ADDIS ABABA UNIVERSITY

COLLEGE OF HEALTH SCIENCES

DEPARTMENT OF NURSING AND MIDWIFERY

RISKY SEXUAL BEHAVIOR, KNOWLEDGE ON CERVICAL CANCER AND PREDICTORS FOR PAP SMEAR UPTAKE AMONG ADDISABABA UNIVERSITY HEALTH SCIENCE COLLEGE FEMALE STUDENTS, ADDIS ABABA ETHIOPIA.

BY

ERISTE NIGUSSA

A THESIS SUBMITTED TO ADDIS ABABA UNIVERSITY COLLEGE OF HEALTH SCIENCE DEPARTMENT OF NURSING AND MIDWIFERY, FOR THE PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTERS IN MATERNITY AND REPRODUCTIVE HEALTH NURSING.

DECEMBER, 2012

ADDIS ABABA, ETHIOPIA

APPROVED BY BOARD OF EXAMINERS

This thesis by **Erite Nigussa** is accepted in its presented form by board of examiners in satisfying thesis requirement for the degree of Masters of Science in Reproductive and Maternal Health Nursing.

_____	_____
Advisor	**Signature**
_____	_____
Examiner	**Signature**

Acknowledgement

This research project would not have been possible without the support of many people. I wish to express my gratitude to my advisor Mr.Daniel Mengistu who offered his invaluable support and guidance to finalize this thesis.

My deepest gratitude is also due to the members of the research committee of the school for their comments to give a final shape to my research proposal.

Special thanks also to all my graduate friends, particularly Engida Yisma and Misrak Getinet for their invaluable assistance and support during my study.

I would also like to convey thanks to Haramaya University for granting me the opportunity to join this graduating program.

I wishes to express my love and gratitude to my beloved families; for their understanding & endless love, through the duration of my studies

Table of contents **Page**

Acknowledgement i

Table of contents ii

List of Tables v

List of Figures vi

Abbreviations and Acronyms vii

Abstract viii

CHAPTER ONE: INTRODUCTION 1

1.1. Background information 1

1.2. Statement of the problem 4

1.3. Significance of the study 7

CHAPTER TWO: LITRATURE REVIEW 8

CONCEPTUAL FRAME WORK 20

CHAPTER THREE: OBJECTIVE 22

3.1. General objective 22

3.2. Specific objectives: 22

CHAPTER FOUR: METHODS AND MATERIALS 23

4.1. Study Area 23

4.2. Study design and period 24

4.3. Source and Study population 24

4.4. Inclusion criteria 24

4.5. Exclusion criteria 25

4.6. Sample size determination 25
4.7. Sampling techniques and procedures 26
4.8. Data collection instrument and technique 29
4.9. Study variables 30
4.9.1. Dependant variables 30
4.9.2. Independent variables 30
4.10. Operational definition for variables 31
4.11. Data quality control 32
4.12. Data processing and analysis 32
4.13. Ethical consideration 33
4.14. Dissemination of the Study 33
CHAPTER FIVE: RESULT 34
5.1. Socio-demographic characteristic 35
5.2. Sexual behavior of the respondents 38
5.3. Knowledge level of the respondents on cervical cancer and pap smear screening test 39
5.4. Source of information about cervical cancer and pap smear 48
5.5. Pap smear uptake status 49
5.6. Predictors for pap uptake status of the respondents using health belief model constructs and students' knowledge level. 55
5.6.1. Perceived susceptibility 55
5.6.2. Perceived severity 56
5.6.3. Perceived benefit 56

5.6.4. Perceived barriers 57
CHAPTER SIX: DISCUSSION 62
6.1. Risky sexual behavioral 62
6.2. Knowledge Level on cervical cancer and Pap smear test. 63
6.3. Pap smear uptake status 66
6.4. Predictors for Pap smear uptake 67
6.4.1. Perceived susceptibility 67
6.4.2. Perceived severity 68
6.4.3. Perceived benefit 69
6.4.4. Perceived barriers 70
6.4.5. Knowledge level 71
CHAPTER SEVEN: STRENGTHS AND LIMITATIONS OF THE STUDY 72
7.1. Strengths of the study 72
7.2. Limitations of the study 72
CHAPTER EIGHT: CONCLUSION AND RECOMMENDATIONS 73
8.1. Conclusion 73
8. 2. Recommendation 75
References 77
ANNEX 82

List of Tables **Page**

Table 1: Number of students determined using probability proportional to size of the departments and year of study, June 2012 (N=382) 27

Table 2: Socio-demographic characteristic of Addis Ababa University Health Science College Female Students, June 2012 (n=202)..... 35

Table 3: Sexual behavior of Addis Ababa University Health Science college female students, June 2012 (n=202) 38

Table 4: Knowledge level on cervical cancer, with socio demographic characteristic and sexual behavior of AAU Health Science College female students, June 2012 (n=202)..... 45

Table 5: Bivaraite analysis of Pap smear uptake status with socio-demographic characteristics and sexual behavior of AAU Health Science College female students, 2012 (n=202). 50

Table 6: Bivariate and Multivariate Binary Logistic Regression analysis of predictors for Pap smear uptake status among AAU Health Science College female students, June 2012 (n=202). 59

List of Figures

Figure 1: Schematic representation of conceptual frame work adopted from Health Belief Model (33) 21

Figure 2: Schematic representation of Sampling Procedure 28

Figure 3:Awareness about risk factors that predispose to cervical cancer among Addis Ababa university health science college female students, June 2012, (n=202). 41

Figure 4: Distribution of knowledge level on cervical cancer and pap smear among AAU Health Science College female students, June 2012 (n=202). 43

Figure 5: Distribution of cervical cancer screening status among AAU Health Science College female students, June 2012 (n= 202). 49

Figure 6: Distribution of Pap smear uptake status by year of study, among AAU health science college female students, June 2012 (n= 202). 54

Figure 7: Summary of AAU Health Science College female students' perception on cervical cancer and pap smear test, June 2012 (n=202). 58

Abbreviations and Acronyms

AAU	Addis Ababa university
ACOG	American College of Obstetrics and Gynecology
ETB	Ethiopian Birr
HIV/AIDS	Human Immuno Deficiency Virus /Acquired Immuno Deficiency Syndrome
VIA	Visual Inspection with Acetic Acid
HPV	Human Papilloma Virus
IARC	International Agency for Research on Cancer
PPS	Probability Proportional to Size
STD	Sexually Transmitted Disease
STI	Sexually Transmitted Infection
SRS	Simple Random Sampling

Abstract

Back ground: Cervical cancer is the most frequent form and leading cause of cancer mortality among Ethiopian women, because cancer is often at its advanced stage by the time patients seek health care services (1). Pap smear test provides an appropriate way for early detection and prevention if appropriately implemented. However, Pap smear and other cervical cancer screening tests are under utilized by the legible women mostly because of lack of awareness on the diseases and the screening tests (13).

Objective: This study was aimed at assessing risky sexual behavior, knowledge on Cervical cancer and identifying predictors for Pap smear screening test among Addis Ababa university Health science college female students using the Health Belief Model .

Methods: A cross sectional survey was carried out at Addis Ababa University Health Science College in June 2012 among 202 female students selected by simple random sampling technique. After the data was coded, entered and cleaned using EpiInfo; SPSS was used for analysis. Association between dependent and independent variables was tested by Cross tabulating the variables and Binary logistic regression test was performed to identify the major predictors of Pap smear uptake.

Result: Out of 58(28.7%) sexually active respondents, 17(30%) had sex with multiple partners and 46(79.31%) had never used condom while only 4(6.9%) use condom always during sexual intercourse. The knowledge level of most respondents concerning cervical cancer was identified to be low, in which 48(23.8%) and 12(5.9%) were with poor and excellent knowledge respectively. Year of study [x^2=64.907; p <0.001] and sexual activity of the respondents[x^2=8.021; P= 0.046] were among factors affecting their knowledge level. Pap smear utilization rate was very low 26(12.9%) and the uptake status was found to have association with

marital status [x^2=10.633; P<0.001], sexually activity [x^2 =23.934 ; P<0.00] and year of study [x^2 = 31.006; P<0.001]. However, knowledge level was major predictor [OR=10.326 (1.290, 82.638)] followed by perceived susceptibility [OR=3.522(1.260, 9.850)] for pap smear uptake status.

Conclusion and recommendation: Some students were at high risk of contracting HPV and cervical cancer as they had risky behavioral practices. Most of the students knew less about cervical cancer and its screening tests, from which the sexually active and those attending 3rd year and 4th year classes were with better understanding. Pap smear uptake was very low which could be improved through increasing awareness concerning the disease, Pap smear test as well as their perceived susceptibility to cervical cancer. Therefore concerned bodies are recommended to design and implement effective strategies to improve females' awareness on cervical cancer and Pap smear test with its utilization

CHAPTER ONE: INTRODUCTION

1.1. Background information

Cervical cancer is cancer that forms in tissues of the cervix (the organ connecting the uterus and vagina). It is usually a slow-growing cancer that may not have symptoms but can be found with regular Pap tests (a procedure in which cells are scraped from the cervix and looked at under a microscope. Normally, cells in a woman's cervix that are old or damaged will stop dividing, die and are replaced by healthy young cells. The earliest, precancerous stage of cervical cancer occurs when old or damaged cells continue to divide in the superficial layer of the cervix, this is called cervical dysplasia. When cervical dysplasia is not treated, it can grow and spread into the deeper tissues of the cervix, developing into cervical cancer. Cervical dysplasia is 100% treatable if it is detected as early as possible before it is advanced to cervical cancer. Once cervical cancer has developed, the prognosis varies depending on the cancer's stage of advancement, the patient's age, general health status, medical history and other factors. Cervical cancer can lead to life-threatening complications and be fatal, especially if it goes undetected and untreated. Therefore, early detection and treatment of the precancerous stage is the key to success in achieving a reduction in mortality and morbidity that result from cervical cancer.

Cervical cancer is a common cancer of female's reproductive system and it is a global public health problem accounting for almost 300,000 deaths annually however, the routine use of Pap smear screening has made it far less common in developed countries like United state (1). In the same reference it is also identified that cervical cancer is the 7^{th} of all cancer cases and second most common cancer among women worldwide especially with those at age of 22-40 years and represents 13% of cancer cases among females of developing countries.

Cervical cancer is most often caused by an infection of human Papilloma virus (HPV) which can also cause genital warts. HPV is the most common sexually transmitted disease (STD) among college students today. It is estimated that up to 50-60% of sexually active female college students are infected with HPV at some point during their college years (2). In the same source it was put forward that there are more than 100 different types of the virus. Some types of HPV cause warts on hands or feet, others cause genital warts and some can have no visible symptoms at all. HPV 16 and 18 subtypes are known common causes of cervical cancer in developing countries like Africa. This virus is usually contracted through vaginal and/or anal sex with same sex or opposite sex partners, direct skin-to-skin contact. There is at least a 64% chance of contracting HPV with each act of unprotected sex with an infected partner (2).

As it had been shown by different studies ,there are many risk factors associated with the development of cervical cancer some of which includes , having multiple sexual partners, engaging in sexual intercourse at an early age, unprotected sex, cigarette smoking, lack of regular Pap tests, weakened immune system as in case of HIV/AIDS and long term use of steroidal drugs, age (Cancer of the cervix occurs most often in women over the age of 40 although, infection with the HPV virus usually occurs in teenage and young adult women) and using birth control pills for a long period (5 or more years) (1,3).

Cervical cancer can be prevented primarily by refraining from the above mentioned unhealthy practices and behavioral acts, where as secondary prevention of cervical cancer includes detection of pre-cancerous lesions or early stage cancer and treatment of these lesions. The different screening tests available for cervical cancer are the Pap smear/cytology, HPV DNA testing, and visual inspection with acetic acid (VIA). Pap smear is a quick, easy and commonly used screening test that detects precancerous cells before they advance to cancer. Different

recommendations were made concerning the timing and frequency of pap smear test. For instance, the American Cancer Society recommends screening women in the general population has to be done about 3 years after they begin having vaginal intercourse, but no later than age 21, where as ACOG states screening should start at age 21 to prevent cervical cancer and to start timely treatment before precancerous cell advances to actual cancer. Regarding frequency of the screening ; both American Cancer Society and ACOG recommend that frequency of pap smear screening would be better if it is done yearly for women with age 21-29 and every 2-3 years for those aged more than or equal to 30 years and who have had 3 normal pap test results (4). A pap test can be reported as either of normal, unclear and abnormal. The HPV test can help find out if cell changes are related to HPV. An abnormal result means that cell changes were found on cervix. This usually does not mean that there is cervical cancer. Abnormal changes on cervix are likely caused by HPV. The changes may be minor (low-grade) or serious (high-grade) (5).

In general cervical cancer which is common females' reproductive cancer problem is commonly caused by HPV through unprotected sexual intercourse and worsened depending on different socio-demographic characteristics and behavioral practices. However, it can easily be prevented through healthy behavioral practice and early detection using screening tests like pap smear test which is recommended for all sexually active women and starting with age of 21 years with yearly or 2-3years based regular test.

1.2. Statement of the problem

Now a day Cancer is becoming an emerging public health problem worldwide mainly in Africa. A study on Cervical Cancer in Context of the Global Cancer Burden had an expectation that cancer deaths will project by millions in 2015-2030; of which 40% cases are preventable (6, 7). This expectation was proposed in light of major demographic and behavioral changes which are risky to expose to cancer. Survival after diagnosis of cancer is much poorer in Africa than in developed countries, because a majority of cancers in Africa are diagnosed at an advanced stage of the disease due to the lack of screening and early detection services, as well as limited awareness of early signs and symptoms of cancer among the public as well as health care providers (7). Most cancers which are secondary to infections including stomach, liver and cervical cancer are common in developing countries than in developed ones, which could be related to the absence of a well-developed public health infrastructure for the control of cancer-causing infectious agents and contaminants, the lack of basic preventive health care and screening services for much of the population, and the poor quality diets available to the most economically disadvantaged members of society in many developing countries(8).

Cervical cancer is the second leading cause of cancer deaths among women worldwide. Some studies show that approximately 500,000 new cases are detected and 274,000 deaths occur each year due to cervical cancer, the vast majority of which occur in developing countries; out of which 83% of new cases and 85% of related deaths occur in resource-poor countries; affecting poor and vulnerable women at the prime of life (1). By the same study it was identified that cervical cancer is the 2nd most frequent cancer case and common cancer related death among women in Ethiopia, mainly among those with age 15-44 years. It was judged that, by 2025 new

cervical cancer cases and cervical cancer deaths will project to 7700 and 5421 respectively in Ethiopia (3).

Despite its burden, cancer continues to receive low public health priority in Africa, largely because of limited resources and other pressing public health problems including; communicable diseases such as HIV/AIDS, malaria and tuberculosis . It may also be in part due to a lack of awareness about the magnitude of the current and future cancer burden among policy makers, the general public, and international private or public health agencies (7).

About 70% of Cervical cancer is associated with the sexually transmitted Human Papilloma Virus (HPV) subtypes 16 and 18 worldwide and women in Ethiopia over age of 15 years living with HIV are more likely to be infected with the virus, therefore they are the most vulnerable to cervical cancer (1). The data compiled in 2009 at the Institute Catalad'Oncologia has shown that HPV prevalence in women with normal cytology was 436,430 worldwide and 751 in Eastern Africa where as no evidence has been put about Ethiopia concerning the prevalence of HPV in women with normal cytology, low grade lesion and high grade lesion (3). But it was estimated that in Eastern Africa, the region Ethiopia belongs to, about 33.6% of women in the general population are estimated to harbor cervical HPV infection at a given time (1).

