbours, and school.

#### *4.2.8.1 Respondents' sources of information*

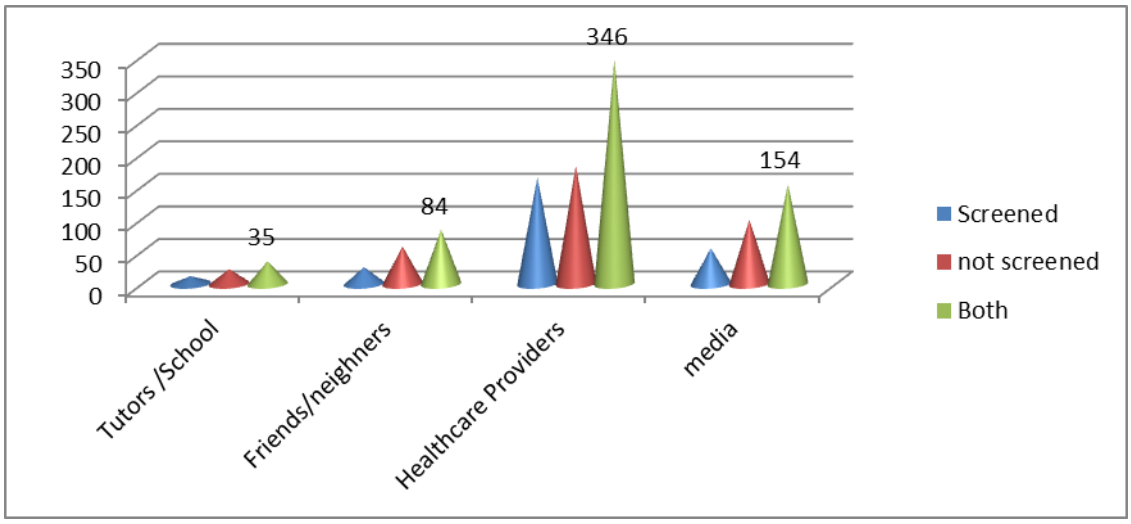


**Figure 4.5 Respondents' sources of information on cervical cancer screening**

Figure 4.5 indicates the respondents' source of information on cervical cancer screening. Of the screened respondents, 63.8% (n=164) indicated health care providers, 21.4% (n=55) indicated the media, 10.1% (n=26) indicated friends/neighbours and 4.7% (n=12) indicated tutors/school as their main sources of information. Of the not screened respondents, 50.2% (n=182) indicated health care providers, 27.4% (n=99) indicated the media, 16% (n=58) indicated friends/neighbours and 6.4% (n=23) indicated tutors/school. Majority 60% (n=346) of respondents of both groups reported that they obtained the information from health care providers followed

by the media 24.9% (n=154) as well as (13.6%; n=84) indicated friends and (5.6%; n=35) indicated neighbours and school as sources of information.

#### *4.2.8.2 Best methods for providing information about cervical cancer and screening*

**Table 4.15 Respondents' best methods for providing information about cervical cancer and screening**

| Method | Frequency | % |
|---|---|---|
| Campaign advertisement on television | 107 | 17.8 |
| Campaign advertisement on radio | 36 | 6 |
| Health talks by health care providers | 229 | 38.1 |
| Health talks by community leaders | 40 | 6.7 |
| Media and health care providers | 175 | 29.1 |
| All of the above | 14 | 2.3 |
| **Total** | **601** | **100%** |

Table 4.15 indicates that best methods for providing information about cervical cancer and screening identified by respondents. The main sources of information indicated as best methods for providing information about cervical cancer for both screened and not screened respondents were health talks by health care providers (38.1%; n=229); media and health care providers (29.1%; n=175), and campaign advertisement on TV (17.8%; n=107). Other sources of information were health talks by community leaders (6.7%; n=40); campaign advertisement on radio (6%; n=36), and 2.3% (n=14) respondents said "all of the above" sources.

### 4.2.9 Factors affecting respondents' screening practice for cervical cancer

#### *4.2.9.1 Association between respondents' socio-demographic characteristics and knowledge of cervical cancer*

Associations of the respondents' socio-demographic characteristics, reproductive health information and their knowledge of cervical cancer were calculated statistically, using Pearso chi-square test of association.

**Table 4.16 Association between respondents' screening status and socio-demographic characteristics**

| Factor | Classification | | Screening status | | Pearson Chi-Square | P-value |
|---|---|---|---|---|---|---|
| | | | Screened | Not screened | | |
| Age group | <35 years | No | 147 | 315 | 33.618 | <0.001* |
| | | % | 31.8% | 68.2% | | |
| | >35 years | No | 86 | 61 | | |
| | | % | 58.5% | 41.5% | | |
| Marital status (N=609) | Married | No | 149 | 233 | 0.241 | 0.623 |
| | | % | 39.0% | 61.0% | | |
| | unmarried | No. | 84 | 143 | | |
| | | % | 37.0% | 63.0% | | |
| Education level (N=609) | No education | No. | 22 | 28 | 1.018 | 0.272 |
| | | % | 9.4% | 7.4% | | |
| | Primary school | No. | 81 | 154 | | |
| | | % | 34.8% | 41% | | |
| | Secondary and above | No. | 130 | 194 | | |
| | | % | 40.1% | 59.9% | | |
| Occupation (N=609) | Housewife/ | No. | 65 | 112 | 0.249 | 0.618 |
| | | % | 36.7% | 63.3% | | |
| | Gov/private employee | No. | 168 | 264 | | |
| | | % | 38.9% | 61.1% | | |
| monthly income (n=609) | Less than 1000 birr | No. | 67 | 92 | 1.371 | 0.242 |
| | | % | 42.1% | 57.9% | | |
| | 1000 birr and above | No. | 166 | 284 | | |
| | | % | 36.9% | 63.1% | | |

*Highly significant association p<0.001

Table 4.16 indicates cross-tabulation of SPSS output of screening status by respondents' socio-demographic characteristics. There was a significant association of age category ($X^2$=33.618 at p-value <0.001) and screening status. In this study indicates that older rather than younger respondents were screened. Other socio demographic was not characteristics did not indicate association with screening status of the respondent.

#### *4.2.9.2 Association between respondents' screening status and reproductive health information*

**Table 4.17 Association between respondents' screening status and reproductive health information**

| Factors | classification | Screening status | | $X^2$ | P-value |
|---|---|---|---|---|---|
| | | Screened | Not screened | | |
| What was your age of menarche | <14 years | 85 (36.5%) | 127 (33.8%) | 5.5 | 0.139 |
| | 14-15 years | 113 (48.5%) | 203 (54) | | |
| | >15 years | 26 (11.2%) | 25 (6.6%) | | |
| | No response | 9 (3.8%) | 21 (5.6%) | | |
| | **Total** | **233 (100%)** | **376 (100%)** | | |
| Age of first intercourse | <15 years | 23 (9.9%) | 33 (8.8%) | 6.8 | 0.079 |
| | 15-18 years | 85 (36.5%) | 145 (38.6%) | | |
| | >18 years | 113 (48.5%) | 158 (42%) | | |
| | No response | 12 (5.1%) | 40 (10.6%) | | |
| | **Total** | **233 (100%)** | **376 (100%)** | | |
| Age of first pregnancy | <15 years | 16 (6.9%) | 15 (4%) | 12.4 | 0.006** |
| | 15-18 years | 84 (36%) | 113 (30%) | | |
| | >18 years | 115 (49.4%) | 186 (49.5%) | | |
| | No response | 18 (7.7%) | 62 (16.5%) | | |
| | **Total** | **233 (100%)** | **376 (100%)** | | |
| Have you had any miscarriage | Yes | 64 (27.5%) | 76 (20.2%) | 4.5 | 0.107 |
| | No | 150 (64.4%) | 262 (69.7%) | | |
| | No response | 19 (8.1%) | 38 (10.1) | | |
| | **Total** | 233 (100%) | 376 (100%) | | |
| Have you been using birth control contraceptives | Yes | 207 (88.9%) | 277 (73.7%) | 20.7 | <0.001** |
| | No | 22 (9.4%) | 89 (23.7%) | | |
| | No response | 4 (1.7%) | 10 (2.6%) | | |
| | **Total** | **233 (100%)** | **376 (100%)** | | |
| Type of contraceptive used | Hormonal contraceptives | 152 (73.5% | **229 (82.7%)** | 14.3 | 0.003* |
| | Barrier methods | 46 (22.2%) | 30 (10.8%) | | |
| | Mixed methods | 9 (4.3%) | 14 (5.1%) | | |
| | No response | - | 4 (1.4%) | | |
| | **Total** | **207 (100%)** | **277 (100%)** | | |
| Number of children | None | 21 (9.1%) | 122 (32.4%) | 66.7 | <0.001** |
| | One | 40 (17.2%) | 98 (26.1%) | | |
| | Two to four | 136 (58.3%) | 125 (33.2%) | | |
| | Above four | 33 (14.1%) | 28 (7.5%) | | |
| | No response | 3 (1.3%) | 3 (0.8) | | |
| | **Total** | **233 (100%)** | **376 (100%)** | | |

**Highly significant p< 001, **Highly significant p< 0.01, significant p<0.05

As Table 4.17 indicates of the screened respondents, 49.4% (n=115) were over 18 years old at their first pregnancy; 36% (n=84) were between 15 and 18 years old, and 6.9% (n=16) were age below 15 years old. Of the not screened respondents, 49.5% (n=186) were over 18 years old at their first pregnancy; 30% (n=113) were between 15 and 18 years old, and 4% (n=15) were below 15 years old. The study identified that

there is significant association between the age first pregnancy and screening status of the respondents $X^2$=12.40.at p-value <0.01.

The chi-square test, with $X^2$value=20.7 and p-value <0.001, found that the respondents' screening status and their use of contraceptives were significantly associated. Of the screened respondents, 88.8% (n=207) used contraceptives; 9.4% (n=22) did not, and 1.7% (n=4) did not answer the question. Of the not screened respondents, 73.7% (n=277) used contraceptives, 23.7% (n=89) did not, and 2.7% (n=10) did not answer the question.

Concerning the type contraceptives use of respondents, 73.5% (n=152) of screened respondents and 82.7% (n=229) not screened respondents were used hormonal contraceptives; 22.2% (n=46) of screened respondents and 10.8% (n=30) of not screened respondents used Barrier Methods of contraceptives; 4.3% (n=9) of screened respondents and 5.1% (n=14) of not screened respondents were used mixed method of contraceptives.The type of contraceptives that respondents used revealed highly significant association with the screening status of the respondents $X^2$=14.3, p-value=0.003, where 73.5% (n=152).

Of the screened respondents 58.3% (n=136) have two to four children and 33.2% (n=125) of not screened respondents have two to four children; 17.2% (n=40) of screened respondents and 26.1% (n=98) of not screened respondents have one child; 14.1% (n=33), of screened respondents and 9.1% (n=21) of not screened respondents have above four children; 9.1% (n=21) of screened respondents and 32.4% (n=122) of not screened respondents had no child. The number the respondents had revealed highly significant association in Pearson chi-square test $X^2$=66.7 and p-value<0.001. The study indicated that respondents with two to four children were more found screened.

**Table 4.18 Respondents' knowledge level of cervical cancer, and screening status**

| Classification | Knowledge of cervical cancer | | $X^2$ | P-value |
|---|---|---|---|---|
| | Good and moderate knowledge of cervical cancer N (%) | Poor knowledge of cervical cancer N (%) | | |
| Screened | 126 (54.1%) | 107 (45.9%) | 51.649 | <0.001 |
| Not screened | 95 (25.3%) | 281 (74.7%) | | |

By assessing the responses of each knowledge questions about cervical cancer, symptoms, prevention, cervical screening tests; treatment options, the researcher graded the knowledge of women as poor or moderately good. Then a chi-square test of association between respondents' knowledge and their screening status was performed. The result indicated in the table 4.18 verified a significant difference between screened and not-screened women knowledge about cervical cancer screening. The data verified 54.1% (n=126) of screened respondents and 25.3% (n=95) of not-screened respondents have good to moderately knowledge level about cervical cancer; while 25.3% (n=95) of screened respondents and 74.7% (n=281) of not screened respondents have poor knowledge level about cervical cancer This implies that screened women were found to be more knowledgeable about cervical cancer than not-screened women. ($X^2$=51.649, p-value=0.001).

#### *4.2.9.3 Association between respondents' perceptions and screening status*

*4.2.9.3.1 Respondents' screening status and perceived susceptibility to cervical cancer*

**Table 4.19 Respondents' screening status and perceived susceptibility to cervical cancer**

| Risk of getting cervical cancer | Screening status | N | Mean | Std. deviation | T-test for equality of means | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | Mean difference | T-value | Df | P-value |
| I worry about getting cervical cancer | Screened | 227 | 3.21 | 1.407 | .407 | 3.420 | 565 | .001 |
| | Not Screened | 340 | 2.80 | 1.377 | | | | |
| I worry about getting human papilloma virus | Screened | 232 | 3.12 | 1.304 | .382 | 3.432 | 574 | .001 |
| | Not Screened | 344 | 2.74 | 1.316 | | | | |
| I believe that I am at risk of developing cervical cancer | Screened | 232 | 2.81 | 1.295 | .122 | 1.115 | 570 | .265 |
| | Not Screened | 340 | 2.69 | 1.279 | | | | |
| It is beyond my personal control, because all women have an equal chance of developing cervical cancer | Screened | 232 | 2.97 | 1.356 | .022 | .195 | 572 | .845 |
| | Not Screened | 342 | 2.95 | 1.347 | | | | |
| My chances of getting cervical cancer are high | Screened | 232 | 2.78 | 1.254 | .144 | 1.341 | 572 | .181 |
| | Not Screened | 342 | 2.64 | 1.271 | | | | |
| My chances of contracting human papilloma virus are low | Screened | 233 | 3.36 | 1.221 | .307 | 2.947 | 575 | .003 |
| | Not Screened | 344 | 3.06 | 1.230 | | | | |
| I have the ability to avoid cervical cancer | Screened | 233 | 3.75 | 1.121 | .338 | 3.341 | 575 | .001 |
| | Not Screened | 344 | 3.41 | 1.240 | | | | |
| I have the ability to avoid HPV infection | Screened | 233 | 3.64 | 1.200 | .208 | 2.023 | 573 | .044 |
| | Not screened | 342 | 3.43 | 1.220 | | | | |

The respondents' perceptions of their susceptibility to cervical cancer were assessed using a 5-point Likert scale and their perceptions compared using independent sample T-tests. Table 4.19 indicates repondents' screening status and perceived susceptibility to cervical cancer

Regarding their worry about getting cervical cancer, the screened respondents' average agreement level was M=3.21 and the not-screened respondents' average was M=2.80. The t-test result with t=3.420 and p-value=0.001 <0.05 indicated that the two groups differed significantly in their agreement with the statement. The screened respondents were relatively more worried than the not screened respondents.

Regarding their worry about getting HPV, the screened respondents' rating was M=3.21 and the not-screened respondents' rating was M=2.74. The t-test result (t-value=3.432, p-value=0.001<0.01) indicated a relatively higher level of worry by the screened respondents than the not screened respondents.

Regarding their belief that they were at risk of developing cervical cancer, there was no significant difference between the screened respondents (M=2.81) and the not screened respondents (M=2.69) (with t-value=1.115, p-value=0.265 >0.05).

Regarding the statement that cervical cancer was beyond their personal control, there was no significant difference between the screened respondents (M=2.97) and the not screened respondents (M=2.95) (with t-value=1.115, p-value=0.265 >0.05).

Regarding the statement that their chances of getting cervical cancer were high, both groups of respondents had a similar low level of agreement (t-value=1.341, p-value=0.181 >0.05). There was no significant difference between the screened respondents (M=2.78) and the not screened respondents (M=2.64). Regarding their chances of contracting HPV being low, the screened respondents' rating was M=3.36 and the not screened respondents' rating was M=3.06 (with t-value=2.947, p-value=.003). Regarding their ability to avoid cervical cancer, the screened respondents' rating was M=3.75 and the not screened respondents' rating was M=3.41 (with t-value=3.341, p-value=.001). Regarding their ability to avoid HPV, the screened respondents' rating was M=3.64 and the not screened respondents' rating was M=3.43 (with t-value=2.023, p-value=.044).

## 4.3 DISCUSSION OF QUANTITATIVE FINDINGS

The researcher used the Health Belief Model (HBM) as the conceptual framework. The HBM is based on people's beliefs about whether or not they are susceptible to a disease or condition and how their perceptions of the benefits of trying to avoid it influence their readiness to act (National Cancer Institute (NCI) 2005:13). Health behaviour is based on perceived threat of disease (Rosenstock et al 1988:177). In terms of the HBM, people's beliefs about health problems, perceived benefits of action and barriers to action, and cues to action explain engagement (lack of engagement) in health-promoting behaviour. A stimulus or cue to action must also be present in order to

activate health-promoting behaviour (Abraham & Sheeran 2015:101). This section compares the screened and not screened respondents' results in terms of the HBM constructs.

### 4.3.1 Comparison of HBM constructs between screened and not screened respondents

- **Modifying factors**

Individual characteristics, including demographic, psychological and structural variables, can affect perceptions of seriousness/severity, susceptibility, benefits, and barriers of health-related behaviours (Rosenstock 1974:328-335*).* Demographic variables include age, sex, ethnicity, and education; psychosocial variables include personality, social class, and peer and reference group pressure; structural variables include knowledge about a given disease and prior contact with the disease. These modifying variables can affect health-related behaviours indirectly either by mediating or moderating the key HBM constructs by affecting perceived seriousness, susceptibility, benefits, and barriers (Glanz et al 2015:75).

**Respondents' age**

As indicated in Table 4.16, of the total respondents 31.8% (n=147) of the screened respondents and 68.2% (n=315) of not screened respondents were age less than 35 years old while 58.5% (n=86) of screened respondents and 41.5% (n=61) of not screened were age=>35 years. The age characteristics of respondents specified that there was highly significant association of their age category ($X^2$=33.618 at level of p-value <0.001). The result implies that women in the higher age category were screened women. That is, the higher the age of woman the higher that respondent got screened for cervical cancer**.** This finding was concurrent to the study done in India where respondents whose age was 30 years and above were likely to have practice of screening for cervical cancer (Bansal, Pakhare, Kapoor, Mehrotra & Kokane 2015:327) and Arbaminch, Southern Ethiopia where mothers whose age >30 years were more likely have screen for cervical cancer (Gebru et al 2016:3). This could be age advanced women were most likely visit the health facility for different type of reproductive health problem and would have opportunity to have screening for cervical cancer.

