DETERMINANTS TO UTILIZATION OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE DISTRICT MALAWI. A COMPARISON OF URBAN AND RURAL AREAS

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ABSTRACT

Cervical cancer is a treatable disease and primary intervention like screening is the single most important public health strategy to reduce cervical cancer incidence and subsequent mortality. However, in Malawi under-utilization of these services contribute to women presenting to hospitals when the disease is at an inoperable stage. This cross-sectional, community based study aimed at identifying determinants to utilization of cervical cancer screening services among women aged 30-45 years in urban and rural areas in Blantyre district, Malawi. A total of 257 randomly selected women (134 urban and 123 rural) participated in the study and face to face interviews were conducted using structured administered questionnaire to gather information on socio-demographic, knowledge, perception, health locus control, social support, attitude and intention from 30th April 2015 to 16th May 2015. Data were analyzed using descriptive statistics, Chi-square test and logistic regression. Only 13.2% of the respondents had been screened for cervical cancer and the main reasons for not being screened among the respondents not screened yet included lack of interest (39.7%), lack of knowledge (33.5%) and no reason given (19.8%).The respondents being screened were older and were only 32.4% of the study population and the majority were from rural areas. The most significant factors to utilization were age (aOR 7.05, 95% CI 2.31, 21.6), number of sex partners (aOR 3.24, 95% CI 1.31, 8.0), use of oral contraceptive (aOR 2.60, 95% CI 1.02, 6.61), having heard of cervical cancer screening (aOR 17.7, 95% CI 2.18, 144), knowledge (aOR 7.37, 95% CI 2.44, 22.2) and perceived severity (aOR 9.68, 95% CI 1.19, 79.0).The result of the predictors according to place of residence indicated that age, number of sex partners and high level of knowledge were predictors for utilization of cervical cancer screening in the urban areas while high level of perceived severity was the only predictor in the rural areas. In conclusion, there is low utilization of cervical cancer screening therefore need for effective interventions according to place of residence in order to increase utilization of cervical cancer screening in Blantyre District among the rural and urban women.

KEY WORDS: CERVICAL CANCER / CERVICAL CANCER UTILIZATION / KNOWLEDGE / URBAN / RURAL

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LIST OF ABBREVIATIONS

HPV	Human Papilloma Virus
VA	Visual Inspection with Acetic Acid
USA	United States of America
HBM	Health Belief Model
KR 20	Kuder-Richardson (KR20)
CHAM	Christian Health Association of Malawi
WHO	World Health Organization
CI	Confidence Interval
AOR	Adjusted Odds Ratio

CHAPTER I
INTRODUCTION

1.1 Rationale and justification

Cancer of the cervix remains a public health concern despite the disease being preventable and treatable. The disease is caused by Human Papilloma Virus (HPV) that is transmitted through sexual intercourse. The disease progression is slow and it can take 10-20 years from initial infection to invasive form (1).

The morbidity and mortality rates are high among women at the prime of their lives and this consequently disrupts the household well-being, communities and country at large as women play a crucial role in development (2).Noteworthy, the disease is preventable and treatable when the precancerous cells are detected early and this warrants halting the premature deaths of women (3).

Globally, approximately 530,000 new cases of cervical cancer are diagnosed annually and 270,000 die from the disease(3). It is the third most common cancer after breast and colorectal cancers and fourth leading cause of death in women. In 2008, it accounted for 9% (529,800) of the total new cancer cases by all types and 8% (275,000) of the total cancer deaths among females(4).

In developed countries, the disease burden is low as evidenced by mortality rates not exceeding 5 per 100,000(5). High-income countries have also demonstrated low age standardized incidence rate as the case with Western Asia, North America and New Zealand at less than 6 women per100,000 population in 2008 (6).In developing countries, cervical cancer remains problematic with alarming incidence and mortality rates. The disease in these countries accounts for approximately 80% of the global incidence and prevalence (7).In Sub-Saharan Africa the disease is the second most common cancer both in both incidence and mortality and 75 000 new cases are diagnosed, and over 50 000 deaths occur each year. It is estimated that 200 million females,15 years and older are at risk of developing the disease with overall age-standardized incidence of 31.7per 100,000 (8).

In Malawi, there are 4.50 million women aged 15 years and older at risk of developing cervical cancer. The disease has maintained an increasing trend from 25% in 2000-2002 to 45% in 2007-2010 (9). Age standardized incidence per 100,000 shows that the trend has increased from 10 in 1999-2002 to 20- 35 in 2007-2010 respectively (9).Currently, Malawi is reported to be the leading country in incidence and mortality in Africa with 75 and 50 per 100,000 respectively (10).The burden of cervical cancer in Malawi is more in the Southern region than the other regions of Central and North. An audit on gynecological cancers at the main tertiary hospital in the region, revealed that cervical cancer accounted for 90% of all cancers (11).