Sexually active adolescents may be at particularly high risk of developing cervical dysplasia because of earlier initiation of sexual intercourse, higher number of sexual partners, increased incidence of STI including , smoking and the possibility that the cervix may be more vulnerable to the acquisition of STI and carcinogenesis. College women have a greater risk of acquiring STDs than the general population because of the high-risk sexual behavior in which they engage. For instance a study a conducted at Hawasa in 2009 indicated that among sexually active female

students 59.4 % initiated sexual intercourse at high school level, 34.3% have more than one sexual partner and 65.0% do not use condom during sexual intercourse (9). Other study at Addis Ababa University identified that about 37.5% of the respondents reported they had more than on sexual partner (10). On top of the prevalence of this risky sexual behavior among adolescents of our country, it was also indicated that never married young sexually active females the country carry the greater risk of acquiring HIV infection, which is risk factor for cervical cancer (11).

Although cervical screening affords women with the opportunity to take control of their cervical health, they may not be aware of issues in relation to cervical cancer. Studies also revealed that the knowledge concerning cervical cancer most women have was so poor and there was strong association between their knowledge and their screening status, wherein women who had received a Pap test were more knowledgeable about cervical health than those who had not (12,13).

Moreover, there are limited number of researches in our country which were concerned with young women's knowledge on cervical cancer and their Pap smear screening test uptake status. Hence, investigating the knowledge of younger women as well as the major factors they believe would hindered their Pap smear test utilization, seems essential in facilitating concerned bodies with information concerning women and their cervical health practices.

Therefore, this study was aimed to assess Addis Ababa university health science college female students' engagement in to risky sexual practice, knowledge on cervical cancer and predictors for Pap smear screening test uptake.

1.3. Significance of the study

- The study helps policy makers in designing relevant, effective and comprehensive cervical cancer preventive health programs, since understanding about engagement in risky sexual behavior and factors that affect utilization of Pap smear screening test is one of the key pre-requisite information for having such programs.

- It may be also an effective strategy in developing culture of cervical cancer risk minimization among society of the country, as identifying knowledge gap among health science students and training them produce well equipped health professionals who will serve the society.

- The finding will be an input for organizations working on cervical cancer prevention programs, to focus on young group of women.

- It will be useful for health institutions rendering MCH services, to design health education programs concerning cervical cancer and to promote the target group for screening tests.

- Universities my use this information in promoting condom utilization as well as making it available and accessible for the students; as still some students were found to engage in risky sexual behavior.

- It helps in filling the existing research gap in our country concerning youngest female group's awareness on cervical cancer and their utilization of available screening services.

- It will be an input for those interested in conducting study concerning this issue.

CHAPTER TWO: LITRATURE REVIEW

Cancer imposes a major disease burden worldwide, with considerable geographic variations in incidence, mortality, survival, overall disease burden, causative environmental factors, and mix of prevention, detection, treatment, and palliative programs that make up a country's cancer control strategy. Unless cancer prevention and screening interventions effectively reduce the incidence of cancer, the number of new cancer cases will increase to an estimate15 million in 2020, 9 million of which would be in developing countries; and by 2050, the cancer burden could reach 24 million cases per year worldwide, with 17 million cases occurring in developing countries (8). According to the International Agency for Research on Cancer (IARC), about 715,000 new cancer cases and 542,000 cancer deaths occurred in 2008 in Africa (7).

Cervical cancer is a global public health problem accounting for almost 300,000 deaths annually; of which 83% of new cases and 85% of related deaths occur in resource-poor countries; affecting poor, vulnerable, and disenfranchised women at the prime of life (1). The same study identified that these numbers will projected to nearly double to 1.28 million new cancer cases and 970,000 cancer deaths by 2030 simply due to the aging, growth of the population, adoption of behaviors and lifestyles associated with economic development, such as smoking, unhealthy diet, and physical inactivity.

Nearly 22 million Ethiopian women over the age of 15, approximately 7,600 are diagnosed with cervical cancer and roughly 6,000 women die of the disease each year (1). Cervical cancer is preventable and, in most cases, curable, if identified in its early stages. However, the most frequent form and leading cause of cancer mortality among Ethiopian women, cervical cancer is

often at an advanced stage by the time they seek screening services. The 534,000 women over age 15 living with HIV in Ethiopia are among the most vulnerable to cervical cancer (1).

Human Papilloma Virus (HPV) is a sexually transmitted infection and the most common cause of cervical cancer. Women living with HIV are more readily infected with certain types of HPV, more likely to develop precancerous lesions, and more vulnerable to rapid development of these lesions than HIV-negative women (1). Epidemiological studies have also consistently shown a strong association between the risks of acquiring cervical cancer, exposure to Human Papilloma Virus (HPV) and factors linked to early sexual activity, multiple sexual partners etc; all which are highly prevalent risk factors in Ethiopia (13)**.**

Different studies were conducted at different countries of the world in order to assess knowledge on cervical cancer, Pap smear screening status, predictors for not having Pap smear test as well as sexual behavior among females mainly the youngest group. Therefore, the following section show the review of these studies.

2.1. Risky sexual behavior predisposing to cervical cancer

A study in South Africa identified that majority of the students were involved in a sexual relationship 51.2%, with 19.2% reporting two or more sexual partners, median age at first sex of the respondents was 18 years (range10-26); while the Condom using habit was quite high (81.4%) among this group, with 63% reported always using condoms and almost all of them (95%) used fresh condoms (14). In other study, 73% of the participants were engaged in sexual intercourse and 15% had more than one partner, but only 13% of the sample always used condoms (9). The age at first coitus for 51% of participants in other study was 18years and 30.6% of them reported that they had sex with five or more sexual partners (15)**.**

2.2. Knowledge cervical cancer (etiology, risk factors, preventions)

Ninety percent of female undergraduate students in Ibadan University were aware of cancer in general and 71.0% cervical cancer; of which 96% of students of the College of Medicine were aware of cervical cancer, compared to 63.7% of students from other colleges (18). According to this study 94.5% and 66.4% of married and single respondents respectively were aware of the disease (18). In other it was identified that 5/10 knowledge assessing items were correctly answered by 75%–95% whereas, 50% -74% answered five items and 28%–49% three items correctly (16).

A study at Durban which was concerned with the students' knowledge on cervical cancer and screening status identified that the vast majority (91.3%) of medical students and 88.0% nursing students were informed about cervical cancer (19). A research at Ghana University provides information that only 38.4%% believe that being sexually active puts a woman in greater risk of contracting cervical cancer, 7.9% know that Human Papilloma virus infection increases cervical cancer risk, 49% know having more than one sex partner smoking 1% and 11.4% know that family history is risk for cervical cancer(20**).** Seventy eight percent of Nursing Staff in Tertiary Care Hospitals in Karachi, Pakistan were aware that infection is one of the causes of cervical cancer, from which 61% were familiar with the name of the infectious agent or HPV and 89% of who were aware of that it is transmitted through sexual intercourse (21). In other study it was identified that most respondents 69.3% did not know how HPV is contracted, with 30.3% reporting sexual activity as the main route (26).

Most frequently identified risk factors for contracting HPV were multiple sexual partners 33.8%, failure to use condoms 26.3%; early sexual activity 18.0% and early puberty**(**26); Similarly Early onset of sexual activity 28.7%, Multiple sexual partners 31.1%, Smoking 18.0%, Family history

of cervical cancer 24.6%, Human Papilloma virus 48.5%, Vulvar warts 9.0 % , having other sexual transmitted diseases and lack of pap smear screening 84% unprotected sex, infections, multiparty, smoking, age, contraception, other promiscuous behavior and poor hygiene were among the most common listed risk factors for cervical cancer by the respondents (14,21,23). Whereas study participants at Malaysia believed that certain types of food, such as deep-fried food, canned food, preserved eggs and salted/dried fish, might trigger the development of cervical cancer (22**).**

Regarding the knowledge concerning prevention of cervical cancer; among participants from South Africa University students, only 1.2% students said cervical cancer cannot be prevented and other 58.6% respond that they did not know that it is preventable (14), likewise other study in Malaysia had identified that most had heard of cervical cancer, but were not aware of how it could be prevented (22). Similarly only 31 (22.6%) of nurse respondents in other study were aware of the HPV vaccine, of these 7 (22.6%) knew that vaccination should be done before sexual debut; while Other methods of prevention for HPV infection such as condom use and being faithful to one partner were identified by 48.2% and 46.7% of the nurses respectively (25). Among study participants of Gynecology out patients at London 80.6% believe that women no longer require Pap screening after menopause and fewer than 40% were aware that using condoms would not eliminate the chance of acquiring HPV (15).

2.3. Knowledge on pap screening

When asked about a cervical cancer screening test 24.6% did not know, however, above half 69.5% knew a Pap smear screening test. Just a few mentioned blood and urine as cervical cancer screening tests, 2.9%. Only 2.9% knew that women should at least screen 3 times in their lifetime from age 30. Almost half 47.8% thought women should screen every 6 months, yearly 20.3%, or every 2 years 7.25%. Some thought women should screen for cervical cancer monthly or every 3 months 21.7% (24). 54% of both interns and nurses were aware that there is a screening test for cervical cancer and out of these 75% knew the correct screening test, which is Pap smear and 13% additionally listed other screening methods (21). In this study majority of the interns and nurses were also aware of the correct time to start to have screening test 37% but very few were aware that screening is recommended after 3 years 10% and not yearly 52%. Most of medical students 33.5% have awareness compared to 28.9% of students from other colleges and faculties similarly; 43.8% of married respondents, compared to 31.6% of singles, were aware of the test (18)**.**Of the 142 respondents that were aware of Pap smear, 105 (73.9%) had correct knowledge of the use of Pap smear as a screening test for cervical cancer and its precursors, in the same way (38%) of the respondents from South Africa university know that Pap smear test is used for detection or prevention of cervical cancer (14, 18) and 64.1% were aware that all sexually active female are entitled for the test. However, (97.1%) of study participant students at Ghana university believe that only women who have had babies should have pap smear test **(**20).

About 26.4% respondents knew that at least three Pap smears should be done in their life time and every 10 years they should repeat the test if test results were normal (14). Most respondents guessed that screening should be conducted every one to two years. One respondent thought that the test must be repeated every six months: Some even thought that the test should only be done

when there were symptoms. Respondents were unsure who should be screened. A few of them correctly identified that women above 18 years of age or those who are sexually active (whichever is earlier) should go for regular Pap smear tests (22). Other study at Tanzania comprising nursing staffs recognized that post menopausal screening was the most widely identified time for screening 40.9% followed by "after sexual debut" 32.1% while 7.3% incorrectly identified before sexual debut as the timing for screening; while 55.5% reported that the test has to be done either once between the ages of 35 and 45 or once every 3 to 5 years (25).

Younger respondents had little knowledge of the role of the Pap smear test in the early detection of cervical cancer. When probed, most of them indicated that they have no understanding that early detection of cervical cancer might save one's life. Several had commented that they would better not know if they had the disease because there was nothing they could do if cervical cancer was diagnosed. Some could not explain what a Pap smear test was, despite saying that they knew about it. Of those who knew of the existence of the Pap smear, their understanding of the purpose of the test was poor. Although many associated the Pap smear test with the detection of cervical cancer, some respondents erroneously thought that the test screens for sexually-transmitted infections, the human immunodeficiency virus or a growth in the uterus. The main misconception was that Pap smear is a diagnostic test used to detect existing cervical cancer and other reproductive health problems. Most women failed to realize that the Pap smear is a cervical screening procedure. None, however, understood the concept of pre-cancerous lesions and cervical abnormalities. Neither did they know that the Pap smear can detect abnormal or precancerous cells and that early detection of such abnormalities could be treated easily and effectively (22).

Above half study sample (60.9%) knew that cancer of the cervix can be prevented from which 36% believe that Pap smear and 66.7% knew that early management can prevent cervical cancer, while 30.4% did not know and 8.7% said it cannot be prevented (24). Other preventive measures stated under this study were; treating sexually transmitted infections, protected sexual intercourse, and surgical removal of the affected part.

2.4. Source of information about cervical cancer and pap smear test.

Mass media, Nursing school, Colleagues, self study, continuing medical education sessions, Clinics, hospitals, private doctors, relatives or friends, community or neighbors, special lectures, conferences, seminars, internet and community health workers were mentioned as main source of information concerning cervical cancer and pap smear screening (21,18,14,24).

2.5. Cervical cancer screening status or pap smear uptake

As identified by study at Ibadan the vast majority (91.7%) had never had Pap smear test in which the non-utilization was similar across the faculties/colleges (91.9% among medical students, 91.6% among other students); religions (92.4% among Christians, 89.5% among Muslims and 100% among others (18). Only 16 (9.8%) participants from South Africa University students had had a Pap smear test (14).

Pap smear non-utilization rate among single respondents (96.8%) was found to be much higher than among the married ones (65.8%) ($x = 69.9$; $p<0.01$) and use rate also varied with the year of study; from 96.2% among first year students to 66.7% among fifth year students. 380 (89.8%) of the sexually active have never had the test while the entire sexually unexposed have never had it (18). A study in which women with average of age 44.8 had participated revealed that 86% of participating women had had at least one Pap test during their life, which generally show that the cumulative coverage with at least one Pap test was lower in women less than 30 years (68%)

compared to older age groups (90%–93%) (P < 0.0001) (30)**.** Only few of the respondents whose age is between 18-29 had tested at some time in their life time when compared to those whose age is more than 30 years. A greater proportion of married women 61.5% reported having been screened for cervical cancer compared to 38.5% for single women (24). Other study also revealed that females ages 18-21 were less likely to have had a Pap test compared to females ages 22-25 (29). However, a significant positive relationship was found between cervical cancer knowledge and number of partners, indicating that as knowledge increased, so did number of partners (16).

2.6. Predictors for pap smear uptake

2.6.1. Perceived susceptibility to cervical cancer of respondents

A study at rural area of South Africa explored that above half of the sample 60.8%, considered themselves to be at risk of cervical cancer, however 39.2% did not (24). Many of the participants perceived susceptibility to cervical cancer to be associated with older age (mean = 3.14; St Dev = 1.0) with 75% either agree or strongly agree (23)**.** A significant positive relationship was found between susceptibility and number of partners, indicating that as perceived susceptibility to contracting HPV/cervical cancer increased, so did the number of partners. A significant positive relationship was found between susceptibility and severity of HPV and cervical cancer, indicating that as perceived susceptibility increased, so did perceived seriousness (16).

Despite a greater percentage perceiving themselves at risk only 18.8% had ever been screened in their lifetime and 81.1% had never been screen (24). There was a significant association between perceived susceptibility and screening for cervical cancer, were in those with high perceived susceptibility 3.2 times more likely to screen for cervical cancer (OR = 3.24; 95% CI: 1.937 – 5.43) than those with low perceived susceptibility (23). Perceived susceptibility responses were

also compared across both groups (“ever screening” versus “never screening”). In overall, those who had screened for cervical cancer before had high susceptibility scores than those who had never screened. Among those with low perceived susceptibility to cervical cancer, 31% had screened for cervical cancer as compared to 59% screening rates among those with high perceived susceptibility to cervical cancer.