**Marital status**

This study showed that of the total respondents 39% (n=149) of screened respondents and 61% (n=233) of not screened respondents were married; 37% (n=84) of screened respondents and 63% (n=143) of not screened respondents were unmarried. There was no significant difference of marital status on screened status. The finding was similar to study done at but differ to study done in Kumasi Metropolis of Ghana (p=0.040) and Zanzibar, Tanzania (60.58% vs 48.97%, P=0.000) where married participants were more utilised cervical cancer screening test than the unmarried group (Kokuro 2017:51; Weng et al 2020:3).

**Education level**

As Table 4.16 indicated of the total respondents 9.4% (n=22) of screened respondent 7.4% (n=28) of not screened respondents were reported that they had no education; 34.8% (n=81) of screened respondents and 41% (n=154) of not screened respondents reported that they were at primary level of education and 40.1% (n=130) of screened and 59.9% (n=194) of not screened respondents were secondary and above level of education. However, 59.9% of not screed respondents were secondary and above level of education, in this study there was no significant association between educational level and screening status of the respondents.

**Occupation/work category**

Relating the occupation category of respondents 36.7% (n=65) of screened respondents and 63.3% (n=112) of not screened respondents identified housewife and 38.9% (n=168) of screened participants and 61.1% (n=264) not screened participants identified employed. The Pearson chi-square test indicated that respondents' occupation category and screening status were not significantly associated. Both the housewives and employed respondents have similar probability of being screened and not. However, other study indicated that participants who had undergone cervical cancer screening were employed (n=55 of the n=69) (Kokuro 2017:54).

**Monthly income**

Regarding income category of the respondents 42.1% (n=67) of screened respondents and 57.9% (n=92i) of not screened respondents were reported below 1000 birr income while 36.9% (n=166) of screened respondents and 63.1% (n=284) of not screened respondents reported 1000 birr and above Birr. Hence the income category of the respondents was not associated with the screening status.

**Age of first pregnancy**

As Table 4.17 indicates of the screened respondents, 49.4% (n=115) were over 18 years old at their first pregnancy; 36% (n=84) were between 15 and 18 years old, and 6.9% (n=16) were age below 15 years old. Of the not screened respondents, 49.5% (n=186) were over 18 years old at their first pregnancy; 30% (n=113) were between 15 and 18 years old, and 4% (n=15) were below 15 years old. The study identified that there is significant association between the age first pregnancy and screening status of the respondents $X^2$=12.4.at p-value <0.01. Majority of screened respondents was above 18 years old at their first pregnancy. As compared to the not screened women

The chi-square test, with $X^2$value=20.7 and p-value <0.001, found that the respondents' screening status and their use of contraceptives were significantly associated. Of the screened respondents, 88.8% (n=207) used contraceptives; 9.4% (n=22) did not, and 1.7% (n=4) did not answer the question. Of the not screened respondents, 73.7% (n=277) used contraceptives, 23.7% (n=89) did not, and 2.7% (n=10) did not answer. In this study screened respondents were used contraceptives more as compared to not screened respondents.

Having two to four children of screened respondents revealed highly significant association in Pearson chi-square test. Of the screened respondents 58.3% (n=136) have two to four children and 33.2% (n=125) of not screened respondents have two to four children; 17.2% (n=40) of screened r3spndents and 26.1% (n=98) of not screened respondents have one child; 14.1% (n=33), of screened respondents and 9.1% (n=21) of not screened respondents have above four children; 9.1% (n=21) of screened respondents and 32.4% (n=122) of not screened respondents had no child. The number the respondents revealed highly significant association in $X^2$=66.7 and p-value< 0.001.

This indicates that majority (58.3%) of respondents with two to four children were more found screened as compared to not screened respondents.

**Awareness of cervical cancer cervical cancer, causes, prevention, risk factors, screening and treatment options**

Concerning awareness about cervical cancer respondents were asked if they had awareness on cervical cancer, causes, prevention, risk factors, screening and treatment. Of those not screened respondents 91.8% (n=345) reported that they heard about cervical cancer and 8.2% (n=31) reported that they were not heard. When compared to other studies, this finding was lower than the finding in North Uganda (Mawaka et al 2015:859) which was 99% of respondents were aware of cervical cancer and higher than studies done in Nairobi Kenya (Mungai et al 2016:88) 85% of respondents were aware of cervical cancer, Kerala India (Aswathy et al 2012:207) 72,1%, North Ethiopia (Getahun et al 2013:4) 78.7% and Jamaica (Interis 2016:53) 65% of respondents had heard about cervical cancer. This difference might be due to difference in population, disease prevalence, information about cervical cancer screening and availability of cervical cancer screening services.

Of screened respondents, 53.7% (n=173) were aware of causes of cervical cancer and 20.9% (n=60) were not aware of causes of cervical cancer; 75.1% (n=175) were aware of the risk factors for cervical cancer and 24.9% (n=58 ) were not aware the risk factors for cervical cancer; 179 (76.8%) were aware of methods of cervical cancer preventions and 54 (23.2%) were not aware of methods of cervical cancer preventions; all of them were aware of where to get test for cervical cancer; 73.8% (n=172) were aware of whether cervical cancer treatable or not and 26.2% (n=61 ) were not aware of whether cervical cancer treatable or not; 35.2% (n=82) were knew person with cervical cancer and 151 (64.8%) were not knew any person with cervical cancer.

Of not screened respondents 39.7% (n=149) were aware of the causes of cancer cervical and 60.3% (n=226) were not aware of the causes of cancer cervical cancer; 35.1% (n=132) were aware of risk factors for cervical cancer and 64.9% (n=244) were not aware of risk of cervical cancer; 33.3% (n=125) were aware of methods of cervical cancer prevention and 66.7% (n=250 ) were not aware of any methods of cervical cancer prevention; 72.5% (n=200) were aware of cervical cancer screening 27.5%

(n=175) were not aware of cervical cancer screening; 42% (n=158) aware of whether cervical cancer treatable or not and 58% (218) were not whether cervical cancer treatable or not; 27.2% (n=75) knew person with cervical cancer and 72.8% (n=301) didn't know any person with cervical cancer.

**Respondents' knowledge of cervical cancer**

To assess the knowledge of the respondents on cervical cancer, the respondents were asked to identify the part of the body affected by cervical cancer; signs and symptoms of cervical cancer; transmission, prevention and stages of cervical cancer; screening frequency and interpretation of the results; risk factors for cervical cancer and treatment options.

Regarding knowledge of the part of the body affected by cervical cancer, of the screened respondents, 92.3% (n=215) answered that the main part of body affected by cervical cancer is the cervix; 2.1% (n=5) answered the brain, and 5.6% (n=13) didn't know which parts of the body is affected by cervical cancer. Of the not screened respondents, 82% (n=283) answered that the main part of body affected by cervical cancer is the cervix, and 12.8% (n=44) answered the brain and 18 (5.2%) did not know which part of the body was affected by the disease. The result indicates higher number of screened respondents knew the part of the body affected by cervical cancer then not screened.

Regarding their knowledge of the symptoms and signs of cervical cancer, the study found no significant difference between the screened and not screened respondents (Table 4.6).

Regarding transmission of cervical cancer, 69.4% of screened respondents and 46.4% of not-screened women identified that cervical cancer can easily transmitted by sexual intercourse; 154 (44.6%) of not screened respondents do not know how cervical cancer is transmitted The study found highly significant difference between the screened and not screened respondents' knowledge of transmission with $X^{2=}48.7$, $p< 0.001$ .The screened respondents found more knowledgeable than not screened respondents on transmission ways of cervical cancer (Table 4.7).

Regarding how to prevent getting cervical cancer, as indicated Table 4.7, 53.2% (n=126) identified two and more of prevention methods listed while only 32.4% (n=112) of not screened respondents identified two and more of prevention methods listed. The screened respondents found more knowledgeable than not screened respondents on transmission ways of cervical cancer. Pearson chi squared found highly significant difference between the screened and not screened respondents' knowledge of transmission with $X^{2=}101.3$, $p< 0.001$.

Regarding the stage at which cervical cancer can be cured, 70.8% (n=165) of the screened respondents said early and 55.6% (n=192) of the not screened respondents said early that the stage of cervical cancer to be cure; while 12.1% (n=28) of screened respondents and 4.3% (n=15) not screened respondents said it cannot be cured. The study identified that screened respondents were found more knowledgeable to identify the stage in which the cervical cancer can be cured than not screened respondents ($X^2=53.7$, p-value <0.001).

Regarding treatment modality of cervical cancer, 20.1% (n=46) of the screened respondents and 15.7% (n=54) the not screened respondents said radiation; 15.7% (n=36) of screened respondents and 15.4% (n=53) said surgery said surgery; 17.9% (n=41) of screened respondents 10.1% (n=35) not screened respondents said chemotherapy;17% (n=39) of respondents and 20.9% (n=72) identified two or more of the above modalities as treatment options for cervical cancer. Pearson chi squared found highly significant difference between the screened and not screened respondents' knowledge ($X^2=17.1$, p-value <0.01)

Regarding the meaning of an abnormal cervical cancer screening result, 51% (n=121) of the screened respondents, and 27.8% (n=96) of the not screened respondents said precancerous cells; 30.1% of screened respondent and (n=70 23.1% of not screened respondents said cervical cancer; 11.6% (n=27) of screened respondents and 6.(n=21) said sexually transmitted infection, and 6.4% (n=15) of screened respondents and 46.7% (n=161) not screened respondents did not know the abnormal cervical cancer screening result. The results indicated highly significant difference in their knowledge of the meaning between the screened and not screened respondents, with $X^2=122.4$ p-value <0.001

Regarding their knowledge of the screening period, majority of 41.8% (n=97) of the screened respondents said every 5 years while 11% (n=38) of not screened respondents said every 5 years; 28% (n=65) of screened respondents and 15.7% (n=54) of not screened said every 2-3 years. On other hand 8.6% (n=20) of screened respondent and 41.1% (n=143) of not screened respondents said they did not know; the results indicated highly significant difference in their knowledge of the meaning between the screened and not screened respondents, with $X^2$=107.1 p-value <0.001.

Regarding the respondents' knowledge of risk factors for cervical cancer, of the screened respondents, 88% (n=2015) stated having multiple sexual partners was a risk factor for cervical cancer; 10.3% (n=24) said having multiple sexual partners was not a risk factor, and 1.7% (n=4) did not know. Of the not screened respondents, 72.2% (n=249) said having multiple sexual partners was a risk factor; 7% (n=24) said it was not, and 20.8% (n=72) did not know. The finding was more of similar with the study done in Uganda where (88.3%) of participants recognised cervical cancer risk factors including multiple male sexual partners (Mwaka et al 2016:862).

Of the screened respondents 79% (n=184) said having sexual intercourse at an early age was a risk factor; 13.3% (n=31) said it was not, and 7.7% (n=18) did not know. Of the not screened respondents, 84.5% (n=197) said it was a risk factor; 14.2% (n=49) said it was not, and 28.7% (n=99) did not know. The screened women tend to be more identified the risk of sexual intercourse at an early age than not screened. Study done in Kenya supports this finding (Mungai et al 2016:88). where being sexually active from a young age, identified by majority of respondent to be risks for acquiring cervical cancer.

Of the screened respondents, 62.7% (n=146) said smoking cigarettes was a risk factor; 23.2% (n=54) said it was not, and 14.1% (n=33) did not know; of the not screened respondents, 49% (n=169) said it was a risk factor; 20.9% (n=72) said it was not, and 30.1% (n=104) did not know.

Of the screened respondents, 43.8% (n=102) said use of contraceptives was a risk factor; 35.6% (n=83) said it was not, and 20.6% (n=48) did not know. Of the not screened respondents, 27.5% (n=64) said use of contraceptives was a risk factor; 79.4% (n=164) said it was not, and 50.2% (n=117) did not know. Table 4.9 indicates the respondents' knowledge of risk factors, and screening status. Majority 43.8% identified

the use of contraceptives as one of risk factor for development of cervical cancer documents of WHO identified that long time use of contraceptives increases the risk of cervical cancer as indicated (WHO 2014a:40).

Knowing about risk factors for cervical cancer helps women to focus on those that could be changed. Regarding knowledge of risk factors for acquiring cervical cancer stated on the above statements, the finding indicated that majority of the screened respondent identified the risk factors for cervical cancer more of than not screened respondents.

By assessing the responses of each knowledge questions about cervical cancer the researcher graded the knowledge of women as poor or moderately good, the researcher graded the knowledge of respondents as good knowledge level for score of 80-100%, Moderate knowledge level for score of 60-79% and Poor knowledge level for score less than 60%. Of the screened respondents 54.1% (n=126) have Good to moderately knowledge level about cervical cancer only 25.3% (n=95) of not-screened respondents have Good and moderately knowledge level about cervical cancer. On other hand 25.3% (n=95) of screened respondents and 74.7% (n=281) of not screened respondents have poor knowledge level about cervical cancer. The study found a significant gap between the screened and not-screened respondents' knowledge of cervical cancer (chi-value=51.649, p-value<0.001). This indicates having good knowledge of cervical cancer tends the respondent to be screen. Study done in Nigeria identified that Inadequate knowledge about cervical cancer was responsible for no uptake of cervical cancer screening among Nigerian women in a qualitative study in which none out of 82 of the participants ever screened (Nwobodo & Ba-Break 2015:16).

- **Perceived susceptibility to cervical cancer**

The respondents' perception of their susceptibility to cervical cancer was assessed using a 5-point Likert scale and 8 statements. The findings between the screened and not-screened respondents on their susceptibility were compared, using independent sample t-tests (Table 4.19).

The screened respondents (M=3.21) were relatively more worried about getting cervical cancer than the not screened respondents (M=2.80). The t-test result with t=3.42 and p-value=0.001 indicated a significant difference in the two groups' on perceived

susceptibility. The screened respondents (M=3.36) were relatively more worried about getting HPV compared to the not screened respondents (M=3.06). The t-test result (t-value=3.432, p-value=0.001) indicated a significant difference. The screened respondents' ability to avoid cervical cancer was rated M=3.75 compared to the not screened respondents' rating of M=3.41. The screened respondents' ability to avoid HPV infection was rated M=3.64 compared to the not screened respondents' rating of M=3.43.

In this study the screened respondents rated more on statements related to perceived susceptibility, so screened respondents found more susceptible than not screened respondents. In Mekelle Zone, Northern Ethiopia, Bayu et al (2015:2) reported that perceived susceptibility to cervical cancer was a significant predictor of cervical cancer screening service uptake. In the study done by Gebru et al (2016:297) at Arba Minch town, Southern Ethiopia, it was found that a high perceived susceptibility prompted utilisation of cervical carcinoma screening service.

- **Perceived seriousness of cervical cancer**

Tavafian (2012:4) described perceived severity as the severity of a health problem which is assessed by the individual and the feeling about the seriousness of contracting an illness or of leaving it untreated. If women think that cervical cancer is a sever disease and believe that getting cervical cancer would have serious medical, social and economic consequences for them; it is more likely to obtain cervical cancer screening test.

As shown on Table 4.12, 48.3% (n=112) of screened respondents said 'true' and 42.7% (n=99) said 'false' for 'There is very little that one can do about cervical cancer' while 28.9% (n=108) not screened respondent said 'true' and 41.4% (n=155) said 'false' for 'There is very little that one can do about cervical cancer; 72.8% (n=169) of screened respondents said 'true' and 21.1% (n=49) said false for 'I would rather screen for cervical cancer'. 59.2% (n=221) of not screened said 'true' and 23.6% (n=88) said 'false' for 'I would rather screen for cervical cancer'.

Of screened respondents 42.3% (n=99) said 'true' and 33% (n=77) said 'false' for 'Loss of cervix or uterus through surgery would affect my sexuality'. While 44.5% (n=153) of

not screened respondent said ‘true’ and 29.1% (n=100) said ‘false’ for ‘Loss of cervix or uterus through surgery would affect my sexuality’; 69% (n=162) of screened respondents said ‘true’ and 26.2% (n=61) said ‘false’ for ‘among the diseases I can imagine getting cervical cancer is among the most serious’. While 59.3% (n=203) of not screened respondent said ‘true’ and 21.1% (n=72) said false for ‘Among the diseases I can imagine getting cervical cancer is among the most serious’; 65.5% (n=150) of screened respondents said ‘true’ and 27.1% (n=62) said ‘false’ for ‘Cervical cancer is a life-threatening disease’. While 62.4% (n=213) of not screened respondents said ‘true’ and 19.4% (n=66) said ‘false’ for ‘Cervical cancer is a life-threatening disease’; 63.5% (n=148) said ‘true’ and 25.8% (n=60) said ‘false’ for ‘Cervical cancer would threaten my relationship with my husband/partner’. While 62.5% (n=215) of not screened said ‘true’ and 15.4% (n=53) said ‘false’ for ‘Cervical cancer would threaten my relationship with my husband/partner’. In this study the above statements indicated that higher screened respondents perceived seriousness of cervical cancer which indicates screened women obtained screening test as a result of their perceived seriousness/severity.

According to Glanz and Rimer (2008:45) individuals who perceive a given health problem as serious are more likely to engage in behaviours to prevent the health problem (2008:45). Similarly, 70.3% (n=163) of screened respondents said ‘true’ and 18.9% (n=44) said ‘false’ for ‘Early detection can increase survival chances’. While 57.6% (n=198) of not screened said ‘true’ and 18.3% (n=63) said ‘false’ for ‘Early detection can increase survival chances’.