2.6.2. Perceived severity of cervical cancer of respondents

Most of the women were sure about the severity of cancer, when the ever screened and the never screened for cervical cancer was compared, it was observed that both groups equally believed that there is effective treatments for cervical cancer, and that cervical cancer makes a woman’s life difficult. Both the screened and the never screened believed that cervical cancer is as serious as other cancers; that it causes infertility and that death from cervical cancer is not rare. 60% of the never screened had low perceived severity while 33% of the screened had high perceived severity to cervical cancer, while it was identified that there was no significant association between perceived severity and screening for cervical cancer ($x^2 = 1.0795$; $p = 0.2988$) (23).

2.6.3. Perceived benefits to doing cervical cancer screening of respondents

Overall, the majority of the participants responded positively to statements about perceived benefits of cervical cancer screening in that 261 (87%) either agreed or strongly agreed that, screening is important to be done, 225 (75%) believed screening could find changes in the cervix before full cancer sets on; 252 (84%) believed when found early cervical cancer can be easily cured (23). In this study about 63% of the never screened had low perceived benefits and 43% of the ever screened had high perceived benefits, but there was no significant (positive) association between perceived benefit and cervical cancer screening

2.6.4. Perceived barriers to seeking cervical cancer screening of respondents

Most participants disagreed or strongly disagree about the statements on perceived barriers (23). Same source of reference it was identified most participants believe that: doing cervical cancer screening is not embarrassing (69%) and doing cervical cancer screening does not suggest someone is having sex (48%); 44% of the ever screened had high perceived barriers and 60% of the never screened has low perceived barriers. There was no significant association between perceived barriers for cervical cancer screening and screening for cervical cancer. When the screened respondents were compared with the never screened, 87 (74%) either strongly disagree or disagree that doing cervical cancer screening suggest a person is having sex as opposed to 76 (42%) of the never screened who responded not sure. Of the 182 of the never screened 101 (55.5%) either strongly disagree or disagree that cervical cancer screening is painful while 80 (67.8%) of those that have screened either strongly disagree or disagree that cervical cancer is painful. Both the screened and the never screened either strongly disagree or disagree that only women who had babies should do cervical cancer screening (88% for the screened versus 74% for the never screened) and that their partners will resist them doing cervical cancer screening (85.4% for the screened versus 81.2% for the never screened). The never screened either strongly agree or agree that lack of information was a barrier to cervical cancer screening (66.3%) as opposed to 51.7% of those that had screened (23).

A research conducted on Ghana college students to assess their knowledge and health belief on cervical cancer screening it was identified that, 40.6% believe that their partner would not allow them to obtain cervical cancer screening, the following barriers were also important; cost (23.2%), not knowing where to go (24.3%), and belief that everyone would think they were sexually active (24.6%) (20). In this study it was Encouraging, that few believed a Pap test

would be painful (9.4%); however none affordability of the cost, not knowing where to get screening, no time to schedule and obtain screening and feeling of embarrassing to expose themselves for screening, were among some of the barriers mentioned for not having the test.

In other researches; lack of awareness about the test, did not know where to have the test, because of the cost, reluctant to have the test, fear of the procedure, fear of the result , fear of exposing their private organ etc were mentioned as some of the barriers for not having the test done. Out of the study participants who have never had Pap smear, most were willing to have it in future while the remaining few were not willing even if safety of the test is guaranteed and the cost taken care of. The reasons for not willing to have pap test included belief is not being at risk of cancer of the cervix, belief that the test is not useful , feeling that the test is cumbersome(18,24,25). Other reason to hinder service utilization of pap smear of the respondents were fear of the procedure 32.4%, cultural religious reason 2.2%, I'm not ill so it's not necessary 26.5%,bad attitude of doctors/nurses 14.7%, discouraged by partner or others 0.7%, no access to a clinic where Pap smear is done 15.4%, other reasons 8.1% (14). There was also believe that gender of the physician will affect the patient decision to do Pap smear test so the service utilization. Some of the respondents suggested that female not prefer if the physician from opposite sex to observe or examine their sexual parts and in Malaysian culture the women feel shy to be examined her private parts by male physician." Most of the respondents suggested that pap smear has to be recommended because it is used to detect cervical cancer at early stage, used to identify abnormal cells, prevent from getting cervical cancer, for those who have family history (27). Very few of female university students have history of pap screening test and The common barriers listed by these group include; pap smear test will make them worry (the most common reason), no encouragement or information from healthcare workers, no encouragement

from the partner, did not consider it necessary to have Pap smear as yet, did not know about it, afraid of the procedure (19,32). A study conducted in South Africa had identified that most medical students have good attitude towards pap screening test compared to nursing students (19).

Lack of belief that the purpose of screening is to diagnose cancer (p=.002), the belief that the Pap test is painful (p=.001), and the belief that if a woman is a virgin, Pap test will take away her virginity (p=.001) were negatively associated with ever screening for cervical cancer (20).

CONCEPTUAL FRAME WORK

The purpose of this study was to assess female Health Science students' engagement in risky sexual behavior knowledge on cervical cancer and predictors for their Pap smear uptake. The conceptual frame work for this study was generated based on review of studies which identified variables commonly influencing most females' knowledge on cervical cancer and Pap smear screening test; whereas Health Belief Model (HBM) was preferred to identify the predictors for Pap smear uptake among these females. According to this model, individuals are more likely to perform health-related behaviors if they perceive an illness as being serious, feel that there is a high risk of contracting the disease, believe the health action will result in a positive outcome that will out weight any barriers encountered, and can use cues to action to trigger the process and take action.

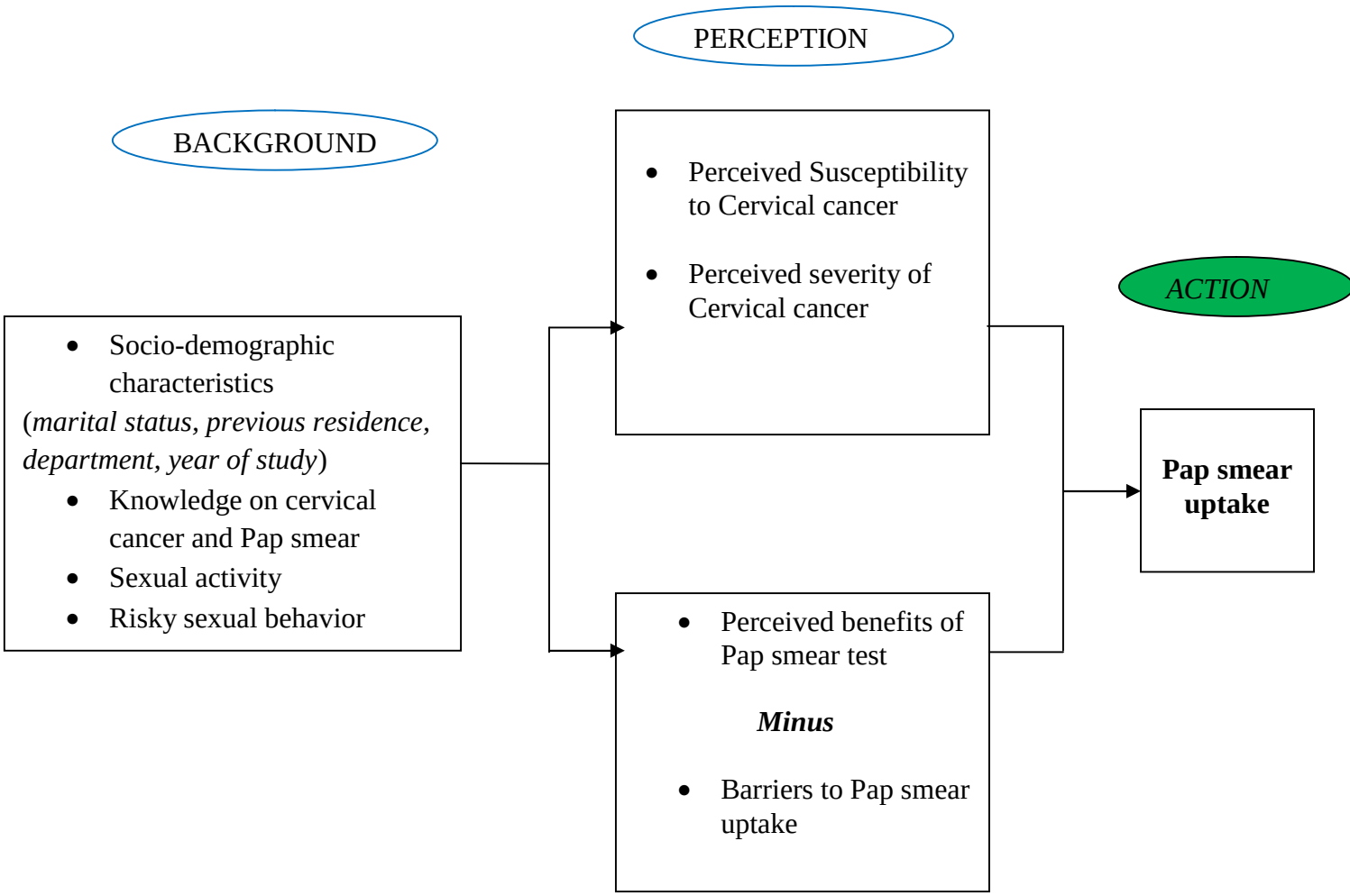

Figure 1: Schematic representation of conceptual frame work adopted from Health Belief Model (33)

CHAPTER THREE: OBJECTIVE

3.1. General objective:

To assess risky sexual behavior, knowledge on cervical cancer and predictors for Pap smear uptake among Addis Ababa University Health Science College female students, From June 2012 to December 2012.

3.2. Specific objectives:

- To assess the students' engagement in risky sexual behavior predisposing to cervical cancer
- To determine the students' level of knowledge regarding cervical cancer and Pap smear screening test
- To identify pap smear uptake status of the students
- To identify predictors for Pap smear uptake status of the students

CHAPTER FOUR: METHODS AND MATERIALS

This part explains the methods that were used in the entire study. The methods and materials looks at study area, study design, target and study populations, sampling techniques, data collection, data management and analysis and ethical considerations.

4.1. Study Area

This study was conducted at Addis Ababa University College of Health Science. Addis Ababa is the capital city of Ethiopia and seat of African Union & Economic Commission for Africa. The population size of Addis Ababa is over 3 million with annual growth rate of 2.1. The city is divided into ten sub cities and 99 Kebeles (Lowest level administrative unit in the city). It is located between 8055' and 9005' North Latitude and between 38040' and 38050' East Longitude and the total Land area is 54,000 hectares. Its average elevation is 2,500 meters above sea level, and hence has a fairly favorable climate and moderate weather conditions. In Addis Ababa there are many governmental and non-governmental higher educational institutions, hospital and health centers; some of which are serving as educational institution for medical and health science students. Addis Ababa University is the oldest higher education comprising different colleges with number of faculties and departments. Health Science College is one of colleges of the university comprising total of 382 during the study period. Therefore this study was conducted on female students of Health Science College of the University. These students mainly use most of the governmental hospitals in the city for practical attachments. Some of the hospitals used for practical attachments are main referral hospitals of the country providing sophisticated health services accordingly. On top of this, cervical cancer is one of the first top

three cancer admissions in Tikur Anbesa hospital. Therefore, because of their chance of exposure to the case and diagnostive methods during practical sessions, Addis Ababa University Health science students are anticipated to be knowledgeable concerning cervical and Pap smear screening test and even to utilize the service than Health Science students at other Universities. So any gap identified based on this study will be a good indicative for guesstimating Pap smear knowledge level and service utilization status among this domain of population segment. Therefore this study was conducted on Addis Ababa University Health Science College female students.

4.2. Study design and period

The study employed a cross-sectional quantitative design from June 2012 to December 2012 so as to assess knowledge level on cervical cancer and to determine predictors for pap smear uptake status among; Addis Ababa University Health Science College female students.

4.3. Source and Study population

Health Science College female students were the source population and the study population comprised of selected regular female students enrolled in Health Science College of Addis Ababa University since the academic year of 2001 to 2004.E.C.

4.4. Inclusion criteria

- Undergraduate regular female students
- Those willing to participate
- Those available at class during data collection

4.5. Exclusion criteria

- Students attending in non-regular program
- Disinclined students (unwilling students)

4.6. Sample size determination

The sample size for this cross-sectional survey was determined using a single population proportion formula.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

The minimum sample size required for the study was estimated to be 384 using the above formula where, **n** is the sample size, **Z** is the standard normal deviate, set at 1.96 (for 95% confidence level), **d** is the desired degree of accuracy (taken as 0.05) and **P** is the estimate of the proportion of the target population who have awareness on cervical cancer and Pap smear (since relevant data to this study's population was not obtained, P value had taken as 50%).

Correction formula was used as the total number of Health Science college female students was less than 10,000.

$$n_1 = \frac{n}{1 + {}^{n}/_{N}}$$

Therefore, the corrected sample size was 193. Where $\mathbf{n_1}$ is final sample size, **n** is the initial sample size and **N** is the total Number of Addis Ababa University Health science college female students. Adjustment for a 10% rate of non-responses and incomplete or inconsistent responses gave a final sample size of **213.**

4.7. Sampling techniques and procedures

The college was intended to be chosen purposively because the students were anticipated to have better exposure to the case and dignostive procedures, so would be with better knowledge on cervical cancer and Pap smear screening test and even utilize the service than health science students at other Universities. The number of students required from each department and year of study of the respective departments was determined using the Probability Proportionat to Size Sampling technique (PPS). Finally the Simple Random Sampling technique (SRS) was used to select sample students at their classes at the respective campuses of the college. Schematic representation of the sampling procedure is shown in (Figure2).

Table 1: Number of students determined using probability proportional to size of the departments and year of study, June 2012 (N=382)

Department	**No of students to be sampled**	**No to be sampled vs total number, by year of study of the students.**				**Total no of students in each department**
		Year I	**Year II**	**Year III**	**Year IV**	
Anesthesia	34	12(n=23)	8(n=14)	14(n=26)	No 4th year	63
Medical Laboratory Technology	36	11(n=19)	10(n=16)	11(n=19)	4(n=6)	60
Midwifery	57	19(n=34)	14(n=25)	15(n=28)	9(n=17)	104
Nursing	64	28(n=50)	15(n=28)	12(n=22)	9(n=16)	116
Radiology	22	7(n=13)	6(n=10)	8(n=15)	1(n=1)	39
Total	213					382

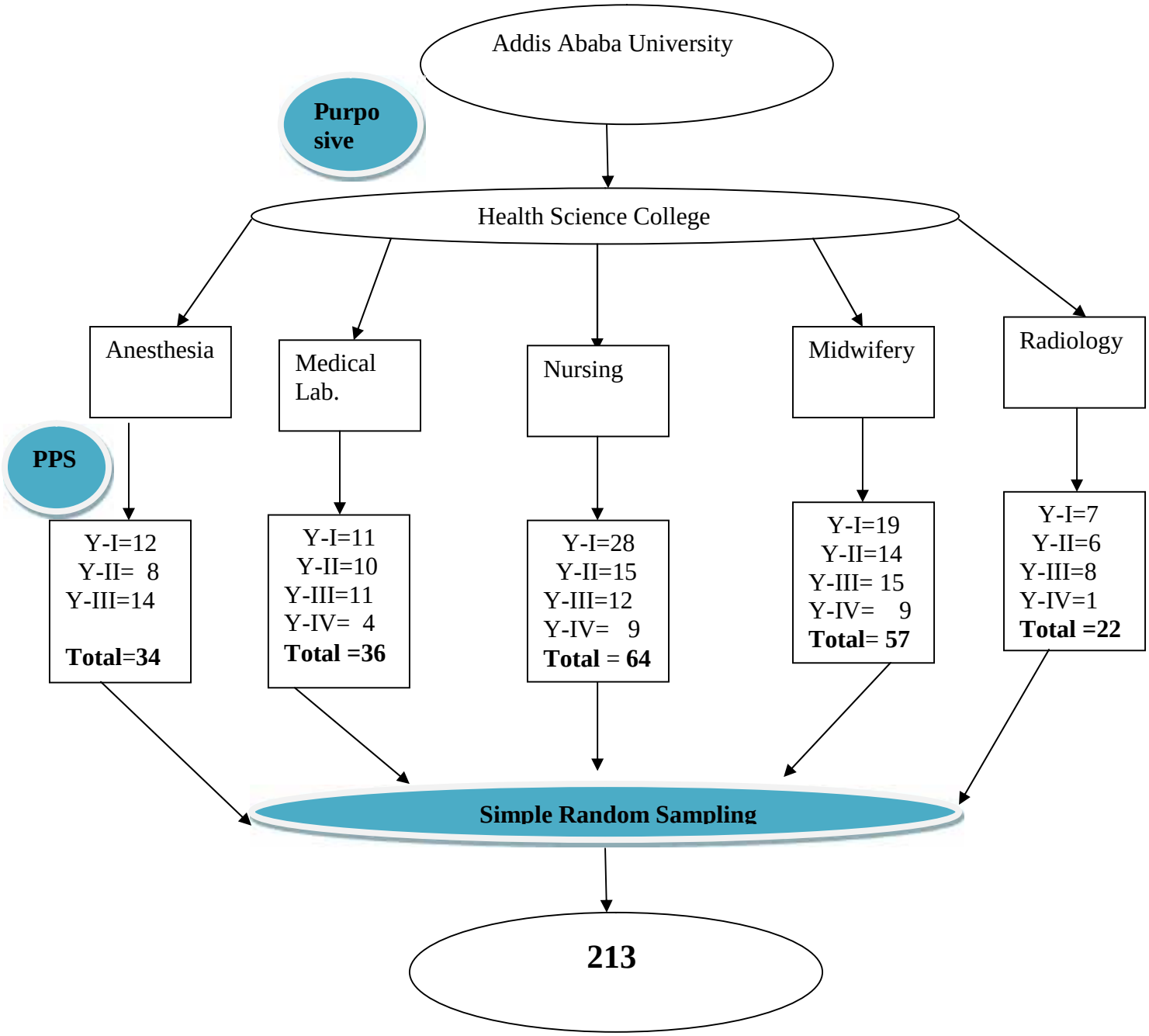

Figure 2: Schematic representation of Sampling Procedure

4.8. Data collection instrument and technique

The questionnaire was adopted from previous studies reviewing literatures relevant to problems under the study and to include all the variables that address objectives of the study. As far as the respondents were University Health Science students, with the intention that they can understand the language and the medical terms used; the questionnaire was used in English version. The questions were organized in to four sections (socio-demographic characteristics, the students' engagement in risky behavioral practices, the students' knowledge on cervical cancer and Pap smear, and predictors for Pap smear uptake). Before conducting the actual study, the questionnaire was pre tested among 20 Addis Ababa University School of Medicine female students (5 female students from each year of study, i.e. year I to year IV), to revise its clarity, order of question, skip patterns and its consistency. Based on the pre test feedback, some questions were rephrased, amended and the final questionnaire was prepared. One Bsc and three diploma nurses were recruited and trained to serve as supervisor and data collectors respectively. Finally facilitator guided self administered data collection was held on the study subjects using this anonymous questionnaire. Questions designed to assess the students' knowledge level and perception (perceive susceptibility, perceived severity, perceived benefit and perceived barriers; the constituents of health belief model) were scored to be "1" for correct and "0" for incorrect answers. The students' knowledge level was scaled based on quartile scaling method and categorized as poor (0-5 or ≤ 25%), fair (6-10 or 26-50%), good (11-15 or 51-75%) and excellent (16-20 or 76-100%). The respondents' perception (using Health Belief Model constituents) was rated as **"**low" for those who had given correct answer to <75% and **"**high**"** for those who had given correct answer to ≥75% of questions constructed to assess each constituent..

4.9. Study variables

4.9.1. Dependant variables

- Knowledge level on cervical cancer and Pap smear
- Pap smear uptake status
- Risky sexual behavior

4.9.2. Independent variables

- Socio-demographic Variables: age, marital status, previous residence, year of study, sexual activity
- Constituents of health belief model:
    - ✓ Perceived susceptibility to cervical cancer
    - ✓ Perceived severity of cervical cancer
    - ✓ Perceived benefit of pap screening test
    - ✓ Perceived barriers for pap smear uptake.

4.10. Operational definition for variables

- **Risky sexual behavior =** Early initiation of sexual practice, having multiple sexual partner, unprotected sex, inconsistent use of condom
    - ✓ **Early initiation of sexual practice** =Sexual act which is commenced at age less or equal to 15 years.
    - ✓ **Multiple Sexual partners=** Having 2 or more sexual partners
    - ✓ **Unprotected Sex**= Having sex with partner of unknown HIV and other STI status without using condom.
- **Poor level of knowledge -**If student's knowledge score 0-5 (0-25%) for questions about cervical cancer and Pap smear
- **Fair level of knowledge -** If student's knowledge score 6-10 (26-50%) for questions about cervical cancer and Pap smear
- **Good level of knowledge -** If student's knowledge score 11-15 (51-75%) for questions about cervical cancer and Pap smear
- **Excellent level of knowledge-** If student's knowledge score 16-20 (76-100%) for questions about cervical cancer and Pap smear
- **Pap smear uptake** = The action of making use of pap smear screening test service to be checked for HPV infection and precancerous cells
- **Perceived susceptibility**=The views of the participants regarding their risk of having cervical cancer
- **Perceived severity**= How serious cervical cancer is viewed by these students.
- **Perceived benefits=** Viewed as the gain that doing cervical cancer screening will result to.

- **Perceived barriers=** Refers to obstacles that the students perceive can prevent those eligible for cervical cancer screening from participating in the available cervical cancer screening programs.

4.11. Data quality control

The data was collected under day to day supervision of trained supervisor and with technical assistance of the principal investigator; so that each questionnaire was checked for completeness and consistency. In this order, eleven questionnaires were excluded for incompleteness. On top of this double data entry was performed.

4.12. Data processing and analysis

Collected data was edited and checked manually for missing. After entering to EpiInfo version 3.5.1 the data was cleaned and coded using Microsoft Excel spreadsheet and transported to SPSS version 16 for analysis. The relationship between selected independent variables and the respondents' knowledge level and Pap smear uptake were explored using bivariate and multivariate analysis. Chi-square (χ^2) was used to explore factors associated with knowledge level and Pap smear uptake as well as behavioral practice under the intermediate variables; while Binary logistic regression was used to investigate the major predictors for Pap smear uptake to provide odds ratio [OR] and 95% confidence intervals [CI]. Health Belief Model constituents and Knowledge level were used in binary logistic regression analysis. The crude and adjusted analyses were employed using bivariate logistic and multivariate logistic regression respectively. The level of statistical significance was set at 95% CI and p-value < 0.05.

4.13. Ethical consideration

Ethical clearance was obtained from the Faculty of Medicine Research and Publication Institution and Review Board Committee, Addis Ababa University. A formal letter was written from department of Nursing and Midwifery to respective departments for cooperation. Verbal and written consents was obtained from the study subjects after explaining the study objectives, procedures and their right to refuse to participate in the study any time they want. To assure confidentiality of the data the students did not write their name and ID number. For this purpose, a one-page consent letter was attached to the cover-page of each questionnaire stating about the general purpose of the study and issues of confidentiality which was discussed by data collectors before proceeding to fill the questionnaire.

4.14. Dissemination of the Study

This study will serve as resource material for researchers, managers, policy makers, etc. To achieve these, the finalized copy of this study will be distributed to school nursing and midwifery, Addis Ababa University. Besides, it will be given to NGOS working around reproductive and maternal health in the city. The study will be presented on available forums and workshops related to reproductive health issues.

CHAPTER FIVE: RESULT

This section of the survey covers findings on Socio-demographic characteristic, health related behavioral practices, knowledge level of cervical cancer and Pap smear, Pap smear uptake status, factors influencing knowledge level and predictors for Pap smear uptake. Out of the total 213 distributed questionnaires, 11 were excluded because of incompleteness making the response rate 94.8%. Therefore the data was obtained from 202 female students selected proportionally from each departments and the analysis was done based on this number of respondents.

5.1. Socio-demographic characteristic

Table 2: Socio-demographic characteristic of Addis Ababa University Health Science College Female Students, June 2012 (n=202)

Variable	Frequency (n=202)	Percentage (%)
Age in year		
<20	38	18.81
20-25	159	78.71
26-30	5	2.48
Marital status		
Single	187	92.60
Married	15	7.40
Ethnicity		
Oromo	38	18.83
Amhara	98	48.51
Tigre	29	14.40
Gurage	25	12.42
Adere	1	0.54
Others*	11	5.43

Religion		
Orthodox	132	65.3
Protestant	39	19.3
Muslim	26	12.9
Catholic	2	1.0
Others**	3	1.5
Previous residence		
Urban	157	77.7
Rural	45	22.3
Department		
Nursing	59	29.2
Midwifery	54	26.7
Medical laboratory	34	16.8
Anesthiology	33	16.3
Radiology	22	10.9
Year of study		
1st year	73	36.1
2nd year	51	25.2
3rd year	59	29.2
4th year	19	9.4

Others*-Gamo, Hadiya, Kembata, Silte, Welayita, ; Others**-Jehova

Most of the respondents were Nursing students 59(29.9%) and the least were Radiology students 22(10.9%). Majority of them 73(36.14%) were selected from 1st year and the least number 19(4.9%) of students were from 4th year. The mean age of participants was 21.08 years with standard deviation of 1.94. Age of the majority students was in the range of 20-25 years with mode of 20 years. The youngest and oldest of the participants were 17 and 28 years old respectively. Majority of the participants were single 187(92.6%) and none of them reported that they were widowed or separated. Large number of the respondents were ethnically Amhara 98(48.5%) followed by Oromo 38(18.8%) and Tigre (see Table 2). More than half of the respondents were reported to be Orthodox Christian 132(65.3%) followed by Protestant 39(19.3%) and Muslim 26(12.87%). One hundred fifty seven (77.7%) were residing at urban area before joining this University and only 45(22.3%) were originated from rural area.

5.2. Sexual behavior of the respondents

Table 3: Sexual behavior of Addis Ababa University Health Science college female students, June 2012 (n=202)

Behavioral practice	Frequency	Percentage
Have sexual partner (n=202)		
Yes	58	28.7
No	144	71.3
Number of partner (n=58)		
One	41	70.69
2 and more	17	29.31
Age at first sex(age in year) (n=58)		
<15	17	29.31
>15	41	70.69
Condom use (n=58)		
Yes	12	20.69
No	46	79.31
Habit of condom use (n=12)		
Always during sexual intercourse	4	33.3

Some times during sexual intercourse	8	66.7
Given birth (n=58)		
Yes	4	6.9
No	54	93.1

Fifty eight (28.71%) of the respondents were sexually active, while the mean age at first sexual intercourse was 17.7 with standard deviation of 3.06 years and the age at sexual debut ranged from 13-25years. Out of the total sexually active respondents, 12 (20.69%) had commenced intercourse before the age of 15 years and 17 (29.31%) students had sex with two or more partners. Only 12(20.70%) of sexually active respondents were using condoms, where very few of them use always during sexual intercourse 4(6.9%) and 46(79.31) had never used condom (Table 3). By cross-tabulating some socio-demographic characteristics with behavioral practice of the respondents it was identified that there was no significant association among these variables. Similarly the cross-tabulation of condom use with number of partners of the respondents revealed that they were not statistically associated (x^2 =3.93; df=2; p=0.14) and their condom using habit varied irrespective of the number of persons they had sex with.

5.3. Knowledge level of the respondents on cervical cancer and pap smear screening test

A total of 20 questions were asked to assess knowledge level of the participants. The proportion of correct responses shows that certain questions were answered better than the others. One

hundred ten respondents (54.5%) had correctly defined cervical cancer as cancer of opening of the uterus, followed by 30(14.5%) students who defined that it is a cancer of ovary, 10 (5%) respondents reported that they don't the definition; while the rest defined as cancer of vagina or fallopian tube. Hundred sixteen (57.4%) were familiar with the name of the virus associated with cervical precancerous cell (HPV), of which 84(72.4%) reported that it can be transmitted through sexual intercourse. However, 117 (57.9%) of the total respondents were aware that the virus associated with cervical cancer (HPV) most commonly transmitted through sexual intercourse and the rest reported maternal to child transmission, blood transfusion, inanimate objects as common modes of transmission for HPV. Less than half 81 (40%) respond that cervical cancer can be prevented by condom utilization and 79(39%) reported that regular Pap smear test contributes on cervical cancer prevention and control. More than half of the students 118(58.4%) were aware that cervical cancer is screened using Pap smear test, where as the rest answered that cervical cancer is screened by other methods like x-ray, blood test and urine test 84(41.58%). Out of the total 118, eighty nine (75.4%) were aware that any sexually active female is entitled for the test while 20(16.9%) respond that pap smear test is necessary only for women over age of 30 years and the rest 9(7.6%) suggested that only mothers with many children are entitled for the test. Regarding the recommended frequency of Pap smear test 40(34%) reported a woman have to be tested at least every 3-5 years from age 20 years. The respondents' knowledge concerning risk factors predisposing to cervical cancer is shown in the (Figure 3).