Of screened respondents 19% (n=44) said ‘true’ and 60.6% (n=140) said ‘false’ for ‘All women who develop cervical cancer must have their uteruses removed’. 23% (n=79) of not screened said ‘true’ and 40.1% (n=138) said ‘false’ for ‘All women who develop cervical cancer must have their uteruses removed’; 37.3% (n=87) said ‘true’ and 35.6% (n=83) said ‘false’ for ‘Most women who develop cervical cancer will die from it’. While 36.6% (n=126) of not screened said ‘true’ and 25.9% (n=89) said ‘false’ for ‘Most women who develop cervical cancer will die from it’. 45.1% (n=105) said ‘true’ and 42.5% (n=99%) said ‘false’ for ‘my whole life would change if I had cervical cancer’. While 42.6% (n=146) of not screened respondents said ‘true’ and 32.6% (n=112) said ‘false’ for ‘My whole life would change if I had cervical cancer’. Similar finding reported that in the study done among married women in Arba Minch Town, Southern Ethiopia,

Gebru et al (2016:3) found that the participants' perceived seriousness of cervical cancer encouraged screening practice.

- **Perceived benefits of cervical cancer screening**

Perceived benefit refers to one's opinion of the efficacy of the advised action to reduce risk or seriousness or impact (Day et al 2010b:7). According to Glanz et al (2015:47), even if a person perceives personal susceptibility to a serious health condition, whether this perception leads to behavior change will be influenced by the person's belief regarding the perceived benefits of the various available actions for reducing the disease treat.

In this study 91% (n=212) of the screened respondents, said 'yes' and 3.4% (n=8) said 'no' to the statement 'Cervical cancer can be diagnosed at an early stage' and 5.6% (n=13) did not know; of the not screened respondents, 73% (n=251) said 'yes' ,8.7% (n=30) said 'no' and 18.3% (n=63) did not know to 'cervical cancer can be diagnosed at an early stage'; 83.2% (n=193) of the screened respondents said 'yes' and 12.5% (n=29) said 'no' and 4.3% (n=10) did not know to 'cervical cancer screening would save lives if detected at an early stage'; 64.2% (n=221) of not screened said 'yes', 15.7% (n=54) said 'no' and 20.1% (n=69) did not know to 'cervical cancer screening would save life if detected at an early stage', 86.6% (n=201) of the screened respondents said 'yes' and6.9% (n=16) said 'no' and 6.5% (n=15) did not know to 'cervical cancer is often curable with early detection and proper medical treatment'; 66.9% (n=230) of the not screened said 'yes' and 9% (n=31) said 'no' and 24.1% (n=83) did not know to 'cervical cancer is often curable with early detection and proper medical treatment'.;85.8% (n=199) of the screened respondents said 'yes' and 10.3% (n=24) said 'no' to 'regular cervical cancer screening decreases the risk of cervical cancer', and 3.9% (n=9) did not know. 64.4% (n=221) of not the screened respondents said 'yes' and 10.8% (n=37) said 'no' and 24.8% (n=85) did not know to 'regular cervical cancer screening decreases the risk of cancer'.

This study indicated that relatively higher number (86.6%) of screened respondents perceived the benefit of cervical cancer screening while 67.1% not screened respondents perceived the benefit of cervical cancer. The findings indicated screened respondents perceived the benefit of cervical cancer screening more than the not

screened respondents. Hence the finding of this study was supported by the theory of Health belief model theory; Health-related behaviours are influenced by the perceived benefits of taking action (Glanz & Rimer 2008:45). In Nigeria Nwobodo and Ba-Break described (2015:16) described their findings women who believed that cervical cancer is preventable via screening were more likely to uptake screening. The findings of this study were found higher when compared to the study finding in Fasa, Iran where 73% of women obtained perceived benefits (Mehraban, Namdar & Naghizadeh 2018:2157).

- **Perceived barriers to cervical cancer screening**

Perceived barriers refer to individuals' evaluation of the difficulties to behaviour modification (Glanz & Rimer 2008:48). Perceived barriers refer to the cost of taking action and individuals must believe the cost is outweighed by the benefits (Tavafian 2010:6). Thus, the joint action of susceptibility and severity offer the energy of power to take action and the perception of benefits gives an extended path of action (Glanz & Rimer 2008:45).

In this study, regarding perceived barriers to cervical cancer screening, 51.9% (n=120) of the screened respondents said 'true' and 45.5% (n=105) said 'false' to "I don't want to be seen in a cervical cancer screening clinic by my friends" and 6(2.6%) did not know.. while 48.8% (n=167) of not screened respondents said 'true' and 127% (n=36.9) said 'false' to "I don't want to be seen in a cervical cancer screening clinic by my friends", and 14.5% (n=50) did not know; 33.1% (n=56) of screened respondents said 'true' and 88% (n=52.1) said 'false' to "Cervical cancer screening test is humiliating", and 14.8% (n=25) did not know. While 28.8% (n=69) of not screened respondents said 'true' and 43.3% (n=104) said 'false' 'to "Cervical cancer screening test is humiliating". 19.7% (n=46) said 'true' and 75.1% (n=175) said 'false' to "I have no time for doing a test", and 5.2% (n=12) did not know; whereas 16.4% (n=56) of not screened respondents said 'true' and 66% (n=225) said 'false'' to "I have no time for doing a test", and 5.2% (n=12).

Similarly, 19.9% (n=46) said 'true' and 74% (n=171) said 'false' to "I am not aware of any test", and 6.1% (n=14) did not know. Whereas 50.4% (n=172) of not screened respondents said 'true' and 27.3% (n=93) said 'false'' to "I am not aware of any test", and 22.3% (n=76) did not know; 22.8% (n=53) of screened respondents said 'true' and 73.3% (n=170) said 'false' to "I do not know where the test is done", and 3.9% (n=9) did

not know. Whereas 34.4% (n=117) of not screened respondents said ‘true’ and 48.2% (n=164) said ‘false’’ to “I do not know where the test is done”, and 17.4% (n=59) did not know; 36.8% (n=85) of screened respondents said ‘true’ and 56.7% (n=131) said ‘false’ to “I don’t know how much cost required”, and 6.5% (n=15) did not know. Whereas 50.4% (n=172) of not screened respondents said ‘true’ and 27.3% (n=93) said ‘false’’ to “I don’t know how much it costs”, and 22.3% (n=76) “Don’t know how much cost requested” 18.9% (n=44) of screened respondents said ‘true’ and 76.8% (n=179) said ‘false’ to “I am still too young for the test”, and 4.3% (n=10) did not know. While 18.5% (n=63) said ‘true’ and 68.6% (n=234) said ‘false’’ to “I am still too young for the test”, and 12.9% (n=44) did not know. 22.1% (n=51) of screened respondents said ‘true’ and 70.1% (n=162) said ‘false’ to “My partner is uncomfortable about my having the test and 7.8% (n=18) did not know, while 15.6% (n=53) of not screened respondents said ‘true’ and 69.1% (n=235) said ‘false’’ to “My partner is uncomfortable about my having cervical cancer screening test”, and 15.3% (n=52) did not know.

Of screened respondents 31.9% (n=74) said ‘true’ and 64.7% (n=150) said ‘false’ to “Cervical cancer testing is painful and unpleasant” and 3.4% (n=8) did not know while 31.8% (n=182) said ‘true’ and 47.8% (n=274) said ‘false’’ to “Cervical cancer screening test is painful and unpleasant” and 20.4% (n=117). 14.6% (n=34) of screened respondents said ‘true’ and 80.3% (n=187) said ‘false’ to “I don’t have a risk of developing cervical cancer, therefore I don’t want to be screened”, and 5.2% (n=12) did not know while 17.4% (n=59) of not screened respondents said ‘true’ and 65.8% (n=223) said ‘false’ to “I don’t have a risk of getting cervical cancer, therefore I don’t want to be screened”, and 16.8% (n=57) did not know.

In this study the extent of barrier felt by screened and not-screened women were not significantly differ except lack of knowledge about the screening, place where to perform the test, and the price of the test are somehow more to not-screened women which prevent them from cervical cancer screening. Cervical cancer screening programme with VIA is free of charge in Ethiopia at public health centres. However, lack of knowledge where to get the test and how much the test costs found to be a barrier 50% of not-screened respondents. This indicated that lack of awareness had hindered not-screened women to the test of cervical cancer screening. The finding of the study is supported by a systematic review of 31 studies done by Devarapalli, Labani, Nagarjuna, Panchal and Asthana (2018:318) and study on perceived risk and barrier for cervical

cancer screening in Tamil Nadu, lack of awareness was one of the key barrier to access screening service. (Jayaraman, Khichi, Singh, Goel, Roy & Goyal 2016:768). Similarly lack of knowledge about cervical cancer and where screening services are offered, fear of pain, unpleasant side effects and positive result, were identified to impede cervical cancer screening uptake in Nigeria (Nwobodo and Ba-Break 2015:16).

In this study 31.8% of respondents reported that cervical cancer screening test procedure found painful and unpleasant. However, this finding was also presented in qualitative study done by Armstrong, James and Dixon-Woods (2012:464) where most participants reported embarrassment and discomfort (sometimes severe) in exposing personal part of their body to the practitioner conducting the procedure, and felt the cervical screening procedure involved as painful, uncomfortable and personally threatening.

- **Cues to action**

The HBM holds that a cue or trigger is necessary for timely involvement in health-promoting behaviours. Readiness to action (perceived susceptibility and perceived benefits) is prompted by other factors or cues to initiate action (Glanz & Rimer 2008:49).

In this study 346 (55.9%) of women had obtained information on cervical cancer screening through health care providers which is concurrent to other study done in Eastern Ethiopia where the health institution mentioned as the main source of information (51.1%) for cervical cancer by the respondents (Muhye, Assefa, Mohammed & Dessie 2017:24) followed by media 31.3%. Regarding preferable choice of obtaining information about cervical cancer, 38.1% (n=229) of respondents reported that the preferred and best method of providing information about cervical cancer and screening to be health care providers, which is similar finding on study done by Nattembo (2018:3) where most the respondent intended to access cervical cancer information from a health professional based on the idea that they more knowledgeable and informed about cervical cancer issues. The second option was combination of media and health care provider 26.7% (n=175), followed by television 17.6% (n=107) and community leaders 6.6% (n=40).

## 4.4 SUMMARY

This chapter discussed the quantitative data analysis and findings of the study. Chapter 5 discusses the qualitative data analysis and findings.

# CHAPTER 5

# PRESENTATION AND DISCUSSION OF QUALITATIVE DATA

## 5.1 INTRODUCTION

Chapter 4 discussed the quantitative data analysis and findings. This chapter presents the research findings on the in-depth interview conducted with health care providers on the experiences and views on cervical cancer service utilisation. The biographical data the health care workers are presented first. The emerged themes and categories are presented subsequently.

## 5.2 DATA MANAGEMENT AND ANALYSIS

To understand the research question, the study follows scientific research methods. In the process of data collection interview and discussion were successfully employed. At the beginning of the interview conducted the interviewer introduced the research topic, objective along with the contents of the informed consent document

The process of data collection scheduled was key informant interviews with health care professionals working at maternal health service units in the health centers. All participants completed a consent form before the interview and the discussions takes place face to face using interview guid questionnaire and all the ethical process were followed, including introducing the objective of the study, grantee of anonymity and confidentiality (see Annexure H).

The researcher used a convergent mixed methods approach to collect quantitative and qualitative data (Creswell 2014:43). Quantitative data was collected from clients attending mathernal health services and qualitative data from health care providers (Creswell & Creswell 2018:44). The researcher incorporated both sets of data into the interpretation of the overall results. The quantitative data was statistically analysed to establish clear predictors, and then triangulated with the qualitative data to be used in the development of the guidelines. The researcher then developed the guidelines to

improve utilisation of cervical cancer screening based on the quantitative and qualitative findings.

## 5.3 RESPONDENTS' BIOGRAPHICAL PROFILE

### Table 5.1 Participants' biographical profile

| No | Health Centre | Sex | Age | Professional and educational level | Years of service | Position in the health centre |
|---|---|---|---|---|---|---|
| 1 | Kotebe | M | 37 | Health Officer, BSc | 10 years | FP provider + pre-cancer service provider |
| 2 | Kotebe | M | 33 | Health Officer, BSc | 10 years | FP provider and OR assistance |
| 3 | Kotebe | F | 30 | Midwife, BSC | 7 years | ANC and delivery service |
| 4 | Yeka woreda1 | F | 32 | Midwife, BSc | 5 years | FP provider **+** pre-cancer service provider |
| 5 | Yeka woreda1 | F | 28 | Nurse, BSc | 5 years | ANC provider |
| 6 | Yeka woreda1 | M | 34 | Nurse, BSc | 7 years | Delivery service + pre-cancer service provider |
| 7 | Semen | F | 34 | Midwife, BSc | 10 years | Delivery and postnatal service provider |
| 8 | Semen | F | 38 | Nurse, BSc | 10 years | Pre-cancer service provider |
| 9 | Semen | M | 35 | Nurse, BSc | 10 years | FP provider |
| 10 | Woreda 9 | F | 37 | Health Officer, BSc | 10years | FP coordinator |
| 11 | Woreda 9 | F | 30 | Nurse, BSc | 7 years | ANC coordinator |
| 12 | Woreda 9 | M | 32 | Nurse, BSc | 12 years | FP + pre-cancer service provider |
| 13 | Kolfe keranyo | F | 33 | Nurse, BSc | 7 years | ANC provider |
| 14 | Kolfe keranyo | F | 30 | Midwife, BSc | 7 years | Delivery and postnatal service provider |
| 15 | Kolfe keranyo | M | 27 | Midwife, BSc | 5 years | FP + pre-cancer service provider |
| 16 | Arada HC | M | 27 | Midwife, BSc | 5 years | Midwifery, ANC, Abortion Care Unit |
| 17 | Arada HC | F | 34 | Nurse, BSc | 12 years | FP, pre-cancer service provider |
| 18 | Arada HC | F | 30 | Nurse, BSc | 7 years | ANC coordinator |

Table 5.1 presents the respondents' biographical profile. The qualitative data was collected from 18 health professionals at the 6 selected health centres; that is, three respondents at each health centre. The participants consisted of health officers, midwives and nurses. Most of the respondents worked in the cervical cancer screening service delivery rooms on rotation. The respondents' biographical profile consisted of age, sex, professional and educational level, years of service, and position in the health centre.

Of the participants, thirty-nine per cent (n=7) were males and 51% (n=11) were females. Regarding their profession, 16.7% (n=3) were health officers; 33.3% (n=6) were midwives, and 50% (n=9) were nurses.

Regarding age of respondents, 16.7% (n=3) were 27-28 years old and 83.3% (n=15) were 30-38 years old.

Regarding year of experience, 22.2% (n=4) had 5 years' experience; 33.3% (n=4) had 7 years' experience; 33.3% (n=4) had 10 years' experience, and 11.1% (n=2) had 12 years' experience.

## 5.4 QUALITATIVE FINDINGS

The researcher used the ten questions from the interview questionnaire as the themes and developed the sub-themes from the respondents' answers.

### Table 5.2 Themes and sub-themes

| Themes | | Sub-themes | |
|---|---|---|---|
| 1 | Involvement in cervical cancer screening provision | 1.1<br>1.2 | Assignment on rotation<br>Involvement in/assignment to other services |
| 2 | Health centre's available strategies/activities to prevent cervical cancer | 2.1<br>2.2<br>2.3<br>2.4 | Availability of separate unit for the service<br>Availability of trained health provider<br>Presence of campaign session<br>Presence of regular awareness and educational activities |
| 3 | Women's response to having cervical cancer screening | 3.1 | Accepting information offered |
| 4 | Women's knowledge of the advantage of cervical cancer screening test | 4.1<br>4.2 | Poor knowledge of cervical cancer screening<br>Information bias/misinformation on cervical cancer screening |
| 5 | Opinion about the perception of women of cervical cancer screening test? | 5.1<br>5.2 | Perception of advantage /benefit of screening<br>Perception of seriousness/risk of cervical cancer |
| 6 | Women's reasons given to have cervical cancer screening | 6.1<br>6.2 | Women's educational background<br>Counselling service |
| 7 | Women's reasons given not to have cervical cancer screening | 7.1<br>7.2<br>7.3<br>7.4 | Low-level of knowledge about cervical cancer screening<br>Fear of the procedure<br>Permission from their spouses<br>Fear of the results |
| 8 | Challenges in cervical cancer screening service in the health centre | 8.1<br>8.2 | Inadequate awareness and health education activities<br>Shortage of trained health professionals |

| Themes | Sub-themes |
|---|---|
| | 8.3 Lack of responsible person assigned to the service<br>8.4 Health professionals' lack of commitment |
| 9 Suggestions to address the challenges | 9.1 Assignment of responsible health provider and supply<br>9.2 Appropriate work plan and data management<br>9.3 Strengthening awareness and education activity<br>9.4 Capacitating the health professional |
| 10 Suggestions to increase cervical cancer screening uptake | 10.1 Enhancing community awareness<br>10.2 Strengthening of cervical cancer screening service<br>10.3 Prompt action research to investigate existing problems |

Table 5.2 lists the themes and sub-themes. The findings are discussed according to the themes and sub-themes.

### 5.4.1 Theme 1: Involvement in cervical cancer screening provision

This theme indicated the respondents' involvement in cervical cancer screening provision. The sub-themes were assignment on rotation, and involvement in/assignment to other services.

#### *5.4.1.1 Sub-theme 1.1 Assignment on rotation*

Some of the respondents were assigned to cervical cancer screening service, and worked in the pre-cancer screening service provision room; some had VIA training and were assigned to cervical cancer screening. Some respondents did patient counselling and did cervical cancer testing when on rotation. The respondents were not permanently assigned, but were assigned to other units and worked on rotation because of the shortage of health workers. According to respondents,

> I have been trained to and work in pre-cancer service provision room. (Participant 8)

> I took the VIA training and I was assigned in cervical cancer screening service provision room. (Participant 15)

> I have taken the training therefore I can do it, and I am counselling women who come for family planning service and I send them to the screening unit for the screening test. I am also assigned to the pre-cancer service provision room on rotation. (Participant 6)

> I have taken training therefore I can do it, and I am working on counselling and testing and provide the test for those interested to be tested, when I am assigned in the cervical cancer provision room during my rotation. (Participant 7)

#### *5.4.1.2 Sub-theme 1.2: Involvement in/assignment to other services*

Some of the respondents provided counselling and cervical cancer screening after FP service. According to a respondent,

> I have taken the training and I am working in the area, after provision of FP service and counselling for cervical cancer screening. If the women agree, I take the test. (Participant 2)

In order to achieve successful cervical cancer screening provision and promote uptake, it is important that a qualified person should be responsible for the service. This would facilitate early detection and treatment service provision at the health centres. The respondents indicated that they were not permanently assigned, but worked on rotation because of staff shortages.