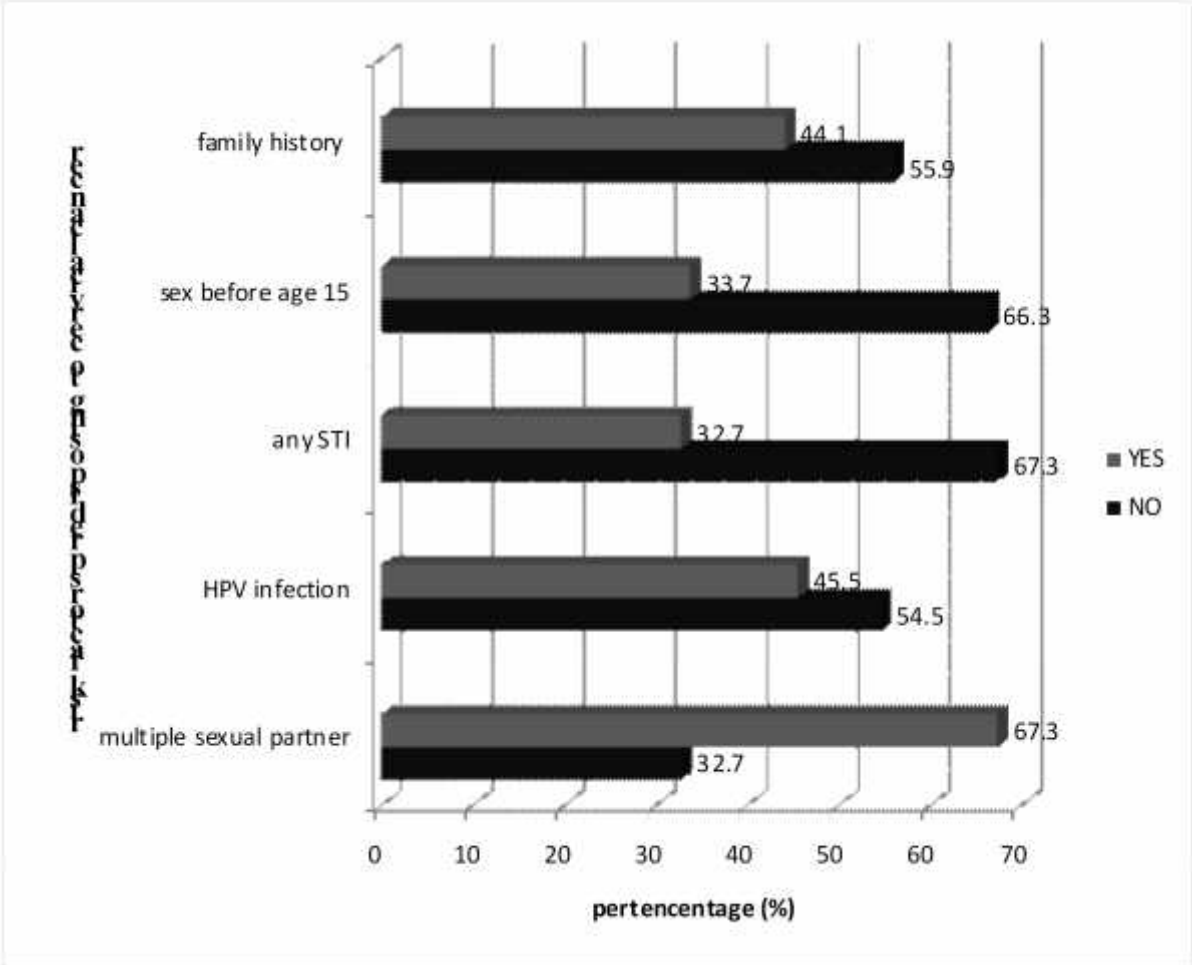

Figure 3:Awareness about risk factors that predispose to cervical cancer among Addis Ababa university health science college female students, June 2012, (n=202).

Knowledge assessing variables were scored to be “1” for correct and “0” for incorrect answers. The students’ knowledge level was scaled based on quartile scaling method and categorized as poor (0-5/20 or ≤ 25%), fair (6-10/20 or 26-50%), good (11-15/20 or 51-75%) and excellent (16-20/20 or 76-100%). Based on this aggregate numerical scoring applied to the 20 knowledge assessing questions; two (1%) students were alright and 11(5.4%) did answer none of the question correctly. The mean knowledge score was 9.01 with standard deviation 4.71. The range of scores went zero (none right) to 20(all right) with mode of 13. The result of assessment of the students’ knowledge level based on the category is shown in (Figure 4)

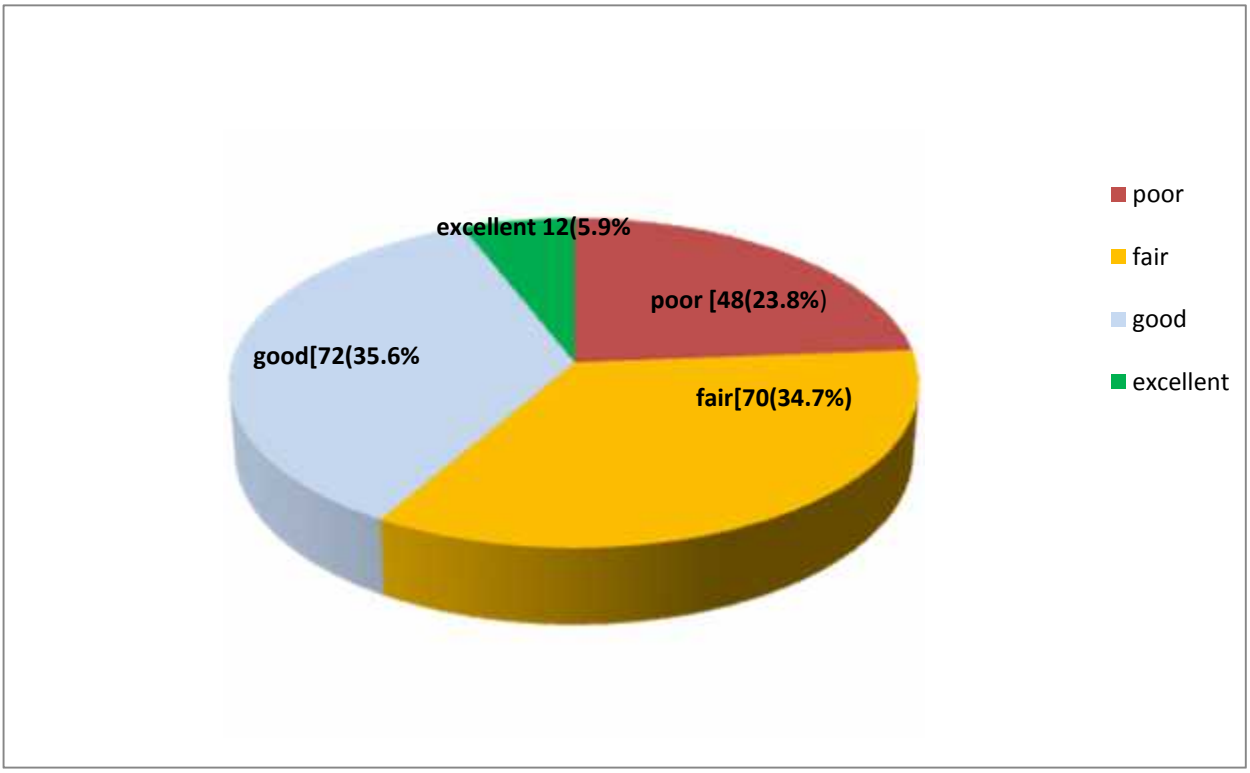

Figure 4: Distribution of knowledge level on cervical cancer and pap smear among AAU Health Science College female students, June 2012 (n=202).

Generally, more than half of the students 118(58.41%) were with poor and fair knowledge in that they had given correct answer to 50% of knowledge assessing questions; when compared with those who had good or excellent knowledge 84(41.58%) concerning cervical cancer and pap smear. Very few of the respondents 12(5.9%) correctly answered, ≥75% of the questions.

Table 4: Knowledge level on cervical cancer, with socio demographic characteristic and sexual behavior of AAU Health Science College female students, June 2012 (n=202)

Characteristic	Level of knowledge on cervical cancer and pap smear				x^2	df	P-value
	Poor n (%)	Fair n (%)	Good n (%)	Excellent n (%)			
Marital status							
Single	46(24.6)	67(35.8)	65(34.8)	9(4.8)			
Married	2(13.3)	3(20.0)	7(46.7)	3(20.0)	**7.69**	**3**	**0.053**
Place of origin							
Urban	34(21.7)	53(33.8)	62(39.5)	8(5.1)			
Rural	14(31.1)	17(37.8)	10(22.2)	4(8.9)	**5.25**	**3**	**0.154**

Department							
Nursing	17(28.8)	19(32.2)	19(32.2)	4(6.8)			
Midwifery	16(29.6)	12(22.2)	19(35.2)	7(13.0)			
Medical laboratory	8(23.5)	13(38.2)	13(38.2)	0	**18.68**	**12**	**0.096**
Anesthiology	5(15.2)	15(45.5)	13(39.4)	0			
Radiology	2(9.1)	11(50)	8(36.4)	1(4.5)			
Year of study							
1st year							
2nd year	31(42.5)	32(43.8)	8(11.0)	2(2.7)			
3rd year	14(27.5)	19(37.3)	18(35.3)	0(0)			
4th year	3(5.1)	16(27.1)	33(55.9)	7(11.9)	**64.91**	**9**	**0.000⋆⋆**
	0(0)	3(15.8)	13(68.4)	3(15.8)			
Hadsexual intercourse							
No	38(26.4)	53(36.8)	48(33.3)	5(3.5)			

Yes	10(17.2)	17(29.3)	24(41.4)	7(12.1)	**8.02**	**3**	**0.046⋆**

⋆- Statistically significant at P < 0.05; CI of 95%

⋆⋆- Statistically significant at P < 0.01; CI of 95%

Level of knowledge was cross-tabulated with some of the socio demographic characteristics and behavioral practice of the respondents. Based on this analysis, knowledge level was significantly associated with year of study [x^2=64.907; P<0.001] and sexual activity of the students [x^2=8.021; P=0.046**];** at (P < 0.05 and CI=95%).The students' knowledge level concerning cervical cancer and Pap smear screening test increased in line with their year of study. Likewise sexually active students were with better knowledge 31(53.45%) compared to those who did not have sex with any one 53(36.81%).

5.4. Source of information about cervical cancer and pap smear

Mass media was reported as source of information by majority of the students 95(47%) followed by class lecture 81(40.1%), and only about one fourth of the students reported self study 60 (29%), and internet 58(28%) as their source of information concerning cervical cancer and pap smear test. The source of information for the majorities of 1st and 2nd year students was mass media, where as that of 3rd and 4th year students was class lecture.

5.5. Pap smear uptake status

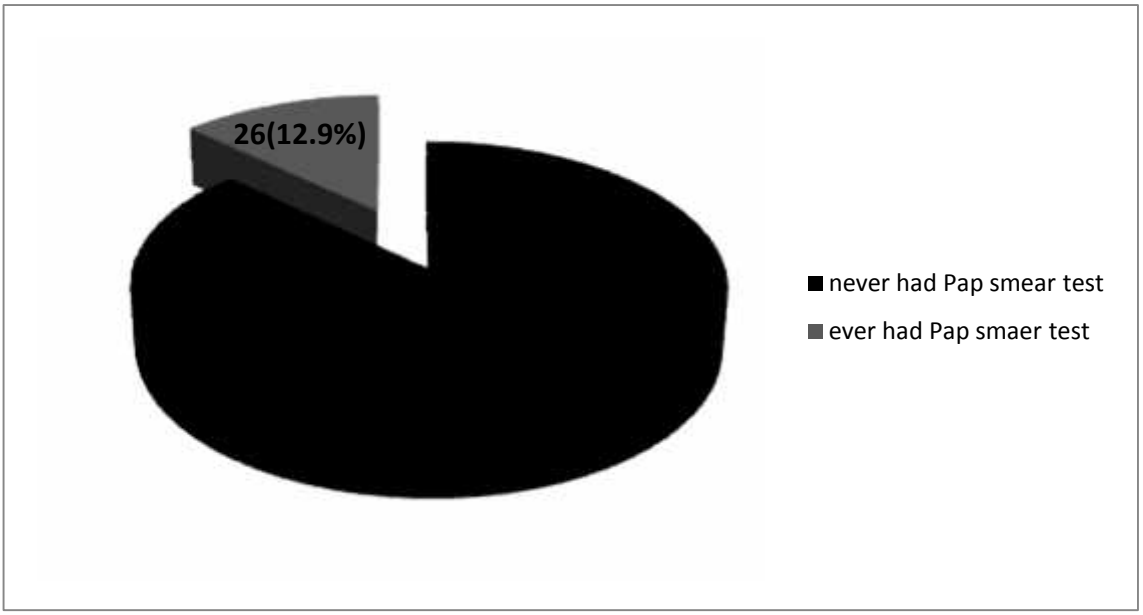

Figure 5: Distribution of cervical cancer screening status among AAU Health Science College female students, June 2012 (n= 202).

Out of twenty six respondents who had pap smear screening test, 21(80.77%) had the test within the past 3 year,1(3.85%) during the past 5 years and 4(15.38%) do not remember the last time of their pap smear test. Twenty four (92.32%)of those who have history of pap smear uptake were planning to continue with having pap smear test, where as only 106 (52.5%) of those who had no history of pap smear uptake had planned to have the test in the future.

Table 5: Bivaraite analysis of Pap smear uptake status with socio-demographic characteristics and sexual behavior of AAU Health Science College female students, 2012 (n=202).

Characteristic		Had Pap smear test				
		Yes	No			
		n(%)	n(%)	x^2	*df*	*P-value*
Total	**26**	**26(12.9)**	**176(87.1)**			
Marital status						
Single		20(76.92)	167(94.88)	**10.63**	**1**	**0.001⋆⋆**
Married		6(23.07)	9 (5.11)			

Previous					
Residence					
Urban	21(80.77)	136(77.27)			
Rural	5(19.23)	40(22.73)	**0.16**	**1**	**0.689**
Department					
Midwifery	12(46.15)	42(23.86)			
Nursing	5(19.23)	54(30.68)			
MedicalLab.	4(15.38)	30(17.05)	**6.64**	**4**	**0.156**
Anestiology	4(15.38)	29(16.47)			
Radiology	1(3.85)	21(11.93)			

Level of study					
1st year	2(7.7)	71(40.34)			
2nd year	2(7.7)	49(27.84)			
3rd year	14(53.84)	45(25.6)	**31.01**	**3**	**0.000⋆⋆**
4th year	8(30.76)	11(6.25)			
Have sexual partner					
Yes	18(69.23)	40(22.73)	**23.93**	**1**	**0.000⋆⋆**
No	8(30.77)	136(72.27)			
Number of sex partner					
One	10(24.4)	32(75.6)			
2 or more	9(52.9)	8(47.1)	**2.86**	**1**	**0.090**

Condom use					
Yes	2(16.7)	10(83.3)	**1.46**	**1**	**0.227**
No	16(34.8)	30(65.2)			

⋆⋆- Statistically significant at P < 0.01; CI of 95%

Pap uptake status of the respondents was significantly associated with marital status [x^2=10.633; P=0.001] and sexual activity [x^2=31.006; P=0.046] at [P<0.05 and CI of 95%] (Table 5). Relatively large number of 3rd and 4th year respondents were identified to had Pap smear uptake history (Figure 6)

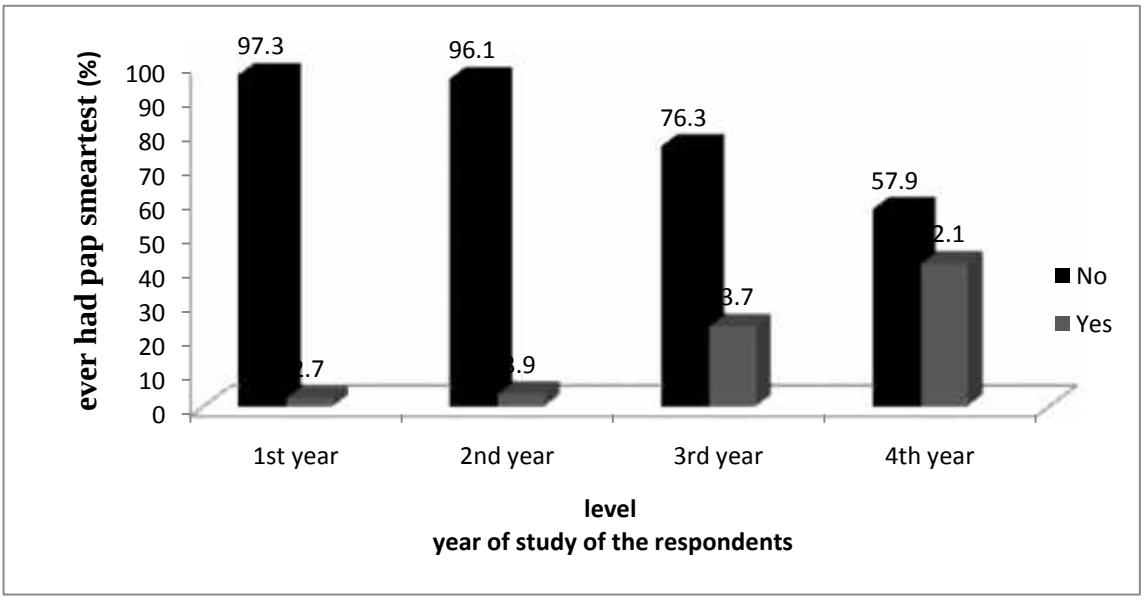

Figure 6: Distribution of Pap smear uptake status by year of study, among AAU health science college female students, June 2012 (n= 202).

5.6. Predictors for pap uptake status of the respondents using health belief model constructs and students' knowledge level.

According to HBM, individuals are more likely to perform health-related behaviors if they perceive an illness as being serious, feel that there is a high risk of contracting the disease, believe that the health action will result in a positive outcome that will outweigh any barriers encountered, and can use cues to action to trigger the process and take action. Additionally the level of knowledge towards a given action also influences individual's health service utilization. Therefore, the health belief model constituents and knowledge level of the respondents were taken to be predictors for Pap smear uptake status. These constituents include perceived susceptibility to contract cervical cancer, perceived severity of cervical cancer, perceived benefit of having pap smear screening test and perceived barriers to have pap smear screening test. The respondents' perception was considered as **"low**" if they had given correct answer to <75% and **"high"** ≥75% of questions constructed to assess each constructs.

5.6.1. Perceived susceptibility

Even though the level of their perceived susceptible to acquiring HPV and contracting cervical cancer varies, all of the respondents were aware that they are susceptible to cervical cancer as they gave at least two correct answers to susceptibility questions. Many of the respondents 148(73.3%) believe that they could have precancerous lesion and 87**(**43%) were not worried about cervical cancer because it is common in aged women, where as very few 13(6.4%) believe that their chance of getting HPV is high. The overall perceived susceptibility of most respondents was low 174(86.1%) where as 28(13.9%) students were with high perceived susceptibility. Comparison of ever had Pap smear screening test with those never had Pap screening test demonstrated that 158 (91%) respondents who never had the test perceive their

susceptibility to cervical cancer to be low and of the 26(12.9%) ever screened respondents, 10(36%) perceived their susceptibility to be high.

5.6.2. Perceived severity

Almost all 200 (99%) of the respondents had awareness on the severity of cervical cancer except 2(1%) respondents who reported that cervical cancer is neither sever nor can be prevented and cured. Two respondents answered none of the questions correctly and 14(6.9%) had answered all correctly. Most students' believe was that cervical cancer can results in infertility 80(39.6%) and can make women's life difficult 70(34.7%). Generally, the overall perceived severity of most respondents 196(97.0%) was low where as very few 6(3.0%) were with high perceived severity. When those ever had Pap smear screening test and never had pap smear screening were grouped in to high and low perceived severity based on the scores, 155 (88%)of the never screened had low perceived severity while 13(50%) of the ever screened had high perceived severity to cervical cancer.

5.6.3. Perceived benefit

More than half of the respondents believe that having pap smear tests is important in early detection 147(72.8%), early treatment 142(70.3%) and controlling of cervical cancer 103(51%). But the overall believe of the students shows that 127(62.9%) have low perception on the health benefit of pap smear test and 75(37.1%) have high perceived benefit of having pap smear test. Out of the 176 respondents who had no pap uptake history, 158(90%) were with low perceived benefit of pap smear while 4(17 %) of those who had history of pap smear uptake perceive the benefit of pap smear screening test to be high.

5.6.4. Perceived barriers

Lack of information about cervical cancer screening procedures 159(78.7%), being worried if would be found to have early signs of cancer 128(63.4%), not knowing where to go for cervical cancer screening 110(54.5%) and believing that Pap smear is unnecessary if there is no signs and symptoms 96(47.5%) were reported by majority of the respondents as barriers for having Pap smear screening tests. Overall, believe of the respondents shows that very few of them 6(3.0%) had high perception on the barriers for having pap smear test and the rest 196(97.0%) have low perceived barriers. None of the respondents who had ever pap smear test have high perceived barriers and 153(87 %) of the never screened had low perceived barriers for having pap smear test. The statistical test of relationship of socio demographic characteristic and behavioral practice with each constituents of health belief model revealed that susceptibility score (high, low) had significant relationship with year of study [x^2=9.608; p=0.022] and sexual activity [x^2=7.196; p=0.007]. The proportion of respondents' high perceived susceptibility to contracting cervical cancer increases with their year of study, where as that of those with low perceived susceptibility decrease as the study year goes up. Out of all sexually active respondents, 14(24%) were with high perceived susceptibility to cervical cancer while 120(90%) of non-sexually active respondents were with low perceived susceptibility. But socio-demographic characteristics and behavioral practice of the respondents were not significant association with perceived severity, perceived benefit and perceived barriers of the respondents.

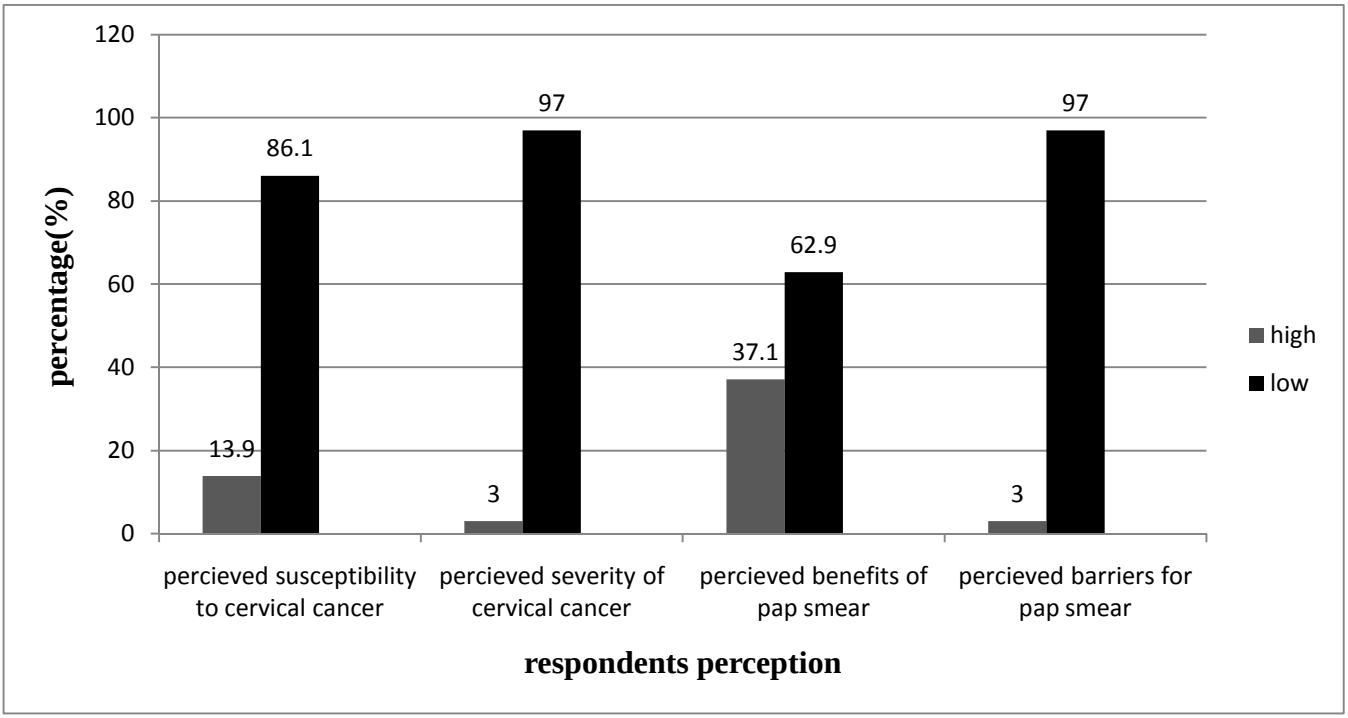

Figure 7: Summary of AAU Health Science College female students' perception on cervical cancer and pap smear test, June 2012 (n=202).

Table 6: Bivariate and Multivariate Binary Logistic Regression analysis of predictors for Pap smear uptake status among AAU Health Science College female students, June 2012 (n=202).

Variables	Pap smear uptake status			
	No n(%)	**Yes n(%)**	**Crude OR (95%CI)**	**Adjusted OR (95%CI)**
Knowledge level				
Poor	47(97.92)	1(2.08)	1	1
Fair	65(92.86)	5(7.14)	3.615 (0.409, 31.969)	3.125 (0.347, 28.144)
Good	55(76.4)	17(23.6)	**14.527 (1.863, 113.30)⋆**	**10.326 (1.290,82.64)⋆**
Excellent	9(75)	3(25)	**15.667 (1.460, 168.07)** ⋆	5.886 (0.447,77.445)
Perceived susceptibility				
Low	158(90.8)	16(9.2)	1	1
High	18(64.29)	10(35.71)	**5.486 (2.168, 13.88)⋆**	**3.522 (1.260,9.850)⋆**
Perceived severity				

Low	173(88.27)	23(11.73)	1	1
High	3(50)	3(50)	**7.522 (1.433, 39.5)⋆**	2.474(0.370,16.552)
Perceived benefit				
Low	114(89.76)	13(10.24)	1	1
High	62(82.7)	13(17.3)	1.839(0.803,4.211)	1.528(0.616, 3.795)

⋆=Statistically significant at P < 0.05; CI of 95%; **1=reference**

Bivariate and Multivariate Logistic regression analysis were employed to identify predictors for Pap smear uptake status of the respondents. Health belief model constructs and knowledge level of the respondents were used as independent variables (Table 7). On crude analysis using bivariate logistic regression; Pap smear uptake was significantly associated with having good knowledge [Crude OR= 14.53(95% CI; 1.863, 113.301)] and excellent knowledge [Crude OR= 15.67(95% CI; 1.460, 168.074)], compared with having poor knowledge on cervical cancer and Pap smear screening test. Similarly significant association was found between pap smear uptake and having high perceived susceptibility [Crude OR= 5.49 (95% CI; 2.168, 13.883)] compared with low perceived susceptibility and high perceived severity compared with low perceived severity of the respondents [Crude OR= 7.52(95% CI;1.433, 39.495)]. However, in adjusted analysis Pap smear uptake was significantly associated with good knowledge level [Adjusted OR=10.326(95% CI; 1.290, 82.638)] and perceived susceptibility [Adjusted OR= 3.522(95% CI; 1.260, 9.850)] of the respondents. This shows that students with good knowledge were 10 times more likely to have Pap smear screening test than those with poor knowledge concerning cervical cancer and Pap smear screening test. Similarly, students whose perception was high towards contracting Human Papiloma Virus and Cervical Cancer are about 4 times more likely to have Pap smear screening test compared with those with low perceived susceptibility. Having a look at this result it could be explained in such a way that students' knowledge level was the major predictor for their Pap smear uptake status which is indicative for giving due attention towards the need of increasing awareness of young group concerning cervical cancer and Pap smear screening test.

CHAPTER SIX: DISCUSSION

6.1. Risky sexual behavioral

The prevalence of having history of sexual practice was identified to be 58(28.9%) which comprised all of the 15 married and 43(23%) single respondents. This shows that the number of students who were sexually engaged was much smaller than those who were not144 (71.1%). This result is inconsistent with data obtained from the assessment of behavioral practice of students at different universities like; South Africa, Hawasa and selected faculties of AAU in which 51.2%, 40.6% and 8.9% were identified to have sexual experience respectively (9, 10, 14). The mean age at first sexual intercourse in this study was 17.7years and the age at sexual debut ranged from 13-25years. Less than one fourth of them had early sexual debut, in that 12 (20.69%) had been commenced intercourse before the age of 15 years. It is almost similar with the study at South Africa in which the mean age at first sex was 18 years with range of 10-26 (14). However, the mean age at first sexual debut in this study is greater almost by 3 years than study at Hawasa (9). Apart from this there were also respondents with multiple sexual partners in which about 17(30%) of sexually active respondents had sex with two or more partners. Despite the fact that there is at least a 64% chance of contracting HPV with each act of unprotected sex with an infected partner (2); the use of condoms was however found to be unpopular among this study participants. Only 12(20.70%) respondents were using condoms, of which very few 4(6.9%) use always during sexual intercourse and 46(79.31%) had never used condom. Quite the opposite to this result, only 19.2% respondents of South Africa study participants were reporting that they had sex with two or more sexual partners; while large proportion (81.4%) of them had condom using habit always during sexual intercourse (14). However, this finding seems better

when compared with study at Hawasa in which about 35% students were with multiple sexual partners (9). None of the socio-demographic characteristics was identified to have significant association with behavioral practice of the students; this might be because of small number of students had sexual practice which could not significant to show the relationship; however relatively large proportion of students with more than one sexual partner used condom when compared to those who had single partner.

This in general indicates that some of the respondents were still at high risk of contracting HPV as a result of the early initiation of sexual intercourse 12(20.69%), having multiple sexual partner 17(29.31%) and unprotected sex 46(79.31%).

6.2. Knowledge Level on cervical cancer and Pap smear test.

Cervical cancer was correctly defined merely by 110 (54.5%) of the total participants. This finding is by far different from previous study at Durban in which (91.3%) medical and 88.0% nursing students were being informed about cervical cancer (19). Moreover, only about 116 (57.4%) respondents were familiar with name of the virus associated with cervical cancer and similar number of students knew the link between sexual activity and cervical cancer. This finding is somewhat comparable with study conducted at Tanzania of which (60.6%) correctly identified sexual intercourse as a mode of transmission for HPV (25) but is much better awareness when compared with Ghana university students in which only 38% believe that being sexually active puts a woman in greater risk of contracting cervical cancer (20). Other study at Pakistan had shown that 89% knew the mode of transmission of HPV (21). Awareness concerning the influence of number of partners on cervical cancer was identified to be good in, which 136(67.3%) believe that having many sexual partners is risk factor for contracting HPV.

This finding indicates better awareness when compared to similar studies at Colombia, Ghana and Pakistan (14, 20, 21) in which less than half of the students believe having more than one sex partner is risk factor for cervical cancer. Having any sexually transmitted infection and commencing intercourse before age of 15 years were mentioned as risk factors for cervical cancer by 66(32.7%) and 68(33.7%) of respondents respectively. Similar studies at Colombia and Botswana suggested that early onset of sexual activity (28.7%), having other sexual transmitted diseases and lack of pap smear screening (84%) were mentioned as risk factors for cervical cancer (14,23). Just 81(40%), and 79(39%) of the respondents agreed that condom utilization and regular Pap smear test respectively contribute to cervical cancer prevention and control. In the light of the facts that cervical cancer is the leading cancer death among Ethiopian women, 70% of Cervical cancer in developing countries is associated with Human Papilloma virus and 50-60% of sexually active female college students acquire HPV (1, 2); it was unexpected result that Health Science female students were with such low awareness concerning cervical cancer. This might be related with the fact that cervical cancer could have received low priority because of other pressing communicable diseases like TB, HIV and Malaria.