In their study on the barriers to the delivery of cervical cancer screening and early treatment services in Malawi, Munthali, Ngwira and Taulo (2015:505) found that the health care providers who did the screening also provided antenatal and family planning services due to the shortage of staff.

### 5.4.2 Theme 2: Available strategies/activities in the health centre for the prevention of cervical cancer

Cervical cancer screening is the main strategy to prevent cervical cancer. In the selected health centres, the available strategies/activities for the prevention of cervical cancer were the availability of a separate unit for the service; availability of trained staff; campaign sessions, and regular awareness and education activities.

#### *5.4.2.1 Sub-theme 2.1: Availability of separate unit for the service*

Concerning the availability of separate unit for the service, the respondents indicated that there was a specific room for cervical cancer screening provision. According to respondents,

> In our health centre there is one separate room for this programme, as strategy counselling should be given in all rooms of OPD and MCH clinics where clients visit. (Participant 4)

> There is one separate room for the service and trained health workers were assigned for service provision. (Participant 13)

#### *5.4.2.2 Sub-theme 2.2: Availability of trained health staff*

The availability of trained staff was a strategy to promote cervical cancer prevention by screening provision. According to respondents,

> Trained health workers are assigned for service provision. (Participant 13)

> In our health centre, there is one separate room for this service, with a health officer and one nurse assigned regularly. (Participant 6)

#### *5.4.2.3 Sub-theme 2.3: Campaign sessions*

The respondents stated that campaign sessions to raise awareness of cervical cancer screening were provided as a strategy in their health centres. According to one respondent,

> Community awareness is given in campaign sessions. (Participant 12)

#### *5.4.2.4 Sub-theme 2.4: Regular awareness creation and education activities*

The respondents stated that regular awareness and educational activities were another strategy to promote cervical cancer screening. According to respondents,

> Education is given in regular health education programmes. In addition, awareness creation activities are done in all service delivery rooms. (Participant 7)

> In our health centre as strategy, awareness about the service is given in all rooms of OPD and MCH clinics where the clients visit, then the women were referred to the pre-cancer service provision unit. In addition, health education is also given at OPD level in the regular health education programme to all clients. (Participant 5)

Some respondents stated that the awareness activities were not always strong or provided regularly. According to respondents,

> Even though it is not strong, sometimes awareness would be given related to the service in all units where the women get health service. (Participant 15)

> But I don't think, practically, the awareness creation activities are done properly. (Participant 1)

### 5.4.3 Theme 3: Women's responses to having cervical cancer screening

Theme 3 was women's response to having cervical cancer screening. The sub-theme was accepting information offer regarding cervical cancer screening test.

#### *5.4.3.1 Sub-theme 3.1: Accepting information offered*

The respondents stated that women generally appreciated the information offered on the advantage of screening. According to respondents,

> They have good response, if we give good counselling they accept. Nowadays the number of women who came the screening was increasing. (Participant 12)

> Most of the time the women would be counselled in all units, then they would agree but they did not screen. (Participant 13)

> I am working in the maternity delivery room. As far as the women I counselled understood and agreed to the screening programme, they promised me that they would return after delivery. (Participant 14)

> When we give good counselling, their response is good. Some of them accept the counselling and say okay, they want to think over it. (Participant 16)

However, one respondent stated that many women seemed to agree but did not want to screen:

> Most women did not say no, if they were counselled properly, but there were women who did not practise it. They left and went away. Some women also rejected [screening] totally. (Participant 1)

### 5.4.4 Theme 4: Women's knowledge of advantage of cervical cancer screening

Theme 4 was women's knowledge of the advantage of cervical cancer screening. The sub-themes were poor knowledge of cervical cancer screening, and information bias/misinformation on cervical cancer screening.

#### *5.4.4.1 Sub-theme 4.1: Poor knowledge of cervical cancer screening*

The respondents indicated that most women had a low level of knowledge of cervical cancer screening; many women had poor knowledge of the advantage of the screening test as preventing cervical cancer, and some women needed to talk to their husbands first. According to respondents,

> Most of them have low knowledge about the disease, cause, transmission, prevention and screening. (Participant 9)

> I can say that most of the women have low level of knowledge or they did not know about cervical cancer screening as preventive for cervical cancer. (Participant 11)

> I can say that most women had poor knowledge of the disease and about the advantage of cervical cancer screening. (Participant 15)

> Poor level of knowledge about screening; some also need consultation with their husbands. (Participant 15)

A study in Nigeria found that inadequate knowledge about cervical cancer was one of the determinants of low cervical cancer screening uptake (Nwobodo & Ba-Break 2015:16).

#### *5.4.4.2 Sub-theme 4.2: Information bias/misinformation on cervical cancer screening*

The respondents referred to women with poor knowledge of causes, risk factors, prevention and screening, and women with a lack of correct information or with misinformation about cervical cancer screening and thus did not perceive that they were at risk. According to a respondent,

> Most women have heard about cervical cancer and service, but they do not have correct information about the screening. They have misinformation from somewhere, and when we tried to tell them, they tried to accept but still need repeated awareness creation programmes. (Participant 5)

### 5.4.5 Theme 5: Women's perception of cervical cancer screening

Theme 5 was women's perception of cervical cancer screening test. The sub-themes were perception of advantage/benefit of screening, and perception of seriousness of cervical cancer.

#### *5.4.5.1 Sub-theme 5.1: Perception of advantage/benefit of screening*

The respondents stated that the majority of women had little perception of the advantage or benefit of cervical cancer screening. According to respondents,

> They have poor perception of the advantage of the screening test. (Participant 4)

> The majority do not have good knowledge; the gap is not in their perception or attitude but in the knowledge. So, if a woman did not have adequate knowledge, she could not consider the screening test important. (Participant 16)

> Since most of the women have a knowledge gap, they also have a poor perception of the advantage of the screening test. Some also did not perceive that they could get the disease. They perceived the disease as something that came from God. (Participant 10)

The respondents also indicated that women with higher educational levels and screened women showed a good perception of the advantage of cervical cancer screening. According to respondents,

> Some women, especially with a higher level of education, have a good knowledge of the advantage of this screening test and perceived the advantage of screening. (Participant 14)

> Of course, some women who had been screened understood and had a good perception that the problem is serious and considered themselves at risk. That is why they screened. (Participant 17)

#### *5.4.5.2 Sub-theme 5.2: Perception of seriousness/risk of cervical cancer*

The respondents indicated that some women did not perceive that cervical cancer is serious and so thought they were not at risk. According to respondents,

> They did not know that they could have a risk of having the disease therefore they did not take it as a serious problem to them, and did not perceive as it as a risk. (Participant 10)

> They think that the problem may not affect them, and do not perceive that they are at risk or that it is serious. (Participant 8)

> To me, there is a wide knowledge gap. They perceived that they might not be affected by the disease, so they did not take it as serious. (Participant 6)

> Most women did not have enough knowledge. They thought that they might not be affected by the disease, so they did not take the risk as serious. (Participant 7)

> As I said, most of them did not know about the advantage of screening, therefore, they did not perceive that they were at risk. (Participant 3)

In their study among married women in Arba Minch Town, Southern Ethiopia, Gebru et al (2016:3) found that the participants' perceived seriousness of cervical cancer encouraged screening practice.

### 5.4.6 Theme 6: Women's reasons to have cervical cancer screening

Theme 6 was reasons given by women to have cervical cancer screening. The sub-themes were women's educational background, and counselling.

#### *5.4.6.1 Sub-theme 6.1: Women's educational background*

The respondents indicated that women's educational background was a reason for them to have cervical cancer screening. Educated women were aware of the disease and screening. According to respondents,

> Women who have good knowledge about the problem and about the advantage of the screening were screened for cervical cancer, especially educated women can easily understand. (Participant 17)

> Educated women were also [the ones] who agreed to be screened because they get better information from school, from reading or the internet. (Participant 8)

> Some of them knew about the disease, especially those who were educated. They told me that they had read, or heard about the disease from media. (Participant 7)

#### *5.4.6.2 Sub-theme 6.2: Counselling service*

The respondents stated that the strength of counselling provided to the women was one of the reasons for women to be screened. According to respondents,

> It depends on the strength of the counselling. If they get adequate counselling and education, they will have cervical cancer screening. (Participant 2)

> If a woman has adequate and appropriate counselling and information on the disease, prevention and advantage of the screening, she could have screening. (Participant 3)

### 5.4.7 Theme 7: Women's reasons not to have cervical screening

Theme 7 was reasons given by women not to have cervical screening. The sub-themes were low level of knowledge about cervical cancer screening; fear of the procedure; permission from their spouses, and fear of the results.

#### *5.4.7.1 Sub-theme 7.1: Low level of knowledge about cervical cancer screening*

The respondents stated that a low level of knowledge about cervical cancer screening was one of the reasons for women not to be screened. According to respondents,

> I think women who did not have enough knowledge about cervical cancer were not screened. (Participant 8)

> I think the reason not to have screening is because they did not have adequate information about the advantage of the screening test. There is a knowledge gap. (Participants 1, 4)

> Low level of knowledge is the reason not to be screened. (Participant 10)

> Women with a poor level of knowledge or incorrect knowledge about the advantage of the screening did not want to screen. (Participant 14)

#### *5.4.7.2 Sub-theme 7.2: Fear of the procedure*

The respondents stated that fear of the procedure was another reason that some women did not want to be screened. According to respondents,

> Some women are afraid the procedure. (Participant 6)

> Some women are afraid of the procedure; some are afraid to be seen by speculum, they perceive that it has discomfort. (Participant 7)

> Poor knowledge and fear of the procedure would be some women's reason not to be screened. (Participant 12)

> Also some women have a fear of the procedure. (Participant 17)

> Low level of awareness and fear of the procedure was the reason not to screen. (Participant 18)

A study in Kenya on the challenges of cervical cancer screening found that many participants were not aware of the importance of screening; thought it would be painful, and were afraid of the screening results (Kei, M'Ndegwa, Ndwiga & Masika 2016:293).

#### *5.4.7.3 Sub-theme 7.3: Permission from their spouse*

The respondents indicated that permission from their spouse was another reason for some women not to be screened. Some respondents stated that women said they needed to have permission from their husband or families for the screening. According to respondents,

> Some of them also want permission from their spouse. (Participant 4)

> When you counsel them, some women need consultation of their husbands. (Participant 13)

> Some of them want to talk to somebody from the family. (Participant 5)

In Malawi, Munthali et al (2015:505) found that some women opted to go home first before getting the treatment and consult their husbands and relatives.

#### *5.4.7.4 Sub-theme 7.4: Fear of the results*

The respondents stated that fear of the results was another reason for some women not to be screened. According to a respondent,

> The reason for women not to have cervical cancer screening is that most of them fear the procedure. Some women are afraid of the result; that if the result indicates there is cancer they don't want to hear it, so they don't want to be screened or they leave without hearing. (Participant 9)

### 5.4.8 Theme 8: Challenges in cervical cancer screening service in the health centres

Theme 8 was the challenges in cervical cancer screening in the respondents' health centres. The sub-themes were inadequate awareness and health education activities; shortage of trained health professionals; lack of responsible person assigned to the service, and health professionals' lack of commitment.

#### *5.4.8.1 Sub-theme 8.1: Inadequate awareness and health education activities*

The respondents indicated that inadequate awareness and health education activities were one of the challenges in their health centres. The respondents maintained that even though awareness creation and education programmes were given in the health centres, the programmes were irregular, inadequate and not well organised, and counselling in maternal health services was weak. According to respondents,

> The great challenge is the information gap; the awareness creation activity is not strong. (Participant 7)

> In our health centre, the main challenge in cervical cancer screening service is that there is no strong awareness creation activity. We planned activities, but they were not practically applied. (Participant 5)

> In our health centre, the main challenge concerning cervical cancer screening service is there are no strong awareness creation activities. (Participant 4)

> The awareness creation activity is not well organised, and is not as strong as expected. In general, it is not given attention; it did not take as daily activities or responsibility of every health personnel member. (Participant 17)

#### *5.4.8.2 Sub-theme 8.2: Shortage of trained health professionals*

A shortage of trained health professionals was another challenge. Most of the respondents pointed out that there was a lack of health professionals who took the cervical cancer screening training. According to respondents,

> There is no adequately trained health professional in our health centre. (Participant 15)

> Inadequately trained health workers are another challenge. (Participant 4)

> There is no adequate training opportunity given for health professionals. Many more, providers should be trained. (Participant 10)

In 2017, Tamirat, Getachew and Tesfaye (2017:100) found that a shortage of trained health professionals contributed to poor cervical cancer screening service provision, due to lack of knowledge, skills and training opportunities for staff.

#### *5.4.8.3 Sub-theme 8.3: Lack of responsible person assigned to the service*

The respondents stated that the lack of a responsible person assigned to the cervical cancer screening unit was another challenge. According to respondents,

> To me, the main challenge concerning cervical cancer screening service in our health centre is there is no responsible person or professional assigned for the service. I am a family planning service provider and also pre-cancer service provider. The majority of the health workers took the training in this health centre, but there is no responsible assigned person on screening service. (Participant 1)

> The main challenge concerning cervical cancer screening service is that there is no responsible person or professional assigned for the service. In our health centre, there are about 3 health professionals who took VIA training but they

were not assigned permanently there. If there is no responsible person on the screening room permanently, the service provision will be poor. (Participant 3)

#### *5.4.8.4 Sub-theme 8.4: Health professionals' lack of commitment*

The respondents indicated that some health professionals' lack of commitment was one of the challenges to the cervical cancer screening service. According to respondents,

> The health providers' low commitment is seen in the awareness creation activities. (Participant 8)

> I observed low commitment of some of the staff; the health workers did not pay attention, and there are low trained persons. (Participant 16)

### 5.4.9 Theme 9: Suggestions to address the challenges

Theme 9 was the respondents' suggestions to address the challenges to the cervical cancer screening services. The sub-themes were assignment of responsible health care professional and supplies; appropriate work plan and data management; strengthening awareness and education programmes and activities, and capacitating the health care professionals.

#### *5.4.9.1 Sub-theme 9.1: Assignment of responsible health care professional and supplies*

The respondents indicated the need for the assignment of a cervical cancer screening professional and the necessary supplies. Most of the respondents emphasised that the responsible health professional should be available at all times in order to provide the service properly. They also stressed the importance of adequate supplies. According to respondents,

> There should be a responsible health professional assigned to the pre-cancer screening unit. This person should be available at all times, responsible for preparing the necessary equipment for the procedure, and have an appropriate plan and report. (Participant 1)

> Sometimes the room used to be closed. The room should never be closed; a responsible person should be assigned for this, and the number of trained health workers needs to be increased. (Participant 9)

> This person will plan and also be responsible to carry out the plan. (Participant 1)

> There should be responsible health professionals assigned to the service. (Participant 3)

Tamirat et al (2017:100) found that a shortage of trained health professionals contributed to poor provision of cervical cancer screening service, due to lack of knowledge, skills and training opportunities for staff. In Malawi, Munthali et al (2015:505) found that the limited number of members of staff involved in the delivery of cervical cancer screening and early treatment services was a serious barrier to screening uptake.

#### *5.4.9.2 Sub-theme 9.2: Appropriate work plan and data management*

The respondents indicated the need for an appropriate work plan and data management to address the challenges. Some respondents stressed the necessity of an appropriate plan to equip and enable the health professionals responsible to organise and ensure effective service and performance. According to respondents,

> There must be standard plan and periodic performance report and evaluation. The service also should be strength with equipment, manpower and supply. (Participant 7)

> There is should be appropriate plan, there should be monitoring and evaluation system and data management. (Participant 2)

#### *5.4.9.3 Sub-theme 9.3: Strengthening awareness and education activity*

The respondents stated that awareness and education programmes and activities should be strengthened to promote and improve cervical cancer screening service. The respondents expressed a need for well organised health education programmes, good

counselling, monitoring and follow-up to strengthen the service. According to respondents,

> I think it needs to work aggressively; attention should be given to the awareness creation strategy, because most of the women's awareness is low. (Participant 1)

> We need commitment and well-organised awareness creation activities. All health workers must be trained, so that appropriate counselling can be done in all units. (Participant 4)

> Continuous and strong awareness creation should be done, and appropriate follow up of health extension workers is necessary. (Participant 6)

> We need strong awareness creation activities and good counselling service. (Participant 14)

> Commitment is important to apply the awareness creation strategy. Strong counselling is important at all units in the health centre. (Participant 18)

> Having regular health education programmes, assigning responsible persons, and proper counselling of women in all units can reduce the challenges. (Participant 17)

#### *5.4.9.4 Sub-theme 9.4: Capacitating the health professionals*

The respondents stressed the shortage of trained health service providers in cervical cancer screening service provision. The respondents suggested increasing training opportunities to as many health professionals and as regularly as possible to tackle the challenges. According to respondents,

> Giving training for all health care workers is important because if the one who trained is not available, it will be easy to assign another one, so the room will always be open for the service. (Participant 15)

> Additional training should also be given for all health workers. This will help to strength the awareness activities. (Participant 3)

> All health workers must be trained, so that appropriate counselling is done in all units. (Participant 5)

> Staff should be added; much more staff should be trained so that everybody can be assigned to give the service. (Participant 3)

### 5.4.10 Theme 10: Suggestions to increase cervical cancer screening uptake

Theme 10 was suggestions to increase cervical cancer screening uptake. The sub-themes were enhancing community awareness; strengthening of cervical cancer screening service, and prompt action research to investigate existing problems.