Slightly more than half of the respondents 118(58%) had correctly answered that Pap Smear test is used to screen cervical cancer at precancerous stage. However, the majority of those who were aware of pap smear screening test knew that any sexually active female is entitled for the test 89(75.4%), while very few were familiar with the recommended frequency for pap smear test 20(16.9%). Generally, the students' awareness on Pap smear test was found to be unsatisfactory when compared with previous studies (18, 21,24). The finding enables to judge that there might be information gap amongst adolescents of our country concerning Pap smear test when compared to some other African countries. It was also evidenced that cancer deaths in

developing countries were attributable to delayed diagnosis as a result of limited awareness and resources (7). Hence, this finding pointed out that more awareness programs should be directed to make health science students knowledgeable concerning cervical cancer and Pap smear test as they are expected to revolutionize the society's practice on early detection and treatment of cervical cancer. There by, it will be easy to reduce maternal mortality attributable to delayed diagnosis of cervical cancer.

In spite of the field of study of the respondents and cervical cancer's leading cancer mortality among Ethiopian women(1); the overall respondents' level of knowledge concerning cervical cancer and pap smear test was found to be low, in which less than half 84(41.58%) of the students were with good or excellent knowledge. In view of such knowledge gap among health science students, it can be estimated that very few of the rest population segments have an awareness concerning cervical cancer and its screening test. On top of the disease burden in the country (1,3, 6, 8), this study finding signals that much has to be done to fill knowledge gap concerning cervical cancer, its preventions and treatments. Factors in support of knowing well about the disease and its screening method were; year of study [x^2=64.907; p <0.001] and sexual activity of the respondents [x^2=8.021; P= 0.046] (Table 8). Students attending in 3rd and 4th year classes were with better knowledge 56(73.7%) compared to those attending in 1st year and 2nd year classes 28(22.6%), similarly sexually active students were with better knowledge 31(53.45%) compared to those who did not have sex with any one 53(36.81%). In previous study sexual activity and marital status of the respondents were identified to be determinant factors for awareness of the respondents about cervical cancer and Pap smear test (18). Over all; the commonest source of information about cervical cancer and Pap smear test for majority of them was mass media 95(47%) followed by class lecture 81(40.1%), where as health institution was

mentioned as a source of information by very few respondents 38(18%). This was in contrary to previous study in which the major source of information was hospitals (18); which could be suggestive that health institutions in our settings might not given due attention on cervical cancer while disseminating health information about other STIs . However, great majority of 3rd year and 4th year as well as married respondents reported class lecture as their source of information. This is possibly explained by the fact that the greatest means of awareness about cervical cancer and Pap smear for undergraduate health science students is class lecture, which was predominantly limited to 3rd and 4th year students. Therefore, since more than half of sexually active female college students have chance of acquire HPV; students would better get training on STIs; starting at high school level and at practical sessions for health science students in addition to class lectures.

6.3. Pap smear uptake status

Another major finding of this study was that awareness of Pap smear far outweighed its utilization by the students. Very few of this study participants had Pap smear uptake history 26(12.9%) of which 21(80.77%) were tested within the last 3 years. The high rate of Pap smear non-utilization in this study is comparable with previous findings among similar group of respondents (14, 18, 24). It was however observed that the married [x^2=10.633 ; P<0.001], the sexually active [x^2 =23.934 ; P<0.001] and students in the third year and fourth year [x^2 = 31.006; P<0.001] were more likely to have the test, which could be related with the better knowledge they have compared to the rest group (Table 5). It was similar finding with study at Ibadan (18). The most frequent reasons for not having pap smear were; lack of information about cervical cancer screening 159(78.7%), being worried if found to have early signs of cancer 128(63.4%) and not knowing of centers where the test could be done 110(54.5%); as observed in

other studies (18). Personal factors such as fear of the procedure, cultural (religious) reasons, and not having illness (61.1%) were among reasons for not having the test, in other studies (14). This shows the fact that cervical cancer screening is uncommon among the youngest group of societies because of different factors and some studies also evidenced that very few of respondents whose age between 18-29years had tested at some time in their life when compared to those whose age was more than 30 years (30). In the conclusion; health education for all college female students concerning cervical cancer and screening tests, appears to have a prominent role to play in increasing awareness and Pap smear uptake so as to be an input in addressing some of the reproductive health need of youth group.

6.4. Predictors for Pap smear uptake

Bivariate and Multivariate Logistic regression analysis was employed to identify predictors for Pap smear uptake status of the respondents. Constituents of Health belief model (perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefit of pap smear test and perceived barriers for having pap smear test), as well as knowledge level of the respondents were used as covariates.

6.4.1. Perceived susceptibility

It was identified that respondents who never had Pap smear test have low perceived susceptibility to cervical cancer than those who ever had Pap smear test. When perceived susceptibility to cervical cancer was compared with Pap smear uptake status, 173(86%) of the respondents perceived themselves as having low susceptibility to cervical cancer and as a result think having Pap smear test was not necessary. However, 148(73.3%) respondents believe that they could have precancerous lesion, 86(43%) were not worried about cervical cancer because

they believed it is common in older women and therefore screening would be mainly essential in the older age group. Factors in favor of the respondents perceived susceptibility to contracting HPV infection and cervical cancer were; their year of study [P = 0.022; CI= 95%] and sexual activity [P = 0.007; CI= 95%]. The proportion of respondents' high perception on their susceptibility to contracting cervical cancer increased with the year of study, where as that of low perception decreased as the study year goes up. Likewise, large proportion of sexually active respondents was with high perceived susceptibility compared to those who did not have sexual intercourse. Susceptibility to cervical cancer was significantly associated with pap smear uptake status [Adjusted OR=3.5229 (95% CI; 1.260, 9.850)], wherein students whose perception is high towards contracting Cervical Cancer were about 4 times more possibly to have pap smear screening test than those with low perception. This is in keeping with other study which revealed that those with high perceived susceptibility were 3.2 times more likely to screen for cervical cancer than those with low perceived susceptibility (23) and it goes well with Health Belief Model which explained that individuals are more likely to perform health-related behaviors if they feel that there is a high risk of contracting the disease. Thus, respondents who perceived themselves susceptible to cervical cancer more had Pap smear screening test compared to those who perceived themselves as not susceptible.

6.4.2. Perceived severity

Almost all respondents 200(99%) had some information about severity of cervical cancer as they had given correct answer at least to one perceived severity question, this is in line with other study in which majority were sure about severity of cervical cancer with the average response of 2.56 (23). The belief of most respondents was that cervical cancer can results to infertility 80(39.6%) and can make women's life difficult 70(34.7%). This finding clearly indicated that

both group (ever and never had pap smear test) were aware that cervical cancer is serious disease. More than half of those ever had pap smear test 15(57.7%) and 51(29.5%) of those who never had pap smear test, believe that cervical cancer can easily be cured with early detection and proper treatment. This implies that understanding about the effective treatment of cervical cancer if identified early could contributory factor for the uptake of pap smear, regardless of believe on the seriousness of the diseases which was supposed by both groups(ever and never had pap smear test). When the ever had Pap smear test and those never had the test were grouped in to high and low perceived severity based on the scores, 154(88%) of those never had Pap smear test were with low perceived severity while 13(50%) of those ever had Pap smear test had high perceived severity to cervical cancer. However, Pap smear uptake status was not affected by perceived severity of the respondents [Adjusted OR= 2.474(95% CI; 0.370, 16.552)]. This is in line with study in Botswana (23) but in contrary to Health Believe Model, which put forward that individuals are more likely to perform health-related behaviors if they perceive an illness as being serious. Therefore, the respondents' Pap smear uptake was very low irrespective of their perceived severity of cervical cancer whether it was high or low. Hence, the reason why this is contradictory to what was explained by Health Belief Model needs to be further explored.

6.4.3. Perceived benefit

In this study it was good to identify that remarkable number of respondents believed that pap smear tests is important in early detection 147(72.8%), early treatment 142(70.3%) and controlling of cervical cancer 103(51%). But when seen generally, 127(62.9%) were with low perception on the health benefit of pap smear test while 75(37.1%) respondents were with high perceived benefit. By the comparison of ever and never having Pap smear uptake with perceived

benefit of having the test, it was illustrated that there was no significant association between perceived benefit and Pap smear uptake status of the respondents [Adjusted OR= 1.528(95% CI; 0.616, 3.795)]. This contradicts what was elucidated by Health Belief Model, which explained that those with high perceived benefits are more likely to take preventive actions, than those with no or low perceived benefits. Thus, the students' believe about the benefit of Pap smear screening test was not a significant barrier for having the test, rather low Pap smear uptake among these students could be attributable to unpopularity of the service or other factors than their perception on the benefit of the screening test.

6.4.4. Perceived barriers

Generally speaking, very few of the respondents were with high perceived barriers 6(3.0%) of having pap smear test. However, the most frequently mentioned barriers perceived to hold back the students to have pap smear test were; lack of information about cervical cancer screening procedures 159(78.7%), being worried if they would be found to have early signs of cancer 128(63.4%), not knowing where to go for the test 110(54.5%) and believing that Pap smear is unnecessary if there is no signs and symptoms 96(47.5%). This finding was comparable with previous study at Botswana (23). In some other studies; fear of the procedure, being healthy (no illness), discouraging behavior of health workers, cost of the test , belief that everyone would consider them sexually active, embarrassing to expose themselves for screening, the belief that the Pap test is painful and the belief that Pap test will take away virginity were considered as barriers for not having pap smear screening test (14,20).Whilst, comparing never and ever having pap smear test with their perceived barriers, none of the respondents with high perceived barriers had pap smear test, while 87 % of the never screened had low perceived barriers for pap smear test. Statistical test revealed that association did not exist between the Pap smear uptake and

perceived barriers. Even though it is cheering to identify that 196(97%) participants were with low perceived barriers for having Pap smear test, non utilization rate of Pap smear test overwhelms their low perception of barriers for having the test. This is still opposite to the Health Belief Models' explanation which states that individuals are more likely to perform health-related behaviors if they believe that the health action will result in a positive outcome that will out weight any barriers encountered.

6.4.5. Knowledge level

It was identified that Pap smear uptake was significantly associated with good knowledge level [Adjusted OR=10.326(95%CI; 1.290, 82.638)]. This indicates that students with good knowledge concerning cervical cancer and Pap smear test are 10 times more likely to had Pap smears screened for cervical cancer compared to those with poor knowledge. Knowledge level was found to be the major predictor [Adjusted OR= 10.326(95%CI; 1.290, 82.638)] for pap screening uptake followed by perceived susceptibility [Adjusted OR=3.522(95%CI; 1.260, 9.850)]; both of which were affected by year of study and sexual activity of the respondents. From this, assumption can be made that by improving understanding on cervical cancer and pap smear test; as well as increasing perceived susceptibility to cervical cancer through awareness campaigns for all health science female students; Pap smear screening test can be significantly improved amongst the youngest group.

CHAPTER SEVEN: STRENGTHS AND LIMITATIONS OF THE STUDY

7.1. Strengths of the study

This study had the following strengths in addressing the objectives and validity of the study findings related to knowledge on cervical cancer and predictors of Pap smear uptake.

- The study has used semi-structured questionnaire some of which adopted from standard questionnaire after the necessary modification and pre-test was made; the data was collected by trained health professionals which has increased quality of the data.

- The use of binary logistic regression statistical methods to control possible confounding factors was also considered as the strength of the study.

7.2. Limitations of the study

This study had the following strengths in addressing the objectives and validity of the study findings related to knowledge on cervical cancer and predictors of Pap smear uptake.

- Social desirability bias which may occur as a result of the students systematically provided socially acceptable responses, even though they were about assured confidentiality of the data.

- The small sample size might introduced loss of precision of estimate because of the small sample size in which it was difficult to make statistical association among variables

CHAPTER EIGHT: CONCLUSION AND RECOMMENDATIONS

8.1. Conclusion

This study sought to explore risky sexual behavior, knowledge on cervical cancer and predictors for Pap smear uptake among undergraduate Health Science students, in the context of cervical cancer burden in Ethiopia. The finding had shown that behavioral practices including; early initiation of sexual intercourse, having multiple sexual partner and unprotected sex were prevalent among female undergraduates, which enable to conclude that some students were at high risk of contracting HPV and cervical cancer. The knowledge level among this group was found to be low, as less than half of the students were with good or excellent knowledge concerning cervical cancer and Pap smear test. The most senior or third year and fourth year students tend to be better informed, possibly because they were more likely to hear about cervical cancer and Pap smear test during class lectures, which was source of information for majority of students in these study years in addition to other sources of information. Sexually active respondents were also found to have better knowledge than those who did not have sexual intercourse. Pap smear uptake rate was still very low comparable to previous studies conducted on similar segment of the population. The Pap smear test uptake was better among married, third year and fourth year as well as sexually active students. This could be related with the better knowledge they had compared to the rest group. Majority of the respondents were aware of their susceptibility to cervical cancer, severity of cervical cancer, benefits of having Pap smear and had some barriers to seeking Pap smear screening test. But when seen generally, enormous numbers of the students were with low perceived susceptibility to cervical cancer, low perceived severity of cervical cancer, low perceived benefit of Pap smear test and low perceived barriers for having Pap smear test. The results of binary logistic regression, keeping other health belief

model constituents constant; had proved that Pap smear uptake status of the students were influenced by perceived susceptibility and knowledge level. Students with high perceived susceptibility and good knowledge level were more likely to had Pap smear test compared to those with low perceived susceptibility and poor knowledge.

8. 2. Recommendation

Cognizant of these facts, would better deal with increasing females' awareness and their perceived susceptibility on cervical cancer. This study indicated the need to design and implement effective strategies to improve awareness on cervical cancer and Pap smear with its utilization. Therefore, the following actions may be recommended to be considered by relevant bodies:

1. These young people should be encouraged to increase the age at first coitus, to limit the number of sexual partner to one and hug to the use of condoms.
2. The reliance on increasing awareness about cervical cancer with special emphasis on risk factors, preventive mechanisms and the need for regular cervical screenings; would do very much by bringing up good understanding and behavioral change.
3. Perceived susceptibility should be emphasized through education and awareness campaigns as it was found to improve uptake of Pap smear.
4. Reproductive health education about cervical cancer, sexually transmitted diseases and their prevention should be intensified in high schools and higher institutions.
5. Health education at health institutions should also give due attention on reproductive health with special attention on STIs and cervical cancer.
6. The target group would be better promoted for screening of cervical cancer during their MCH visits, not to miss the opportunities at all level of health institutions.
7. Youth friendly services would better available in centers were reproductive services are rendered including the teaching hospitals; as invasion of privacy was identified as possible cause of fear for having pap smear test.

8. Finally, it is highly recommended that related studies would better be conducted on factors affecting service utilization of available cervical cancer screening tests at other universities and colleges on large sample of students.