#### *5.4.10.1 Sub-theme 10.1: Enhancing community awareness*

The respondents emphasised the need to increase and enhance community awareness by means of media awareness creation programmes, school health education programmes, and health extension workers' (HEWs) house-to-house visitation. According to respondents,

> Awareness creation programmes in the media to all people, School health education programmes in schools, health extension workers' house-to-house visiting and education should be expanded. Awareness raising programmes should be provided by different methods. (Participant 17)

> Awareness creation should be done in the media, like TV and radio. (Participant 18)

> Strengthening of community awareness is very important. This should include both the male and female population; husbands also need to understand about the service. This should be done through the health extension workers or using mass media. In addition, strengthening of collaboration with agents is important for certain periods in order to sustain the service. (Participant 14)

> Activities should be done in the community to increase awareness, like TB and HIV. As we know, in the HIV epidemic everybody was shouting and working with great effort. Just like that, everybody should shout. (Participant 7)

> Awareness creation strategy is necessary at all level; MOH should have responsibility because most of the women awareness is low, even in mass media awareness creation for the whole population should be consistently given. (Participant 3)

> I recommend strengthening of community awareness, collaboration with agents, working with health extension workers, practising community awareness through community leaders and religious leaders. (Participant 11)

> The MOH level needs to work hard, using mass media. Attention should be given to awareness creation strategies because most of the women's awareness is low. Increasing the commitment of the health service workers through training and incentives is also necessary. (Participant 5)

#### *5.4.10.2 Sub-theme 10.2: Strengthening of cervical cancer screening service*

The respondents recommended strengthening the available cervical cancer screening service. The health centres' provision service should be supported, monitored, and supervised by responsible agents like the MOH and NGOs in order to strengthen the service. According to respondents,

> Responsible agents should be available at national level. The MOH should assign a task force group for this case, because in our country it is known that the number of women affected by the disease is a great problem. (Participant 18)

> The Ministry of Health should give attention to the problem and supervision is also important from health management offices. In general, attention should be given to community awareness creation programme. (Participant 9)

> Attention should be given at all levels. The MOH, funding agents and NGOs should support the service. Research groups should identify and investigate the actual problem and action taken on the findings. (Participant 16)

> The regular health education programmes of health centres or all health facilities need attention and work to increase awareness. Collaboration with agents is necessary in order to get support for the health centres with equipment and material. There must be a standard plan and periodic performance reports and

> evaluations. The service should also be strengthened with equipment, manpower and supplies. (Participant 7)
>
> Strengthening of collaboration with agents is important for certain periods in order to sustain the service. (Participant 14)
>
> I think it needs to work aggressively. Attention should be given to awareness creation strategies because most of the women's awareness is low. Well trained health professionals should be assigned. Even in the media, awareness creation for the whole population should be given consistently. (Participant 1)

#### *5.4.10.3 Sub-theme 10.3: Prompt action research to investigate the existing problem*

The respondents maintained that prompt action was needed to investigate the existing problem to improve cervical cancer screening uptake. Further research was also urgently needed. According to respondents,

> I think researching the existing problem would help to identify the problem. This will help to focus on the area which needs intervention. (Participant 6)
>
> I recommend that the MOH and universities should encourage research in this area. This will help to identify what the existing problem is in the community and interventions based on the findings. (Participant 8)

The respondents stated that identifying existing problems through investigation and action research was essential to improve cervical cancer screening uptake. In addition, research would help to focus on areas that need intervention.

Young (2015:91) maintains that research needs to be an essential part of any healthcare setting. Research relies on scientific and academic innovation. By posing new ideas and suggesting alternative answers to medical and social questions, we aim to have evidence-based care and practice at the forefront of health care delivery (Young 2015:91).

## 5.5 INTEGRATION OF QUANTITATIVE AND QUALITATIVE FINDINGS

Integration is an intentional process by which the researcher brings quantitative and qualitative approaches together in a study. Quantitative and qualitative data then become interdependent in addressing common research questions and hypotheses (Guetterman, Fetters & Creswell 2015:2).

In this study quantitative data was collected from clients attending maternal health services and qualitative data from health care providers (Creswell & Creswell 2018:44). The researcher used a convergent mixed methods approach to collect quantitative and qualitative data. The researcher incorporated both sets of data into the interpretation of the overall results. The quantitative data was statistically analysed to establish clear predictors, and then triangulated with the qualitative data to be used in the development of the guidelines. The researcher then developed the guidelines to improve utilisation of cervical cancer screening based on the quantitative and qualitative findings.

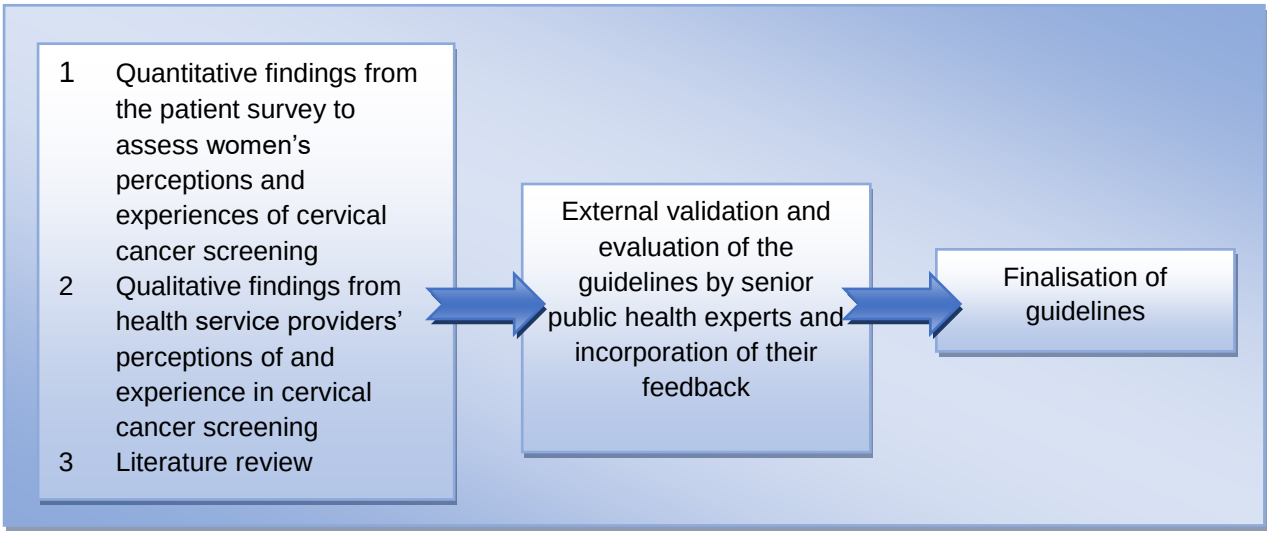


**Figure 5.1 Process of the guidelines development**

The researcher developed the guidelines in three stages as illustrated in Figure 5.1.

## 5.6 SUMMARY

This chapter discussed the qualitative data analysis and discussion. The qualitative data was collected from health service providers at the participating health centres.

Most of the views and experiences of health care provides were identified by different study conducted in the country and abroad. This exploration and description of the views and experiences of health care workers on cervical cancer screening services utilisation brought wide range of issues such as knowledge of the women, perception of the women about cervical cancer screening services, factors associated with cervical cancer screening service utilisation and challenges.

This study has of a particular use to incorporate the views and experiences of women and health care workers to be develop a guideline. The next Chapter 6 presents the guidelines which were developed based on the quantitative and qualitative findings and the literature reviewed.

# CHAPTER 6

# GUIDELINES TO IMPROVE UTILISATION OF CERVICAL CANCER SCREENING

## 6.1 INTRODUCTION

Guidelines are recommendations intended to assist providers and recipients of health care and other stakeholders to make informed decisions (WHO 2012:1).

The purpose of the study was to develop guidelines to improve the utilisation of cervical cancer screening by women in Ethiopia. In order to do so, the aim was to determine the factors that affected the uptake of cervical cancer screening among women in Addis Ababa, including socio-demographic and socio-economic circumstances, and perceptions that facilitated or prevented screening.

The guidelines were based on the findings of the study and the literature review. The draft guidelines were reviewed by the study supervisor and senior public and maternal health experts to ensure feasibility and applicability. The researcher incorporated the experts' feedback and finalised the development of the guidelines. The guidelines should assist policies, strategies and operating procedures for improved and effective cervical cancer prevention and screening service delivery.

## 6.2 GUIDELINE DEVELOPMENT: PASE 2

## 6.3 SCOPE OF THE GUIDELINES

The guidelines should assist policy makers, health services planners and health programme managers to plan and implement cervical cancer screening services at different levels of the health system. The guidelines are intended to improve utilisation and quality of cervical cancer screening services provided at health facility levels.

## 6.4 PURPOSE OF THE GUIDELINES

The purpose of the guidelines is to provide evidence-based guidance to policy makers, health care managers, and health service professionals to improve the utilisation and quality of cervical cancer screening services. The use of these guidelines would help, facilitate and promote planning, implementation and monitoring cervical cancer screening services.

### 6.4.1 Objective

- Develop guidelines to improve the utilisation of cervical cancer screening by women in Ethiopia based on the finding from quantitative and qualitative data.

### 6.4.2 Research question

- What guidelines can be developed for health professionals, planners and policymakers to promote utilisation of cervical cancer screening services among women in Ethiopia?

## 6.5 BASIS FOR THE DEVELOPMENT OF THE GUIDLINES

The study found that the main determinants of cervical cancer screening practice were women's socio-demographic characteristics; reproductive health characterstics; knowledge of cervical cancer; perceptions of susceptibility, seriousness, benefits of and barriers to screening, and source of information, especially health service providers. This was done used quantitative approach of data collection. Moreover, the health professionals, on qualitative part of study identified several challenges in cervical cancer screening service provision in their health centres. The guidelines were based on the findings of the current study, relevant aspects of reviewed literature, the theoretical framework of the study and the researcher's insights; the adapted health belief model was used to categories the findings of the study. These guidelines are intended to promote and facilitate cervical cancer screening services utilisation.

**Table 6.1 Findings used from quantitative and qualitative data for development of the guidelines**

| Qualitative findings | Quantitative findings |
|---|---|
| • There was a shortage of trained health service providers.<br>• No responsible health service provider was permanently assigned to cervical cancer screening provision.<br>• Regular awareness and education activities were not strong.<br>• There were inadequate campaign sessions to increase community knowledge.<br>• There were weak or no community awareness sessions.<br>• There was little or no use of health extension workers (HEWs) in house-to-house health education practice.<br>• Inadequately trained health professionals on cervical cancer screening.<br>• Health service providers' lack of commitment was evident in poor awareness creation and counselling activities.<br>• Health professionals did not provide health education<br>• There were few training and capacity building opportunities for health professionals.<br>• Many women did not have information on cervical cancer causes, risk factors, transmission and prevention.<br>• Not screened women had little or no knowledge of the advantage of cervical cancer screening.<br>• Most women had little or no perception of the advantage/benefit of cervical cancer screening.<br>• Women did not perceive the disease as serious and that they were at risk.<br>• Educated women were aware and came for screening.<br>• Many women needed permission from their husbands or families for screening.<br>• The health centres had no proper work plan, data management and reports.<br>• There was no regular supervision from the responsible body (MOH). | • The screened women were mainly in the age group of 25-44 years old.<br>• The majority of the not screened women indicated that they did not know the causes of cervical cancer.<br>• Most of the not screened women did not know where to get tested for cervical cancer.<br>• Most of the not screened women did not know any methods of cervical cancer prevention.<br>• Many of the not screened women did not know the transmission ways of HPV.<br>• Several of the not screened women did not know about the treatment for cervical cancer.<br>• Many of the not screened women did not know how often cervical cancer screening should be done.<br>• Many of the not screened women did not know that smoking cigarettes was a risk for cervical cancer.<br>• Most of the not screened women stated that they were not aware of any test for cervical cancer screening.<br>• Regular cervical cancer screening decreases the risk of cancer.<br>• Knowledge about cervical cancer, and women's perception of susceptibility, seriousness, benefits and barriers, and information from health providers were the strongest determinants of cervical cancer screening practice. |
| • Enhancing community awareness is recommended.<br>• Strengthening of cervical cancer screening service with human resources (staff), supplies and management.<br>• Prompt action research is necessary to investigate the existing problem.<br>• Attention from MOH, collaboration between the MOH and NGOs, and community leaders' involvement are needed. | • Most of women (64.3%) indicated that best method of providing information about cervical cancer and screening were found to be health service providers. |

Table 6.2 shows summary findings from quantitative and qualitative data used for development of the guidelines.

## 6.6 VALIDATION AND EVALUATION OF THE GUIDELINES: PHASE 3

### 6.6.1 Purpose

The purpose of the validation and evaluation of the guidlenes is to authenticate the guidelines was to confirm that the guidelines were of a good, acceptable and attainable nature.

### 6.6.2 Evaluation tool

Criteria for evaluation of the interim Guidelines was distributed to experts to evaluate the draft guidelines. A criterion is a standard or principle used in evaluation as the basis for evaluative judgement. Accordingly, criteria consist of Clarity and presentation, Specificity, Reliability, Effectiveness, Validity, Achievability, Relevance and Applicability (OECD 2021:36)

A Likert scale is used, which had four choices for evaluation, beginning with a strongly disagree, disagree, agree, and strongly agree. The evaluators were asked to use the key to assess and determine for each strategy met the criteria that have been adopted to achieve each strategy. When required, assessors were asked to provide their opinions on each strategy in a written comment and feedback. Scale key: 1: strong disagreement; 2: disagreement; 3: agreement; 4: strong agreement.

### 6.6.3 Experts

A group of experts in public health, midwifery, maternal and reproductive health and social psychology and in different positions were participated.

### 6.6.4 Outcome of the validation and evaluation

The evaluators commented that it is better to clear out a work description monitoring and evaluation mechanism for health workers. They also give more emphasis to the rule and regulation if someone does not adhere to the code of ethics and punishment mechanism should be stated. In addition, they recommended developing teamwork and creating sense of ownership.

Therefore, recommendation forwared were included in the final guidelines

## 6.7 FINALISATION OF THE GUIDELINES

The following guidelines are intended to facilitate and promote cervical cancer screening utilisation.

**Guideline 1: Prioritise cervical cancer screening services during performance review meetings**

Performance review meetings are meant to improve health services or centres' performance in key areas, identify challenges and problems, seek solutions to the identified problems, and develop action plans that will be implemented after the review meeting. Performance review meetings should focus on health services that are lagging behind or need special attention. The following interventions are proposed to prioritise cervical cancer screening service during performance review meetings:

- Make all health facilities present their cervical cancer service performance records.
- Make cervical cancer-related activities one of the staff appraisal indicators.
- Discuss how to increase the utilisation of cervical cancer screening services.
- Discuss problems and challenges in cervical cancer screening service.
- Present best experiences among the meeting participants or best practices from other areas.
- Set targets that can be achieved by facilities and evaluated during the next review meeting.
- Develop action plans indicating where and when the programmes will be presented, who will do the activities, and the resources required and their sources.

**Guideline 2: Strengthen cervical cancer screening services**

In order to provide appropriate cervical cancer screening service, the service should be available and accessible to users. This study identified a need of improvement of the available cervical cancer service. The following interventions are proposed to improve overall cervical cancer screening service:

- Ensure the availability of supplies, materials and technical support for cervical cancer screening programmes.
- Address the shortage of staff in the health centres.
- Maintain regular monitoring and supervision of cervical cancer screening service activities.
- Ensure short-term training of health service workers in cervical cancer screening.
- Increase the number and accessibility of cervical cancer screening centres.

**Guideline 3: Provide health education and counselling services to women in all health delivery pointes**

Health education and counselling should be provided to women at all maternal health services, namely ANC, delivery, PNC, family planning, and immunisation; and other health delivery points that women can acess. The information should include the causes, transmission, prevention, and risk factors of cervical cancer, and the advantage of screening for cervical cancer. Health service providers need to effectively inform women about the availability of cervical cancer screening service.

The following interventions are proposed to improve counselling and health education services provided to the women duringin all health seeking points:

- Provide information on the availability of cervical cancer screening.
- Provide information on causes of cervical cancer, transmission, prevention, risk factors and advantage of screening for cervical cancer.
- Offer capacity building training to health care workers to provide comprehensive counselling and health education services to women visiting maternal health services.

- Develop and use checklists to be used as reminders of what information should be communicated.
- Ask the women about their concerns and respond appropriately.
- Consider especial attention to women attending any maternal health services.

**Guideline 4: Strengthen regular health education programmes; incorporate cervical cancer screening as a main health education topic in the health sectors**

The study found that incorporating information about cervical cancer in regular health education programmes and activities at health centres increased cervical cancer screening. The following interventions are proposed to improve the overall counselling and health education services:

- Incorporate topics on cervical cancer-related information in regular health education programmes.
- Provide information on the availability of cervical cancer screening.
- Provide information on causes, transmission, prevention and risk factors of cervical cancer, and the advantage of screening for cervical cancer.
- Offer counselling and health education services to women visiting all health delivery services.
- Integrate cervical cancer services with other health care services.

**Guideline 5: Strengthen and support the health extension programme**

The Community Health Extension Programme, 2003-2018 allowed Ethiopia to achieve significant improvements in maternal and child health, communicable diseases, hygiene and sanitation, knowledge and health care seeking. In some cases, women can utilise cervical cancer services through referral of health extension workers (Assefa, Gelaw, Hill, Taye & Van Damme 2019:24).

Health extension workers (HEWs) assigned to kebeles around the health centres should increase house-to-house visitation and include education on cervical cancer screening service. Health extension workers are important in cervical cancer awareness creation

in the community. The following interventions are proposed to strengthen the health extension programme:

- Arrange technical support for health extension workers to integrate cervical cancer screening education and counselling.
- Develop a home visit observation checklist at household level which includes offering cervical cancer screening education.
- Offer capacity building training to health extension workers to provide counselling and health education services to women in the community.
- Develop and implement a monitoring system for health extension workers' activities to ensure regular performance related to cervical cancer screening counselling.
- Make random checks on households to monitor health extension workers' house-to-house visitation.
- Strengthen communication with the local community to assist health extension workers to remain at their duty in education about cervical cancer screening.
- Motivate health extension workers to bring women to the health centres for cervical cancer screening.
- Provide ICT materials to capacitate their information.

**Guideline 6: Address Health care workers' capacity building**

Health care providers were a main source of information for women. The capacity of health care providers should be strengthened in order to improve women's and the community's perceptions and acceptance of cervical cancer screening. The following interventions are proposed to increase health care providers' capacity:

- All health care professionals and health service managers should receive short-term training in cervical cancer screening services.
- Mentoring and supportive supervision should be provided in cervical cancer screening programmes to strengthen service provision.
- Trained health service professionals should be assigned to cervical cancer screening practice.
- Refresher courses should be provided regularly to increase health professionals' commitment.

- Offer available materials and manuals to health service workers.
- Provide ICT materials to capacitate their information.
- Consider insentives amd motivation means for those with better performance on cervical cancer screening service providers.
- Develop teamwork and create sense of ownership.

**Guideline 7: Strengthen community level interventions**

Community mobilisation is a process of involving communities to produce support for essential health services, like cervical cancer prevention, and control activities (WHO 2014a:88). The following interventions are proposed to strengthen community level interventions:

- Improve community mobilisation to promote responsiveness to cervical cancer and cervical cancer screening, using health extension workers.
- Encourage the community to maintain support for women on cervical cancer screening.
- Organise community awareness campaigns and education programmes.
- Involve community volunteers to demonstrate successful education programmes in the community.
- Conduct community-based health education using health extension workers to improve community awareness and knowledge of cervical cancer screening services.
- Conduct regular supportive supervision and meetings to strengthen communication with local government authorities.
- Strengthen communication and work with donors and NGO partners working in the community.

**Gudeline 8: Strength awareness and education programmes**

There was a lack of knowledge and awareness of the importance of cervical cancer screening services. In Hamadan, Iran, education and awareness raising programmes increased cervical cancer screening behaviour among women (Shojaeizadeh, Hashemi,

Moeini & Poorolajal 2011:22). The following interventions are proposed for conducting education and awareness raising programmes:

- Conduct community-based health education, using health extension workers to improve community awareness and knowledge of cervical cancer screening services.
- Consider health facility-based morning health education, targeting cervical cancer screening services.
- Utilise mass media to disseminate information on cervical cancer screening services.
- Utilise available behavioural change communication tools to increase community knowledge and awareness of cervical cancer screening services.
- Develop and utilise health message targeting the cultural and traditional practices being conducted in the community.
- Prepare and use IEC materials on cervical cancer screening using the local language.
- Engage partners, neighbours, religious leaders, community leaders and significant others to improve knowledge and perceptions of cervical cancer.
- Organise population-based screening programmes to allow for a standardised approach to screening, follow-up, and treatment.
- Conduct an advocacy campaign through mass media.

**Guideline 9: Develop a system to cervical cancer screening data management**

Cervical cancer services mostly rely entirely on existing national or organizational health information (HIS) structures to meet their data needs. When systems are unable to provide the basic information required controlling patients and coordinating the delivery of services, several programs develop ad hoc systems. Cervical cancer screening activities data are often uncoordinated and lack of standardisation, resulting in inconsistent data quality and availability and restricting the use of data for decision-making and program planning. In order to ensure data quality, data generated by health services must be based on standard procedures and protocols which do not vary between levels of the health system, irrespective of user or of frequency of data

collection period. Data are reliable when they are measured and collected consistently (Drummond, Were, Arrossi and Wools-Kaloustian2017:34).

The following interventions are proposed for improving cervical cancer screening related data:

- Introduce an electronic-based cervical cancer screening report system.
- Conduct data quality assessment on a regular basis.
- Conduct integrated supportive supervision to improve the data recording and reporting.
- Provide regular feedback on data quality and recording and reporting procedure to lower levels.

**Guidliene 10: Address compassionate, respectful and caring services**

Compassionate care involves showing respect and understanding emotions and feelings; feeling of deep sympathy and sorrow for the suffering of others accompanied by a strong desire to alleviate the suffering. (FMOH 2018:2). Respectful healthcare increases patient satisfaction and affects community health-seeking behaviour. The following interventions are proposed to promote cervical cancer screening services provision in a caring, respectful and compassionate environment:

- Foster leadership ownership and engagement at all levels of the system.
- Provide on-going, continuous professional ethical training.
- Listen to patients' feedback attentively.
- Respond to patients politely.
- Clarify any misunderstandings.
- Offer help whenever a patient asks for support.
- Encourage and foster health service providers' self-commitment to provide available cervical cancer screening service.
- Conduct annual health professional recognition events.
- Develop and introduce a framework to reinforce professional code of ethics including regulation of patients' rights and responsibilities (PRR).

## 6.8 SUMMARY

In this chapter a preliminary guidline for each of the recognised cervical cancer related issues was developed. Afterwards, ten strategies were developed, which were validated by expertise and the final gudelines establish the monitoring and assessment system for cervical cancer screening services. The guidelines can be used by health professionals, policy makers, health service managers and researchers to improve cervical cancer screening service delivery and uptake.

Chapter 7 briefly summarises the findings and limitations of the study and makes recommendations for practice and further research.

# CHAPTER 7

# SUMMARY, LIMITATIONS, AND RECOMMENDATIONS

## 7.1 INTRODUCTION

This chapter summarises the study, discusses the limitations and contribution of the study, and makes recommendations for practice and further research.

## 7.2 SUMMARY OF THE STUDY

In Ethiopia, cervical cancer is the second leading cancer among women. Most people with cervical cancer in developing countries, including Ethiopia, present late with advanced stage, at which time management treatment may involve multiple modalities, such as surgery, radiotherapy, and chemotherapy, which would lessen the chances of success. Early detection of cervical cancer can easily be made by an examination of swabs or smears from the cervix surface, which could be done at a gynaecological examination. If identified early, treatment and management of cervical cancer is simple, uncomplicated and effective. The national coverage of screening for the country was about 0.6% in the 18 to 69-year-old age group (Human Papilloma Virus [HPV] Centre 2010:1). Guidline interventions are needed to increase the number of women who attend cervical cancer screening services.

- **Purpose of the study**

The purpose of the study was to investigate factors that affected cervical cancer screening among women in Addis Ababa, Ethiopia and develop guidelines to assist in promoting women's screening practice for cervical cancer screening.

- **Objectives of the study**

To achieve the purpose, the objectives of the study were:

Phase 1: Quantitative approach

- Identify and discuss the determining factors of screening practice for cervical cancer among women in Addis Ababa, Ethiopia.

Phase 2: Qualitative approach

- Explore and describe health professionals' perceptions of cervical cancer screening utilisation among eligible women in Addis Ababa, Ethiopia.

Phase 3: Based on the finding

- Develop guidelines to improve the utilisation of cervical cancer screening by women in Ethiopia based on the finding.

The researcher conducted a literature review to be familarise with existing research on the topic, contextualise the study, and answer the research questions. The study was based on the conceptual framework of the Health Belief Model (HBM). The HBM is based on people's beliefs about whether or not they are susceptible to a disease or condition and how their perceptions of the benefits of trying to avoid it influence their readiness to act (National Cancer Institute (NCI) 2005:13). Health behaviour is based on perceived threat of disease (Rosenstock et al 1988:177). The HBM is a psychological health behaviour model generated to explain and anticipate health-related behaviours, and helps clarify why individuals may accept or reject preventive health services or adopt healthy behaviours (Day et al 2010b:4).

A research design is the overall plan for addressing a research question, including the specifications for enhancing the integrity of the study (Polit & Beck 2014:741). The researcher selected a mixed methods research design for the study in order to collect quantitative and qualitative data (Creswell 2013:32). At the time of the study, 14 public health centres in Addis Ababa were providing cervical cancer screening free of charge. The study was conducted at six (6) selected public health centres that had started cervical cancer screening two years prior to data collection.

The study collected quantitative data from women attending maternal health care and qualitative data from health care providers. Quantitative data was obtained from 233 screened and 376 not screened respondents to identify determinants of cervical screening practice. Qualitative data provides culturally specific information about the

values, opinions, behaviours, and social contexts of particular populations (Moriarty 2011:2; Creswell 2013:42). Qualitative data was obtained from 18 selected health professionals (nurses, midwives, health officers) at the selected health centres by means of key informant interviews (Mack et al 2011:3). The purpose of the interviews was to obtain the respondents' perceptions of women's uptake of cervical cancer screening. The quantitative data analysed using the Statistical Package for Social Sciences (SPSS) Version 23. The researcher analysed the qualitative data by reading, categorising, and tabulating the transcribed interviews. Finally, based on the quantitative and qualitative findings and the literature reviewed, the researcher developed guidelines which could used to improve cervical cancer screening in Ethiopia.

## 7.3 LIMITATIONS OF THE STUDY

The limitations of a study refer to restrictions or problems in a study that may decrease the generalisability of the finding (Polit & Beck 2008:539). The study was restricted to six (6) selected public health centres that had started cervical cancer screening two years prior to data collection therefore the findings cannot be generalised to other health centres or the whole country.

## 7.4 CONTRIBUTION OF THE STUDY

The study findings provide information on women's knowledge and practices that affect utilisation of cervical cancer screening in order to detect the presence of disease at an early stage which was investigated using quantitative approach. The participant health care providers' experience and perceptions of cervical cancer screening utilisation identified using qualitative approach. The convergent parallel mixed method design involved through quantitative and qualitative data collection and analysis at similar times, followed by an integrated analysis. The researcher incorporated both sets of data into the interpretation of the overall results. The quantitative data was statistically analysed to establish clear predictors, and then triangulated with the qualitative data to be used in the development of the guidelines.

The researcher then prepared guidelines which were validated by expertise and the final guidelines establish the monitoring and assessment system for cervical cancer

screening services. This study has therefore contributed immensely to the body of knowledge in cervical cancer screening utilisation in Addis Ababa, Ethiopia. The guidelines produced in this study are potentially can improve the quality and utilisation of cervical cancer screening services as well as help with screening and behavioural modification programs. Health professionals, planners, policy makers and cancer society association will be able to use the findings of the study to encourage women in Ethiopia to use cervical cancer screening services.

## 7.5 RECOMMENDATIONS

On the basis of the study outcome, the researcher forwards the following recommendations for practice and further study.

### 7.5.1 Recommendation to Ministry of Health

The Ministry of Health and should:

- Organise awareness campaigns and education programmes to inform the community and patients about cervical cancer, emphasising signs and symptoms, ways of transmission, risk factors, and prevention by means of screening.
- Organise population-based screening programmes to allow for a standardised approach to screening, follow-up, and treatment.
- Promote community mobilisation by means of health extension workers to promote responsiveness to cervical cancer and cervical cancer examination.
- Regulate the integration of the cervical cancer screening programme with primary health care (PHC) service programmes.
- Increase the availability of heath care providers in cervical cancer service.
- Make provision for and introduce strong performance evaluation, data management, monitoring, and supervision systems in health facilities.
- Expand the availability and accessibility of cervical cancer screening service facilities.
- Arrange seminars, workshops and ongoing on-the-job training for health service providers.

### 7.5.2 Recommendation to health care providers

Health care providers (phsiciance, health officers, nurses, midwives) should:

- Keep up to date on the available cervical cancer screening services through attending seminars and workshops.
- Take on responsibility to provide the available cervical cancer screening service with dedication.
- Promote and present health education programmes on cervical cancer screening in their health centres.

### 7.5.3 Recommendation on further research

Further studies should be conducted on the following topics:

- Observational study to assess the actual interaction between the service providers and the women.
- How information cervical cancer screening is disseminated to women.
- Partners' perceptions on cervical cancer screening.
- Motivating and demotivating factors of health care workers working in the health centres need to be studied.
- The health care workers approach and conduct in delivering the cervical cancer screening services need to be investigated.
- It is also good for other studies measure the effects implementing the recommendations made under this study on cervical cancer screening services.

## 7.6 CONCLUSION

This chapter summarise of findings, conclusions, recommendations, contribution of the study, and its limitations. In this study as participants from health centres reported, there are some challenges on the implementation of cervical cancer service in the health centres, recommendations forwarded for responsible bodies.

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# ANNEXURES

**Annexure A: Clearance certificate from the University of South Africa Health Studies Higher Degrees Committee**

UNISA university of south africa

**RESEARCH ETHICS COMMITTEE: DEPARTMENT OF HEALTH STUDIES**
**REC-012714-039 (NHERC)**

15 February 2017

**HSHDC/622/2017**
Mrs ST Ayka
Student: 5856-285-0

Supervisor: Prof BL Dolamo
Qualification: D Cur
Joint Supervisor: -

Dear Mrs ST Ayka

**Decision: Ethics Approval**

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**Name:** Mrs ST Ayka

**Proposal:** Determinants of screening practice for cervical cancer among women in Addis Ababa, Ethiopia.

**Qualification:** DPCHS04

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Thank you for the application for research ethics approval from the Research Ethics Committee: Department of Health Studies, for the above mentioned research. Final approval is granted for the duration of the research period as indicated in your application.

*The application was reviewed in compliance with the Unisa Policy on Research Ethics by the Research Ethics Committee: Department of Health Studies on 15 February 2017.*

*The proposed research may now commence with the proviso that:*

1) *The researcher/s will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.*

2) *Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the Research Ethics Review Committee, Department of Health Studies. An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants.*

Open Rubric

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3) *The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study.*

4) *[Stipulate any reporting requirements if applicable].*

*Note:*
*The reference numbers [top middle and right corner of this communiqué] should be clearly indicated on all forms of communication [e.g. Webmail, E-mail messages, letters] with the intended research participants, as well as with the Research Ethics Committee: Department of Health Studies.*

Kind regards,

Prof L Roets
CHAIRPERSON
roetsl@unisa.ac.za

Prof MM Moleki
ACADEMIC CHAIRPERSON
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## Annexure B: Letter of approval from Government of Addis Ababa Health Bureau

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City Government of Addis Ababa Health Bureau

Ref. No AA/HBTC30/227
Date 22/01/2010

- **Arada health center**
- **Semen health center**
- **Woreda 1 health center (Yeka)**
- **Kotebe health center**
- **Woreda 9 health center(Kolfe)**
- **Kolfe health center**

**Addis Ababa**

**Subject: Request to access Health Facilities to conduct approved research**

This letter is to support **Seble Tiku Ayka** to conduct research, which is entitled as **"Determinants of screening practice for cervical cancer among women in Addis Ababa, Ethiopia."** the study proposal was reviewed and approved by Addis Ababa health bureau ERC, and the investigator is informed with a copy of this letter to report any changes in the study procedures and to submit progressive report once in six months, apply for renewal 30 days prior to the expiry date, and submit technical report within three months of study completion.

Therefore we request the mentioned facilities and staffs to provide support to the investigator.

With Regards

Kassayenew Amare
E R C

Cc :

- **Seble Tiku Ayka**
- **Ethical Clearance Committee**
  **Addis Ababa**

**Annexure C: Questionnaire English version**

## Questionnaire for the determinants factors of cervical cancer screening among women in Addis Ababa

The aim of this study is to assess the determinants factors of cervical cancer screening in Addis Ababa.

**01. Site ----------**

**Introduction**

The interview should be conducted after an individual informed the aim of the interview get consent /agreement to be interview.

My name is …… I work for a research team from UNISA. I am going to conduct survey using questionnaire to study determinants factors for cervical cancer screening among women in Addis Ababa. To complete the questionnaire, I will ask your questions approximately lasting 30-45 minutes duration. Your responses are completely confidential, your name will not be written on the form and will never be used in connection with any of the information you provided.

I would like to thank you in advance for your help.