References

1. Addis Tesfa, Combating Cervical Cancer in Ethiopia, Addis Ababa, April 2010, Pathfinder International Ethiopia, 0310/250

2. Pap Smears and HPV, http://www.uhs.umich.edu/papsmear ,retrieved on October 28/10/11

3. Pap Smears and Cervical Cancer Screening http://www.netwellness.org/healthtopics/women/cervicalcatest.cfm, retrieved on October 28/10/11

4. Carmen Zorrilla, Women's Health: Cervical Cancer Screening, July 22, 2010, Florida/Caribbean AIDS Education and Training Center, volume- 11 Issue 4.

5. Centers for Disease Control and Prevention (CDC),Cervical cancer screening with the HPV and the pap test in women ages 30 and older, U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

6. Andreas Ullrich, Cervical Cancer in Context of the Global Cancer Burden, 2005(unpublished

7. Timothy R. Rebbeck, Cancer in Africa, 2008, American Cancer Society, Atlanta, GA 30303-1002(404) 320-3333

8. Martin L. Brown et.al, Health Service Interventions for Cancer Control in Developing Countries, Washington DC , 2006, The International Bank for Reconstruction and Development /The World Bank 1818 H Street NW.

9. .Martha Fikre, Assessment of Parent-Adolescent Communication on Sexual and Reproductive Health matters, Hawassa Ethiopia, July 2009

10. Nigatu Regassa1, Seman Kedir, Attitudes and practices on HIV preventions among students of higher education institutions in Ethiopia, Addis Ababa, February 2011, International Research Journals, (ISSN: 2141-5161) Vol. 2(2)

11. HAPCO and GAMET HIV/AIDS in Ethiopia An Epidemiological Synthesis, April 2008 The International Bank for Reconstruction and Development / The World Bank 1818 H Street, NW Washington, DC 20433

12. Paula C. Fletcher, Preliminary Examination of Cervical Health Practices and Knowledge among University-Aged Females, 2005 College Student Journal, Vol. 39 (http://www.questia.com/googleScholar.qst?docId=5010966720)

13. .Dr. Susana M. Nakalevu The Knowledge, Attitude, Practice and Behavior of Women Towards Cervical Cancer and Pap Smear Screening, Rawa 2009

14. E Hoque, M Hoque Knowledge of and attitude towards cervical cancer among female university students in South Africa, South Afr J Epidemiol Infect 2009;24(1):22-23

15. John G. Lenehan et al, Women's Knowledge, Attitudes, and Intentions Concerning Human Papillomavirus Vaccination, London,2007 J Obstet Gynaecol Can 2008;30(6)

16. T. Denny-Smith et al., A survey of female nursing students' knowledge, health beliefs, perceptions of risk, and risk behaviors regarding human papilloma virus and

cervical cancer, USA Journal of the American Academy of Nurse Practitioners 18 (2006) 62–69 2006 The Author(s); doi:10.1111/j.1745-7599.2006.00100.x.

17. Yigzaw Kebede Cigarette smoking and Khat chewing among college students in North West Ethiopia, Gonder and Bahirdar, January 2001 unpublished

18. *OAAyinde et al* Awareness of Cervical Cancer, Papanicolaou's Smear and Its Utilisation among Female Undergraduates in Ibadan *Afr J Reprod Health* 2004; 8[3]:68-80)

19. N. WELLENSIEK, Knowledge of cervical cancer screening and use of cervical screening facilities among women from various socioeconomic backgrounds in Durban, Kwazulu Natal, South Africa 2002 IGCS, International Journal of Gynecological Cancer 12

20. Peter N. Abotchie, Navkiran K. Shokar Cervical Cancer Screening Among College Students in Ghana:Knowledge and Health Beliefs, Ghana, *Int J Gynecol Cancer*. 2009 April ; 19(3): 412–416. doi:10.1111/IGC.0b013e3181a1d6de

21. .Syed Faizan Ali et al. Knowledge and Awareness about Cervical Cancer and Its Prevention amongst Interns and Nursing Staff in Tertiary Care Hospitals in Karachi, Pakistan 2010 PLoS ONE 5(6): e11059. doi:10.1371/journal.pone.0011059.

22. Wong L P, Wong Y L, Low W Y, Khoo E M, Shuib R, Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study, Malaysia, Singapore J 2009; 50 (1) : 49

23. Chidiebere Maquincy Ibekwe Factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital in Botswana-Use of the Health Belief Model 2009

24. Beauty Hlengiwe Ndlovu, AWARENESS, KNOWLEDGE AND EXPERIENCES OF WOMEN REGARDING CERVICAL CANCER IN RURAL KWAZULU-NATAL, SOUTH AFRICA, March 2011,

25. Urasa M et al, Knowledge of cervical cancer and screening practices of nurses at a regional hospital in Tanzania, September 2009, *African Health Sciences* 2011; 11(1)(not used)

26. Marian Pitts and Tracy Clarke, Human papillomavirus infections and risks of cervical cancer: what do women know?, UK 2002, Oxford University Press Vol.17 no.6

27. Redhwan Ahmed Al-Naggar et al , Perception and Opinion of Medical Students about Pap Smear Test, Malaysia February 2010, *Asian Pacific Journal of Cancer Prevention, Vol 11, 2010*

28. T. Gregory Hislop et al, Pap Screening and Knowledge of Risk Factors for Cervical Cancer in Chinese Women in British Columbia, Canada Jan 2007 Routledge, Ethnicity & Health,Vol. 9, No. 3,

29. Stephen C. Chang et al, Reproductive Health Disparities: Pap Knowledge and Screening Rates among Asian Pacific Islander College Women, Asia 2011, Californian Journal of Health Promotion, *Californian Journal of Health Promotion 2011, Volume 9, Issue 1*

30. Chantal Sauvageau et al, Human Papilloma Virus vaccine and cervical cancer screening acceptability among adults in Quebec,2006 Sauvageau et al; licensee BioMed Central Ltd., *BMC Public Health* 2007, 7:304 doi:10.1186/1471-2458-7-304

31. WHO/ICO Information Centre Human Papillomavirus And Related Cancers 2010 WHO/ICO HPV Information Centre, Ethiopia 3rd edition

32. Redhwan Ahmed Al-Naggar et al, Knowledge and Barriers Towards Cervical Cancer Screening Among Young Women in Malaysia 2010 *Asian Pacific Journal of Cancer Prevention, Vol 11, 2010*

33. Rosenstock et al Revised Health Belief Model 1988 Behavior and Health Education Qaurterly,11,1-47.

34. A Harrison et al Early sexual debut among young men in rural South Africa: heightened vulnerability to sexual risk? 2005,Sex Transm Infect 2005;81:259–261. doi: 10.1136/sti.2004.011486

ANNEX

Consent paper

Addis Ababa University College of Health Sciences

Department of Nursing and Midwifery

This questionnaire is prepared in order to assess your knowledge on cervical cancer and Pap smear as well as points you perceive would affected your Pap smear screening test utilization status or predictors for Pap smear uptake.

The information you provide us in this study will be a greet input for obtaining the existing gap concerning the knowledge on cervical cancer and the status of screening test among the youngest group of our country so as to report to the concerned bodies which contributes more in the minimization of the disease burden. Since your name and ID number will not be written on this questionnaire, the information you give will not be disclosed to anyone.

You will not earn money for giving this information, rather you will be benefited indirectly from the results obtained based on the information obtained from you and your colleagues which helps the concerned bodies to take appropriate measures.

No one will enforce you unless you are interested to participate in the study and you have the right to decline from giving the information any time you want to do; even after starting to fill the questionnaire.

So are you willing to participate in the study? a. yes b. no

Thank you.

Date of data collection_____

Department of the respondent_____

Questionnaire

Part I

Number	Variable	Choice	Remark
a. Questions prepared to assess background information of the students.			
101	Age	_____/_____/_____**(**dd/month/year) or age in years	
102	Marital status	1. Single not previously married 2. Married 3. Separated/divorced 4. Widowed	
103	Ethnicity	1. Oromo 2. Amahara 3. Tigre 4. Gurage 5. Somale 6. Adere 7.Others(specify_____	
104	Religion	1.Orthodox 2. Protestant 3. Muslim 4. Catholic 5. Others (specify_____	
105	Previous residence	1.Urban 2.Rural	
106	Current department of study	1.Nursing 2. Midwifery 3.Medical laboratory 4.Anesthiology 5.Radiology	
107	Current level of study or academic year	1. 1st year 2. 2nd year	

		3. 3rd year 4. 4th year	
b. Questions designed to assess behavioral practice of the students.			
108	Have you ever given birth?	1. Yes 2. No	If No, skip to 110
109	How many?	1. One 2. 2-4 3. More than 4	
110	Do you have sexual partner?	1.Yes 2. No	If No, skip to 115
111	At what age you initiated sexual practice?	At _____years of age	
112	What is the number of partners you have had to date?	_____specify in number	
113	Do you use condom?	1.Yes 2. No	If no skip to 115
114	How often?	1.Always during sexual intercourse 2. Some times during sexual intercourse	
115	Have you ever smoked cigarette?	1. Yes 2. No	If No skip to 201
116	For how long?	_____specify	
117	Are you currently smoking?	1.Yes 2.No	

Part II

Questions designed to assess level of knowledge of the students.

Number	Variable	Choice	Remark
a. Knowledge on cervical cancer			
201	What is cervical cancer?	1. Cancer of uterus 2. Cancer of opening of uterus 3. Cancer of fallopian tubes 4. Cancer of ovary 5. Cancer of vagina 6. I don't know	
202	Cervical cancer is the 2nd leading cancer case in women of age between 15-49 and 1st leading cause of cancer death among females, in Ethiopia.	1.True 2.False 3.I don't know	
203	At what years of age women most likely to have cervical cancer?	_____specify.	
204	What is the screening test for precancerous cervical lesion?	1. X-ray 2. Pap smear tests 3. Blood tests 4. Urine test 5. I don't know	
205	What is the name of the virus associated with cervical cancer and precancerous cell?	1. Human papiloma virus 2. Herpes simplex virus 3. Human immune deficiency virus 4. I don't know	
206	The virus associated with cervical cancer is most commonly transmitted by	1. Sexual intercourse 2. Maternal-fetal transmission 3. Blood transfusion 4. Inanimate objects 5. I don't know	
207	At what years of age women most likely to contract infection with the virus cancer?	_____specify.	
208	Prevention of cervical cancer may require (you can give more than one answer)	1. Delayed onset of sexual activity 2. Annually Pap smear test 3. Use of condoms 4. I don't know	

b. Knowledge on risk factors for cervical cancer			
209	What are some factors that can increase the risk of getting cervical cancer?(you can give more than one answer)	1. Family history of cervical cancer 2. Smoking cigarette 3. Poor diet or nutrition 4. Having many sexual partners 5. Using oral contraceptives for long period 6. Having the viral infection caused by Human papilomavirus (HPV) 7. Having contracted any sexually transmitted diseases 8. .Having sexual intercourse before age 15years 9. Don't know	
c. Knowledge on pap smear test			
210	What is a pap smear test?	1. Scraping to look for abnormal cervical cells 2. Inserting speculum in the vagina to visualize abnormal cells 3. Test for different sexually transmitted diseases 4. Drawing blood sample to isolate virus associated to cervical cancer 5. I don't know	
211	Who is entitled for pap smear screening test?	1. Only women who have had babies(who had given birth) 2. Only women with age more than 30 years 3. Any sexually active women 4. I don't know	
212	Whatis the recommended frequency for pap smear test?	1. Annually from the age 20 years 2. At least every3- 5 years from the age 20 years 3. At least every 10 years from the age 20 years 4. After the age of 50 5. I don't know	
213	Why is pap smear screening done for women?	1. To check for cancer or early changes of cancer in the cervix.	

		2. To check for infections passed on through sex. 3. To check for infections passed on by blood transfusion 4. I don't know	
d. Source of information on cervical cancer and pap smear			
215	What is your source of information concerning cervical cancer and pap smear screening test? (you can give more than one answer.)	1. Mass media 2. Self study(references) 3. Health institution (Clinics, hospitals) 4. Class lecture 5. Internet 6. Posters 7. Others (specify)	

Part III

Questions prepared to assess the students' pap smear uptake status (whether screened or not).

Number	Variable	Choice	Remark
301	Have you ever had pap smear test?	1. Yes 2. No	If no skip to 305
302	When was the last time you have a Pap test?	1. One year back 2. 3 years back 3. 5 years back 4. More than 5 years back 5. Don't remember	
303	How many times you had a pap smear test in the last 5 years	1. Once **2.** Twice **3.** 3 times 4. More than 3 times	
304	Are you planning to continue with pap smear tests in the future?	1. Yes 2. No	Skip to 306
305	Are you planning to have pap smear tests in the future?	1. Yes 2. No	
306	If your Pap smear test results showed that you had some cancer changes would you go for further follow up clinic?	1. Yes 2. No	If yes skip to 401

307	If No, why?	Specify_____ _	

Part IV

Questions prepared to assess the possible predictors for pap smear service utilization which mainly focuses on students belief (perceived susceptibility to cervical cancer, perceived severity of cervical cancer, perceived benefit of pap screening test and perceived barriers for pap smear screening test utilization).

Number	Variable	Choice	Remark
	a. Perceived susceptibility		
401	Do you believe that you could have pre-cancer lesions?	1. Yes **2.** No	
402	How would you judge your risk of developing cervical cancer?	1. My chance of contracting HPV is high 2. My chance of contracting HPV is low	
403	Which of the following makes you worried?	1. That you are at risk for developing cervical cancer. 2. That you are at risk for contracting HPV. 3. That you might be one of those who have cervical cancer, because all women have an equal chance of developing cervical cancer. 4. Not worried concerning cervical cancer because it is common in aged women and those who gave birth.	
	b. Perceived Severity		
404	Which of the following is true about severity of cervical cancer?(you can give more than one answer)	1. It is possible to prevent cervical cancer 2. Having cervical cancer will make a woman's life difficult. 3. Cervical cancer is not as serious as other types of cancers. 4. Cervical cancer can easily be cured with early detection and proper reatment. 5. Having cervical cancer can result to infertility. 6. Death resulting from cervical cancer is rare.	
	c. Perceived benefit of having pap smear test		
405	Does having regular pap smear tests give you a sense of control?	1. Yes 2. No 3. Don't know	

406	Is it important for a woman to have regular pap smear test to know if she is healthy?	1. Yes 2. No 3. Don't know	
407	If cervical changes are found early from cervical cancer screening, they are easily curable.	1. True 2. False 3. Don't know	

d. Perceived Barriers for having pap smear test

Identify the possible barriers you perceive would inhibit someone or yourself from having pap smear test(use X mark under your choice i.e Yes or No

	Do you perceive that the following can be possible barriers for not having pap smear?	**Yes**	**No**	**I don't know**	
408	Having pap test is pain full				
409	Having a check is unpleasant and/or embarrassing				
410	Pap smear is unnecessary if there is no signs and symptoms				
411	It is unnecessary to go only for Pap smear test				
412	Going for Pap smear screening is too expensive				
413	I am afraid that something wrong will be detected if I go for a Pap smear test.				
414	I would be worried if I was found to have early signs of cancer(pre-cancerous lesions)				
415	It is difficult to get to the pap smear clinic				
416	If a young unmarried woman does cervical cancer screening, everyone will think she is having sex				
417	If a woman has not had sex, cervical cancer screening will take away her virginity.				
418	Not knowing where to go for cervical cancer screening				
419	Lack of female screeners in health facilities				
420	Discouraging health workers attitude				
421	Lack of information about cervical cancer screening procedures				