Are you willing to participate? Yes
No

If yes 1. Continue
If no 2. Stop

**02. Result code**

1. Complete
2. Refused
3. Partially completed
4. Other/specify: _____

**Questionnaire to assess the determinants factors of cervical cancer screening practice among women in Addis Ababa**

01. Site _____

02. Study participants

1. screened
2. not screened

03. Result code

1. Completed
2. Refused
3. Partially completed
4. Other /specify/----------

**Part I: Socio-demographic and health background information**

**101. Age _____ (in years)**

| SR No | Question | Coding category | Skip | Code |
|---|---|---|---|---|
| 102 | Ethnic group | 1. Amhara<br>2. Oromo<br>3. Tigrie<br>4. Southern nations<br>5. Other<br>Specify …… | | |
| 104 | Educational level | 1. No education<br>2. Primary<br>3. Secondary<br>4. College and above | | |
| 105 | Occupation | 1. Housewife<br>2. Government employee<br>3. Private employee<br>4. Daily labourer<br>5. Other<br>Specify …… | | |
| 106 | Family income per month | 1. <400 birr<br>2. 400-999 birr<br>3. 1000 & above<br>4. Not known | | |

| SR No | Question | Coding category | Skip | Code |
|---|---|---|---|---|
| 107 | Current marital status | 1. Unmarried<br>2. Married<br>3. Divorced/separated<br>4. Widowed | | |
| 108 | Have you been using birth control contraceptives | 1. Yes<br>2. No<br>3. No response | | |
| 109 | Which type of contraceptives ever used (more than one answer can be given) | 1. Oral contraceptives<br>2. Injectable<br>3. Implant<br>4. IUCD<br>5. Other specify ……<br>6. No response | | |
| 110 | Number of children you have | 1. None<br>2. One<br>3. Two to Four<br>4. Five and above<br>5. No response | | |
| 111 | What was your first age of menarche | 1. Less than 14 years<br>2. 14 years to 15 years<br>3. Above 15 years<br>4. No response | | |
| 112 | What was the age of first sexual intercourse | 1. Less than 15 years<br>2. 15-18 years<br>3. 18 years above<br>4. No response | | |
| 113 | What was your age of first pregnancy | 1. Less than 15 years<br>2. 15-18 years<br>3. Above 18 years<br>4. No response | | |
| 114 | Did you have repeated miscarriage | 1. Yes<br>2. No<br>3. No response | | |
| 115 | Do you have more than one sexual partner | 1. Yes<br>2. No<br>3. No response | | |

**Part II-A: Awareness about cervical cancer causes, prevention and treatment of cervical cancer**

| SR No | Question | Coding category | Skip | Code |
|---|---|---|---|---|
| 201 | Have you heard of cancer of cervix | 1. Yes<br>2. No | | |
| 202 | Do you know the cause for cervical cancer | 1. Yes<br>2. No | | |
| 203 | Do you know the risk factors for cervical cancer | 1. Yes<br>2. No | | |
| 204 | Do you know any method to prevent cervical cancer | 1. Yes<br>2. No | | |
| 205 | Have you ever heard of a “cervical cancer screening” | 1. Yes<br>2. No | | |
| 207 | Is cervical cancer treatable | 1. Yes<br>2. No<br>3. I don't know | | |
| 208 | Do you know about a person with cervical cancer | 1. Yes<br>2. No | | |

**Part II-B: Knowledge about cervical cancer, symptoms, prevention, cervical screening tests; treatment options**

| SR No | Question | Coding category | Skip | Code |
|---|---|---|---|---|
| 209 | What part of the body does cervical cancer affect? | 1. Cervix<br>2. Brain<br>3. Other specify<br>4. Don’t know | | 1 |
| 210 | What are the signs and symptoms of cervical cancer? (more than one answer can be given) | 1. Pain during intercourse<br>2. Post coital bleeding<br>3. Irregular vaginal bleeding<br>4. Weight loss<br>5. Foul smelling vaginal discharge<br>6. Don’t know | | **2** |
| 211 | The virus associated with cervical cancer is transmitted by... | 1. Sexual intercourse<br>2. Maternal-fetal transmission<br>3. Blood transfusion<br>4. I do not know | | **1** |
| 212 | What does it mean by an abnormal cervical screening result? | 1. Precancerous cells<br>2. Cervical cancer<br>3. Sexually transmitted infection<br>4. I do not know | | **1** |

| SR No | Question | Coding category | Skip | Code |
|---|---|---|---|---|
| 213 | How can a person prevent getting cancer of the cervix? (more than one answer can be given) | 1. Avoid multiple sexual partners<br>2. Avoid early sexual intercourse<br>3. Quit smoking<br>4. vaccination of HPV vaccine<br>5. Regular medical checkup for screening<br>6. All of the above<br>7. Other (please explain): | | **2** |
| 214 | How often should a woman be screened for cervical cancer? | 1. Annually<br>2. Every 2-3 years<br>3. Every 5 years<br>4. I don't know | | 1 |
| 216 | What is the treatment for cervical cancer (more than one answer can be given) | 1. Radiation<br>2. Surgery<br>3. Chemotherapy<br>4. All<br>5. Others (explain)<br>6. I don't know | | 2 |
| 217 | Stage about cervical cancer cured | 1. Early<br>2. Cannot be cured<br>3. Any time<br>4. Don't know | | 1 |

**Part II-C: Please identify the following Risk factors for cervical cancer**

| SR No | Item | Yes | No | I don't know |
|---|---|---|---|---|
| 218 | Having multiple partners | | | |
| 219 | Having sex at an early age | | | |
| 220 | Smoking cigarettes | | | |
| 221 | Use of contraceptives | | | |
| 222 | Having sexually transmitted infection | | | |
| 223 | Acquiring human papillomavirus infection | | | |
| 224 | Family history of cervical cancer | | | |
| 225 | Having a weakened immune system | | | |

## Part III: Practice of cervical cancer screening

301 Have you ever had cervical cancer screening? If yes go to Q. no 302

1. Yes
2. No
3. No response

302 When was the last screening?

1. In the last one year
2. Two years ago
3. Five years ago
4. No response

## Part IV: Perception on cervical cancer and screening

### Section A: Perceived susceptibility to cervical cancer

Please respond to the following questions by ticking strongly agree (SA), agree (A), neutral (N), disagree (D), or strongly disagree (SD).

| SR No | Item | SD 1 | D 2 | N 3 | A 4 | SA 5 |
|---|---|---|---|---|---|---|
| 401 | I worry about getting cervical cancer | | | | | |
| 402 | I worry about getting human papilloma virus the virus which cause cervical cancer | | | | | |
| 403 | I believe that I am at risk of developing cervical cancer | | | | | |
| 404 | It is beyond my personal control, because all women have an equal chance of developing cervical cancer | | | | | |
| 405 | My chances of getting cervical cancer are high | | | | | |
| 406 | My chances of contracting human papilloma virus are low | | | | | |
| 407 | I have the ability to avoid cervical cancer | | | | | |
| 408 | I have the ability to avoid HPV infection | | | | | |

**Section B: Perceived seriousness of cervical cancer**

**Please state whether these statements are "true" or "false"**

| SR No | Item | True 1 | False 2 | Don't know 3 |
|---|---|---|---|---|
| 409 | I will not screen for cervical cancer because of fear of the results | | | |
| 410 | There is very little that one can do about cervical cancer | | | |
| 411 | I would rather screen for cervical cancer | | | |
| 412 | All women who develop cervical cancer must have their uteruses removed | | | |
| 413 | Early detection can increase survival chances | | | |
| 414 | Loss of cervix or uterus through surgery would affect my sexuality | | | |
| 415 | Among the diseases I can imagine getting cervical cancer is among the most serious | | | |
| 417 | Cervical cancer is a life-threatening disease | | | |
| 418 | Cervical cancer would threaten my relationship with my husband/partner | | | |
| 419 | Most women who develop cervical cancer will die from it. | | | |
| 420 | My whole life would change if I had cervical cancer | | | |

**Section C: Perceived benefits of cervical cancer screening**

**Please state whether these statements are "true" or "false"**

| SR No | Item | Yes 1 | No 2 | I don't know 3 |
|---|---|---|---|---|
| 421 | Cervical cancer can be diagnosed at an early stage | | | |
| 422 | Cervical cancer screening would save life if detected at an early stage | | | |
| 423 | Cervical cancer is often curable with early detection and proper medical treatment | | | |
| 424 | Regular cervical cancer screening decreases the risk of cancer | | | |

## Section D: Perceived barriers to cervical cancer screening

| SR No | Item | Yes 1 | No 2 | I don't know 3 |
|---|---|---|---|---|
| 425 | I don't want to be seen in a cervical cancer screening clinic by my friends or colleagues | | | |
| 426 | Cervical cancer Screening is humiliating | | | |
| 427 | I have no time for doing test | | | |
| 428 | I am not aware of any test | | | |
| 429 | Do not know where the test is done | | | |
| 430 | Don't know how much it cost | | | |
| 431 | I am still too young for the test | | | |
| 432 | My partner is uncomfortable | | | |
| 434 | I don't have risk of getting to have cervical cancer, therefore, I don't want to screen | | | |

## Section E: Cues to action

435 If you know about cervical cancer screening services, what is your source of information? (More than one can be given)

1. Tutors/school
2. Friends/neighbors/other people
3. Health care provider
4. Media

436 What do you think are the best methods for providing information about cervical cancer and screening?

1. Campaign advertisement on television
2. Campaign advertisement on radio
3. Health talks by health care providers
4. Health talks by community leaders
5. Other specify_____

**Thank you**

**Annexure D: Questionnaire Amharic version**

**የጥናት መጠይቅ**
**በአዲስ አበባ ከተማ ለሚገኙ ሴቶች የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ለማድረግ የሚወስኑ ሁኔታዎች ላይ የሚያጠና ጥናት መጠይቅ**

**01 የጥናቱ ቦታ ----------**
**02 የጥናቱ ተሳታፊዎች**
1. **የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራውን ያደረጉ**
2. **የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራውን ያላደረጉ**

**03 የውጤት ኮድ**
1. **የተጠናቀቁ**
2. **ያልተስማሙ**
3. **በከፊል**
4. **የተጠናቀቁ**
5. **ሌላ ካለ ይገለፅ----------**

## ክፍል 1 አጠቃላይ የግለሰብ መረጃ

101. **ዕድሜዎ ስንት ነው ?** ---------- (**በአመት**)

| ተ.ቁ | ጥያቄ | መልስ | ይለፍ | ኮድ |
|---|---|---|---|---|
| 102 | ብሄር/ብሄረሰብዎ | 1. አማራ<br>2. ኦሮሞ<br>3. ትግሬ<br>4. ደቡብ ህዝቦች<br>5. ሌላ /ይጠቀስ/---------- | | |
| 103 | ሀይማኖት | | | |
| 104 | የትምህርት ደረጃ | 1. ማንበብ/መፃፍ የማይችሉ<br>2. ማንበብ መፃፍ የሚችሉ<br>3. ከ1-8 ክፍል<br>4. ከ9-12ክፍል<br>5. ዲፕሎማና ከዛ በላይ | | |
| 105 | ስራ | 1. የቤት እመቤት<br>2. የመንግስት ሰራተኛ<br>3. የግል ስራ<br>4. የቀን ሰራተኛ<br>5. ሌላ/ይጠቀስ/ | | |
| 106 | የቤተሰብ የወር ገቢ? | 1. ከ400ብር በታች<br>2. ከ400-999ብር<br>3. ከ1000 በላይ<br>4. በትክክል አይታወቅም | | |
| 107 | የጋብቻ ሁኔታ ? | 1. ያላገባች<br>2. በለትዳር<br>3. የተፋታች/የተለያዩ<br>4. የሞተባት | | |
| 108 | የወሊድ መከላከያ መንገዶች ይጠቀማሉ/ተጠቅመው ያውቃሉ? | 1. አዎ → 109<br>2. ተጠቅሜ አላውቅም<br>3. መልስ የለውም → 110 | | |
| 109 | ምን አይነት መከላከያ ? | 1. በእንክብል<br>2. በመርፌ<br>3. በክንድ የሚቀበር<br>4. በማህፀን የሚቀመጥ | | |

| ተ.ቁ | ጥያቄ | መልስ | ይለፍ | ኮድ |
|---|---|---|---|---|
| | | 5. ሌላ/ይገለፅ<br>6. መልስ የለም | | |
| 110 | ስንት ልጆች አለዎት ? | 1. የለኝም<br>2. አንድ<br>3. ከ2-4ልጆች<br>4. ከ4በላይ<br>5. መልስ የለም | | |
| 111 | የመጀመሪያውን የግብረ ስጋ ግንኙነት ሲያደርጉ እድሜዎ ስንት ነበር? | 1. ከ15ዓመት በታች<br>2. ከ15-18ዓመት<br>3. ከ18ዓመት በላይ<br>4. መልስ የለም | | |
| 112 | ከአንድ ጊዜ በላይ ውርጃ ነበርዎ? | 1. አዎ<br>2. አልነበረኝም<br>3. መልስ የለውም | | |
| 113 | የመጀመሪያ የወር አበባዎን በስንት አመትዎ አዩ? | 1. ከ15ዓመት በታች<br>2. ከ15-18ዓመት<br>3. ከ18ዓመት በላይ<br>4. መልስ የለም | | |
| 114 | የመጀመሪያ እግዝናዎ በስንት እድሜዎ ነበር ? | 1. ከ15ዓመት በታች<br>2. ከ15-18ዓመት<br>3. ከ18ዓመት በላይ<br>4. መልስ የለም | | |
| 115 | ከአንድ በላይ ሰው ጋር የግብረስጋ ግንኙነት ነበረዎት? | 1. አዎ<br>2. አልነበረኝም<br>3. መልስ የለውም | | |

**ክፍል 2-ሀ ስለ የማህፀን በር ጫፍ ካንሰር መንስኤ፤መከላከያና ህክምናውን/መድሀኒትን ግንዛቤን በተመለከተ**

| ተ.ቁ | ጥያቄ | መልስ | ይለፍ | ኮድ |
|---|---|---|---|---|
| 201 | ስለ የማህፀን በር ጫፍ ካንሰር ሰምተው ያውቃሉ ? | 1. አዎ<br>2. አልሰማሁም | | |
| 202 | የማህፀን በር ጫፍ ካንሰር መንስኤ ያውቃሉ ? | 1. አዎ<br>2. አላውቅም | | |
| 203 | ለበሽታው የሚያጋልጡ ሁኔታዎች ምን እንደሆኑ ያውቃሉ ? | 1. አዎ<br>2. አላውቅም | | |
| 204 | የማህፀን በር ጫፍ ካንሰር መከላከያ መንገዶችን ያውቃሉ ? | 1. አዎ<br>2. አላውቅም | | |
| 205 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ሰምተውያውቃሉ ? | 1. አዎ<br>2. አላውቅም | | |
| 206 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ እንዴት እንደሚገኝ ያውቃሉ ? | 1. አዎ<br>2. አላውቅም | | |
| 207 | የማህፀን በር ጫፍ ካንሰር መድሀኒት/ህክምና አለው ? | 1. አዎ<br>2. አላውቅም | | |
| 208 | የማህፀን በር ጫፍ ካንሰር በሽታ የተያዘ ሰው ያውቃሉ ? | 1. አዎ<br>2. አላውቅም | | |

**ክፍል 2-ለ ስለ ማህፀን በር ጫፍ ካንሰር፡ ምልክቶቹ ፡ መከላከያ መንገዶች ፤የቅድመ ካንሰር ምርመራዎችና፡ የህክምና አማራጮች ና የሚያጋልጡ ሁኔታዎች ዕውቀትን የተመለከቱ ጥያቄዎች**

| ተ.ቁ | ጥያቄ | መልስ | ይለፍ | ኮድ |
|---|---|---|---|---|
| 209 | የማህፀን በር ጫፍ ካንሰር የሚያጠቃው የሰውነት ክፍል ምንድነው | 1. የማህፀን በር/ማህፀንን<br>2. ጭንቅላትን<br>3. ሌላ ይጠቀስ<br>4. አላውቅም | | |
| 210 | የማህፀን በር ጫፍ ካንሰር ምልክቶች ምንድ ናቸው (ከአንድ በላይ መመለስ ይቻላል) | 1. በወር አበባ ጊዜ ከፍተኛ ህመም መሰማት<br>2. ከግንኙነት በኋላ መድማት<br>3. ያልተስተካከለ የማህፀን መድማት<br>4. መጥፎ ጠረን ያለው የማህፀን ፈሳሽ መኖር<br>5. አላውቅም | | |
| 211 | የማህፀን በር ጫፍ ካንሰር የተያያዘ የበሽታ ተዋህስ የሚተላለፈው በምንድነው ? | 1. በግብረ ስጋ ግንኙነት<br>2. ከእናት ወደ ልጅ<br>3. በደም ንክኪ<br>4. አላውቅም | | |
| 212 | ጤናማ ያልሆነ የማህፀን በር ጫፍ ቅድመ ካንሰር ውጤት ምን ማለት ነው | 1. ቅድመ ካንሰር የሚጠቁም ህዋስ መኖሩን ያመለክታል<br>2. የማህፀን ካንሰር እንዳለ ያሳያል<br>3. አባለዘር በሽታን የሳያል<br>4. አላውቅም | | |
| 213 | የማህፀን በር ጫፍ ካንሰርን እንዴት መከላከል ይቻላል(ከአንድ በላይ መልስመስጠት የቻላል ) | 1. ከብዙ ግብረ ስጋ ተጓዳኞች በመታቀብ<br>2. ለአቅመ ሄዋን ከመድረስ በፊት ግብረስጋ ግንኙነት አለማድረግ<br>3. ሲጋራ ባለማጨስ<br>4. በክትባት<br>5. በየጊዜው የህክምና ክትትልበማድረግ<br>6. አላውቅም<br>7. ሌላ/ ካለይገለፅ/ | | |
| 214 | አንዲት ሴት የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ በየስንት ጊዜው ማድረግ አለባት (አንድ ምላሽ ብቻ) | 1. በየአመቱ<br>2. በየሁለት አመት<br>3. በየሶስትአመት<br>4. በየአምስት አመት<br>5. አላውቅም | | |
| 215 | አንዲት ሴት የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ መቼ መጀመር አለባት | 1. በ21 አመቷ<br>2. የግብረ ስጋ ግንኙነት ከጀመረች ከ3አመት በኋላ<br>3. አላውቅም | | |
| 216 | የማህፀን በር ጫፍ ካንሰር ህክምናዎች ምን ምን ናቸው ናቸው | 1. ጨረር<br>2. ኦፕሬሽን/ቀዶ ህክምና<br>3. ፀረ ካንሰር መድሀኒት<br>4. አላውቅም<br>5. ሌላ / ይጠቀስ/ | | |
| 217 | የማህፀን በር ጫፍ ካንሰር ሊድን የሚችልበት የህመም ደረጃ ምንድነው | 1. ቀደም ብሎ/በሽታው ሳይባባስ<br>2. በየትኛውም ደረጃ መዳን አይችልም<br>3. በየትኛውምደረጃ ሊድን ይችላል<br>4. አላውቅም | | |

**ክፍል 2. ሐ እባክዎ ለማህፀን በር ጫፍ የሚያጋልጡ ሁኔታዎችን ይለዩ**

| ተ.ቁ | ጥያቄዎች | አዎ | አይደለም | አላውቅም |
|---|---|---|---|---|
| 218 | ብዙ የግብረ ስጋ ጓደኞች ማፍራት | | | |
| 219 | ለአቅ መሄዋን እድሜ ከመድረስ በፊት የግብረ ስጋ ግንኙነት | | | |
| 220 | ሲጋራ ማጨስ | | | |
| 221 | የእንክብል የወሊድ መቆጣጠሪያ መጠቀም | | | |
| 222 | በአባለዘር በሽታዎች መያዝ | | | |
| 223 | በሁማን ፓፒሎማ ቫይረስ መያዝ | | | |
| 224 | በዘር የማህፀን በር ጫፍ ካንሰር መኖር | | | |
| 225 | የደከመ የሰውነት በሽታን መከላከል አቅም | | | |

**ክፍል 3 ስለማህፀን በር ቅድመ ካንሰር ምርመራ ማድረግን በተመለከተ**

301 . የማህፀን በር ቅድመ ካንሰር ምርመራ አድርገው ያውቃሉ

1. አዎ
2. አላደረግሁም
3. አላውቅም

302. ለ301 ጥያቄ መልስ አዎ ከሆነ መቼ ነው ያደረጉት

1. ባለፈው አንድ አመት
2. ባለፉት አምስት አመታት
3. ከአምስት አመት በፊት
4. አላውቅም

**ክፍል 4 በማህፀን በር ጫፍ ካንሰር አስተሳሰብ**

4-ሀ ለማህፀን በር ጫፍ ካንሰር **ተጋላጭነት** በተመለከተ ያለ አስተሳሰብ

እባክዎን ከዚህ በታች ለተጠየቁት ጥያቄዎች በጣም እስማማለሁ(በእስ) ፤እስማማለሁ(እስ) ፤ከሁለም አይደለሁም(ከአ)፤አልስማማም(አል) ፤በጣም አልስማማም(በአል) በማለትይመልሱ

| ተ.ቁ | ጥያቄዎች | በእሰ | አስ | ከአ | አል | በአል |
|---|---|---|---|---|---|---|
| 401 | የማህፀን በር ጫፍ ካንሰር ይይዘኛል ብዬ አስባለሁ /እጨነቃለሁ | | | | | |
| 402 | ለማህፀን በር ጫፍ ካንሰር መንስኤ የሆነው ሂዩማን ፓፒሎማ ቫይረስ ይይዘኛል ብዬ አስባለሁ | | | | | |
| 403 | ለማህፀን በር ጫፍ ካንሰር ለመያዝ ተጋላጭነኝ ብዬአምናለሁ | | | | | |
| 404 | ማንኛዋም ሴት ለማህፀን በር ጫፍ ካንሰር የመያዝ እኩል እድል አላት ይህ ከኔ ቁጥጥር ውጪ ነው | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 405 | ለማህፀን በር ጫፍ ካንሰር የመያዝ እድሎቼ ከፍተኛ ናቸው | | | | | |
| 406 | ሂዩማን ፓፒሎማ ቫይረስ የመያዝ እድሌ ዝቅተኛ ነው | | | | | |
| 407 | ለማህፀን በር ጫፍ ካንሰር እንዳይዘኝ ማድረግ እችላለሁ | | | | | |
| 408 | ሂዩማን ፓፒሎማ ቫይረስ እንዳይዘኝ ማድረግ እችላለሁ | | | | | |

**4-ለ የማህፀን በር ጫፍ ካንሰር በሽታን ከባድነት የሚያመለክት አስተሰሳብ**

| ተ.ቁ | ጥያቄዎች | አዎ | አይደለም | አላውቅም |
|---|---|---|---|---|
| 409 | እኔ የማህፀን በር ካንሰር ቅድመ ምርመራ አላደርግም ምክንያቱም ውጤቱ ስለሚያስፈራኝ | | | |
| 410 | ስለ ማህፀን በር ጫፍ ካንሰር አንድ ሰው ማድረግ የሚችለው ትንሽ ነገር ብቻ ነው | | | |
| 412 | የማህፀን በር ጫፍ ካንሰር ቅድመ ምርመራ አደርጋለሁ | | | |
| 413 | የማህፀን በር ጫፍ ካንሰር ያጋጠማቸው ሴቶች በሙሉ ማህፀናቸውን በኦፕሬሽን ማስወጣት ግዴታ አለባቸው | | | |
| 414 | ቀደም ብሎ የተደረገ የማህፀን በር ጫፍ ካንሰር ቅድመ ምርመራ በህይወት የመቆየት እድልን ይጨምራል | | | |
| 415 | የማህፀን በርን ወይም ማህፀንን በኦፕሬሽን ማጣት ወደፊት በሚኖረኝ ያታዊ ግንኙነት ላይ ተፅዕኖ/ጉዳት አለው | | | |
| 416 | ከማስባቸው በሽታዎች ሁሉ የማህፀን በር ካንሰር በሽታ በጣም አደገኛ ነው | | | |
| 417 | የማህፀን በር ጫፍ ካንሰርን መከላከል ይቻላል | | | |
| 418 | የማህፀን በር ጫፍ ካንሰር ህይወትን የሚፈታን በሽታ ነው | | | |
| 419 | ማህፀን በር ጫፍ ካንሰር በሽታ ከትዳር ወይም ከያታ አጋሬ ጋር በሚኖረኝ ግንኙነት ችግር ይፈጥርብኛል | | | |
| 420 | ማህፀን በር ጫፍ ካንሰር የያዛቸውአብዛኛዎቹ ሴቶች ይሞታሉ | | | |
| 421 | የማህፀን በር ጫፍ ካንሰር ከያዘኝ ጠቅላላ ህይወቴ ይበላሻል | | | |

**4-ሐ ስለ ማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ያለው አስተሳሰብ**

**እባክዎ ከተሰጡት መጠይቆች ትክክል መሆናቸውን ወይም አለመሆናቸውን ይለዩ**

| ተ.ቁ | ጥያቄዎች | አዎ | አይደለም | አላውቅም |
|---|---|---|---|---|
| 422 | የማህፀን በር ጫፍ ካንሰር ገና ሲጀምር ቀደም ብሎ በምርመራ ማወቅ ማወቅ ይቻላል | | | |
| 423 | የማህፀን በር ጫፍ ካንሰር ቀድሞ ከታወቀ ለህይወት አስጊ አይሆንም | | | |
| 424 | የማህፀን በር ጫፍ ካንሰር ቀድሞ ከታወቀና ክትትል ያለው ህክምና ከተደረገለት ሊድን ይችላል | | | |
| 425 | በየጊዜው በመደበኛነት የሚደረግ የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ በካንሰር የመያዝ እድልን ይቀንሳል | | | |

**4-መ የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ላለማድረግ የሚያግዱ ሁኔታዎችን በተመለከተ ያለ አስተሳሰብ**

| ተ.ቁ | ጥያቄዎች | አዎ | አይደለም | አላውቅም |
|---|---|---|---|---|
| 425 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ክፍል ውስጥ የማውቃቸው ሰዎች ወይም ጓደኞቼ እንዲያዩኝ አልፈልግም | | | |
| 426 | የማህፀን በር ጫፍ ካንሰር | | | |
| 427 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራለማድረግ ጊዜ የለኝም | | | |
| 428 | ስለ ማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ የማውቀው የለኝም | | | |
| 429 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ የት እንደሚደረግም አላውቅም | | | |
| 430 | ለማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ስንት እንደሚከፈል አላውቅም | | | |
| 431 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ለማድረግ ገና ልጅ ነኝ | | | |
| 432 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ለማድረግ ቤተሰቦቼ አይመቻቸውም /ደስተኛ አይደሉም | | | |
| 433 | የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ በጣም ያማል ወይም ያስጠላል | | | |
| 434 | እኔ የማህፀን በር ጫፍ ካንሰር ሊይዘኝ አይችልም ስለዚህ የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ አያስፈልገኝም | | | |

**4-ሠ ቅድመ ካንሰር ምርመራውን ለመውሰድ የሚያነሳሱ ሁኔታዎች**

435. ስለ የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ አገልግሎት ከአወቁ ከየት ሰሙ

1. ከመምህራን
2. ከጓደኞቹ
3. ከጤና ባለሙያ
4. ከሚዲያ
5. ከመፅሀፍ/መፅሄት

436. ስለ ማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ መረጃ ለመስጠት ለማሳወቅ የትኞቹ መንገዶች የተሻሉ ናቸው

1. በቴሌቪዥን የቅስቀሳ ስራ መስራት
2. በሬዲዮ የቅስቀሳ ስራ መስራት
3. በጤና ባለሙያዎች የሚሰራ የማስተማር ስራ
4. በማህበረሰብ መሪዎች የቅስቀሳ ስራ መስራት
5. ሌላ ካለ ይግለፁ

**አመሰግናለሁ!**

**Annexure E: Consent form for questionnaire to participants**

**University of South Africa**
**Department of Health studies**
**Participant information sheet and informed consent form**

My name is …… I work for a research team from UNISA. I am going to conduct survey using questionnaire to study **determinants factors for cervical cancer screening among women in Addis Ababa**, which is conducted to complete a doctoral degree on health studies at University of south Africa. The purpose of this study is to assess the determinants factors influencing the screening practice of cervical cancer among women in Addis Ababa.

To complete the questionnaire, I will ask your questions approximately lasting 20-30 minutes duration. No harm is imposed to you except the time you commit for interview but some of the question may look too personal but it is helpful for the study. In addition, there is no payment for participation even though the result of the study may benefit as a citizen. The questionnaire participation in this study is voluntary, you have the right to refuse or withdraw from the study at any time for any reason without penalty. However, your honest answers to these questions are important since it provides relevant information to design interventions that aims to improve the practice of cervical cancer screening.

Your responses are completely confidential, your name will not be written on the form and will never be used in connection with any of the information you provided. The information you provide is confidential and it will be used only for study purpose and it will not be disclosed to anyone. A code number will be used to identify the participant therefore, writing your name is not needed. If you have something that is not clear about the study, please contact the principal investigator Seble Tiku with phone number 0911675341

Are you willing to participate in this study? 1. Yes 2. No
Signature of data collector certifying verbal informed consent _____

Thank you

**Annexure F: Amharic version consent for questionnaire to participants**

**የደቡብ አፍሪካ ዩኒቨርስቲ**

**ሄልዝ ስተዲ ዲፓርትመንት** (Health Studies)

**የመረጃ ቅጽ**

**መግቢያ**

**ጤና ይስጥልኝ ስሜ ---------- ይባላል በአዲስ አበባ ከተማ ለሚገኙ ሴቶች የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ለማድረግ የሚወስኑ ሁኔታዎች በተመለከተ በተዘጋጀው ጥናት መረጃ በመሰብሰብ ላይ ነኝ፡፡**

**የጥናቱ ዓላማ፡ በአዲስ አበባ ከተማ ለሚገኙ ሴቶች የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ለማድረግ የሚወስኑ ሁኔታዎች ላይ የሚያጠና ማግኘትና ለተገኙ ችግሮች መፍትሄ በመፈለግ የሚሰጠውን የቅድመ ማህፀን ጫፍ ካንስር ምርመራ አገልግሎት ለማሻሻል ነው ፡፡**

**ይህንን ፕሮጀክት ለማከናወን እርስዎ በፈቃደኝነት እንዲሳተፉ የተጋበዙ ሲሆን ፍቃደኛ ከሆኑ በአማርኛ በተዘጋጀው መጠይቅ ላይ ሊመልሱልን ይችላሉ፡፡ የሚሰጡት መረጃ ሚስጢራዊነቱ የተጠበቀ ነዉ፡፡ስምዎም ሆነ ሌላ መረጃ በፍጹም ለማንም አይነገርም፡፡ይህንን መጠይቅ ለመሳተፍ ቢበዛ ከ 20-30 ደቂቃ ይፈጃል፡፡ ሆኖም ላለ መሳተፍ ከፈለጉ ጥናቱን ከጀመሩም በኋላ ሆነ በፊት ማቋረጥ መብትዎ ነው፡፡መጠይቁ በአማርኛ ስለተዘጋጀ ውይይቱ የሚደረገው በሚያውቁት ቋንቋ ነው፡፡ በዚህ ጥናት በመሳተፍዎ የማህፀን በር ጫፍ ቅድመ ካንሰር ምርመራ ለማድረግ የሚወስኑ ሁኔታዎች ላይ ችግር በመለየት ለችግሮች መፍትሄ በመፈለግ የሚሰጠውን የቅድመ ማህፀን ጫፍ ካንስር ምርመራ አገልግሎት እንዲሻሻል በማድረግ እራስዎን፤ቤተሰብዎንና ህብረተሰቡን ተጠቃሚ ያደርጋሉ፡፡ በዚህ ጥናት ላይ በመሳተፍዎ ጊዜዎን ከመሰዋትዎ ውጭ ምንም የሚያመጣው ጉዳት የለም፡፡ ነገር ግን የእርስዎ ተሳትፎ ለነፍሰጡር እናቶች የጤና ትምህርት ጉዳይ ላይ ተያያዥ መረጃ ለማመንጨት ጠቃሚ ነው፡፡ በዚህ ጥናት በመሳተፍዎ የሚሰጥ ምንም ዓይነት ክፍያ አይኖርም፡፡**

**ከእርስዎ የተገኘዉ መረጃ ለማንም ባለመግለጽ ሚስጢራዊነቱ ይጠበቃል፡፡ በመረጃዉ ስምዎ ሳይጠቀስ መለያ ቁጥር በመጠቀም በሚስጥር የሚቆለፍ ቦታ ይቀመጣል፡፡ በዚህ ጥናት ያለመሳተፍ መብትዎ የተጠበቀ ከመሆኑም ባሻገር ከመጀመሩም በኋላ ሆነ በፊት መቀጠል ካልፈለጉ በሙሉ ወይም በከፊል ማቋረጥ ይችላሉ፡፡ይህንን በማድረግዎ በጤና አገልግሎትም ሆነ በሌላ አገልግሎት ላይ ምንም አይነት ተጽእኖ አየደርስብዎትም፡፡ ስለዚህ ምርምር ሊጠይቁ የሚፈልጉትን መረጃ ሁሉ የማግኘት መብት አለዎት፡፡ማንኛዉንም መጠየቅ የሚፈልጉትን**

ጥያቄ ለዋናው የጥናቱ ባለሙያ ሰብለ ትኩ በስልክቁጥር 09111675341 ደዉለዉ መጠየቅ ይችላሉ፡፡ ይህ ጥናት በደቡብ አፍሪካ ዩንቨርስቲ ሄልዝ ስተዲስ ዲፓርትመንት እና በአዲስአበባ ጤና ቢሮ የምርምርና ሥነ-ምግባር ቦርድታይቶ ፀድቋል፡;
ከላይ የተገለጹትን መረጃዎች በመገንዘብ በጥናቱ ለመሳተፍ ፍቃደኛ ነዎት?

አዎ ---------- ወደ ቃለ መጠይቁን ይለፉ

መሳተፍ አልፈልግም ---------- ቃለ መጠይቁን ያቁሙ

**Annexure G: Semi-structure interview guide**

**Qualitative study**

**Semi-structured interview inquiry question for health professionals in the health centres**

No_____

Health centre_____

Age in years_____

Profession/educational level _____

Position _____

Service year in the health profession _____

Q. 1 Have you been involved in any form of cervical cancer screening service provider?

Q. 2 Can you describe available strategies/ activities to prevent cervical cancer in your organisation?

Q. 3 Can you tell me about the response of women to have cervical cancer screening?

Q. 4. What is your opinion about knowledge of women on the advantage of cervical cancer screening test?

Q. 5. What your opinion about the perception of women on cervical cancer screening test?

Q. 6. What reasons are given by women to have cervical cancer screening?

Q. 7. What reasons are given by women not to have cervical cancer screening?

Q. 8. What are the challenges in cervical cancer screening service in your organization?

Q. 9. What are your suggestions to address these challenges?

Q. 10. Any other comment which could increase cervical cancer screening uptake?

**Annexure H: Letter from the language editor**

Cell/Mobile: 073-782-3923

53 Glover Avenue
Doringkloof
0157 Centurion

17 September 2020

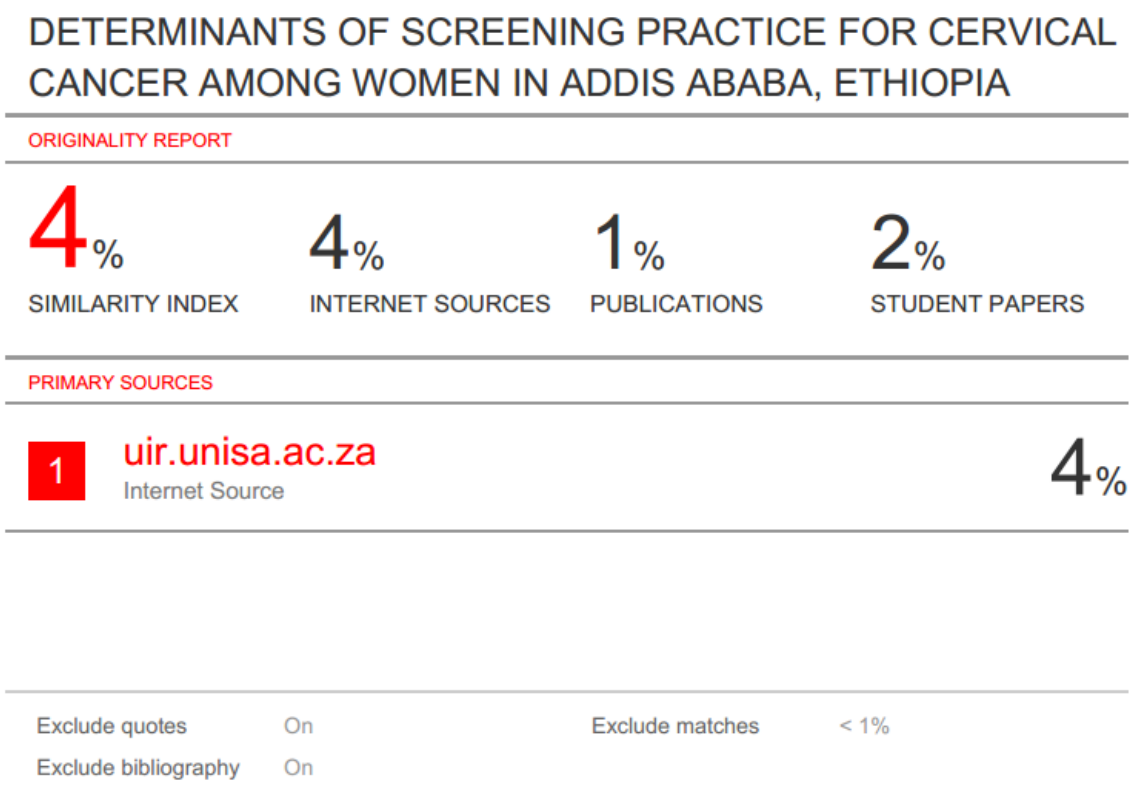
**TO WHOM IT MAY CONCERN**

I hereby certify that I have edited Seble Tiku Ayka's doctoral dissertation, **Determinants of screening practice for cervical cancer among women in Addis Ababa, Ethiopia**, for language and content.

*IM Cooper*

Iauma M Cooper
192-290-4

**Annexure I: Originality turnitin report**



DETERMINANTS OF SCREENING PRACTICE FOR CERVICAL CANCER AMONG WOMEN IN ADDIS ABABA, ETHIOPIA

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