A number of factors contribute to the high burden of the disease in the low and middle income countries like inadequate resources, infrastructure(12, 13), equipment and competing health priorities like Human Immunodeficiency Virus (HIV). Reports have shown a significant association between HIV and HPV and progression of the disease (14). In addition, HPV infection prevalence is estimated at 24% across all ages ranging from 17.4% in Southern Africa and 33.6% in Eastern Africa(8).This poses an alarming situation as Malawi is one country that is resource restrained to avert this enormous burden, as it requires effective and efficient screening programmes to reach out to population at risk for early detection and treatment of the disease in contrast to developed countries. Effective screening programmes in the United States of America have shown 70% survival rate although other countries showed lower survival rates : 58% in Thailand, 42% in India and 21% in Sub-Saharan Africa (7).Cervical cancer screening offers substantial benefits as it aims to detect the disease early and treat (6). Higher early detection has been reported in developed countries like Singapore (81%), compared to those in India (7%) , Costa Rica (33%),Philippines (35%) and Cuba (53%) (6). In Malawi cervical cancer screening services started in 1999 and currently all tertiary, districts and most of the primary health care units in all regions are offering the services for free (15). The government of Malawi endorsed use of Visual Inspection With Acetic Acid as recommended by the WHO for the resource restrained countries like Malawi(16). The test is simple, easy to perform and cost effective and equally effective like cytology and HPV DNA based test. In addition, it is offered on single visit approach where screening and treatment are done simultaneously. Despite the availability of free

services, screening coverage remains critically low at 3.7% for the target population (30-45 years)(9) and another study reported that 25% (17) of the respondents (women 42 years and older) reported to have used cervical cancer screening services before. The WHO recommends that screening programmes should aim at reaching 80% of the population at risk (18). Compared to the WHO recommendation, cervical cancer screening services are under-utilized in Malawi resulting in 80% of cervical cancer conditions presenting to hospital in inoperable stages and majority die (9, 19, 20). Furthermore, studies done in Malawi on cervical cancer screening have revealed a number of factors influencing women in utilizing cervical screening services namely, lack of knowledge and low perceived susceptibility to cervical cancer and screening(17, 21).

However, those studies were conducted in health facilities (17, 21) which the population can be different with general population. The present study therefore was conducted based on communities including urban and rural areas, because determinants to utilization of cervical cancer screening will be different according to residence area. In addition, the study targeted women aged 30-45 in line with Malawi Cervical Cancer Prevention Programme as the target population for screening in Blantyre district, Malawi (15). Therefore, this study was aimed to determine the prevalence of cervical cancer screening and the factors related to the utilization among urban and rural women.

Health Belief Model will guide the study as it hypothesize that perceived risk and susceptibility on disease and its consequences influence people to utilize preventive health services like cervical screening (7, 22). Therefore, ascertaining such determinants that relate to utilization of cervical cancer screening, the information will serve in formulation of health promotion interventions that target the population at risk in consideration of the Malawi guidelines in order to promote awareness, impart knowledge on cervical cancer and screening and increase utilization of cervical screening. The findings are likely to highlight different determinants between the urban and rural population and such information will assist in the development of culturally, acceptable interventions on education and awareness in consideration of diversity and preference.

1.2 Expected outcome of the study

The study will provide useful insights in the formulation and development of cervical cancer screening service delivery interventions that are socially and culturally acceptable by individuals and communities.

1.3 Limitation of the study

The study areas are not representative of all urban and rural areas in Malawi therefore it is difficult to generalize the findings because of the differences in geographical positions and culture. The cross-sectional study design used, makes it difficult to make inferential causal link between the outcome and independent variables and recall bias on some of the information. Furthermore, some respondents may not fully reveal data because of the sensitive nature on some of the instrument items.

1.4 Research questions

The research questions are follows:

1.4.1 What is the prevalence of women utilizing cervical cancer screening in urban and rural areas of Blantyre District, Malawi?

1.4.2 What are the determinants to utilization of cervical cancer screening among women aged 30-45 years in Blantyre, Malawi?

1.4.3. Is there difference among the determinants to urban and rural areas in Blantyre District, Malawi?

1.5 Research Objectives

General objective

1.5.1 To assess determinants to utilization of cervical cancer screening by urban and rural areas in Blantyre district, Malawi.

Specific objectives

1.5.2 To determine prevalence of women that utilize cervical cancer screening in Blantyre, Malawi.

1.5.3 To identify significant determinants to utilization of cervical cancer screening in Blantyre, Malawi.

1.5.4 To compare significant determinants to utilization of cervical cancer screening by urban and rural areas in Blantyre district, Malawi.

1.6 Conceptual framework

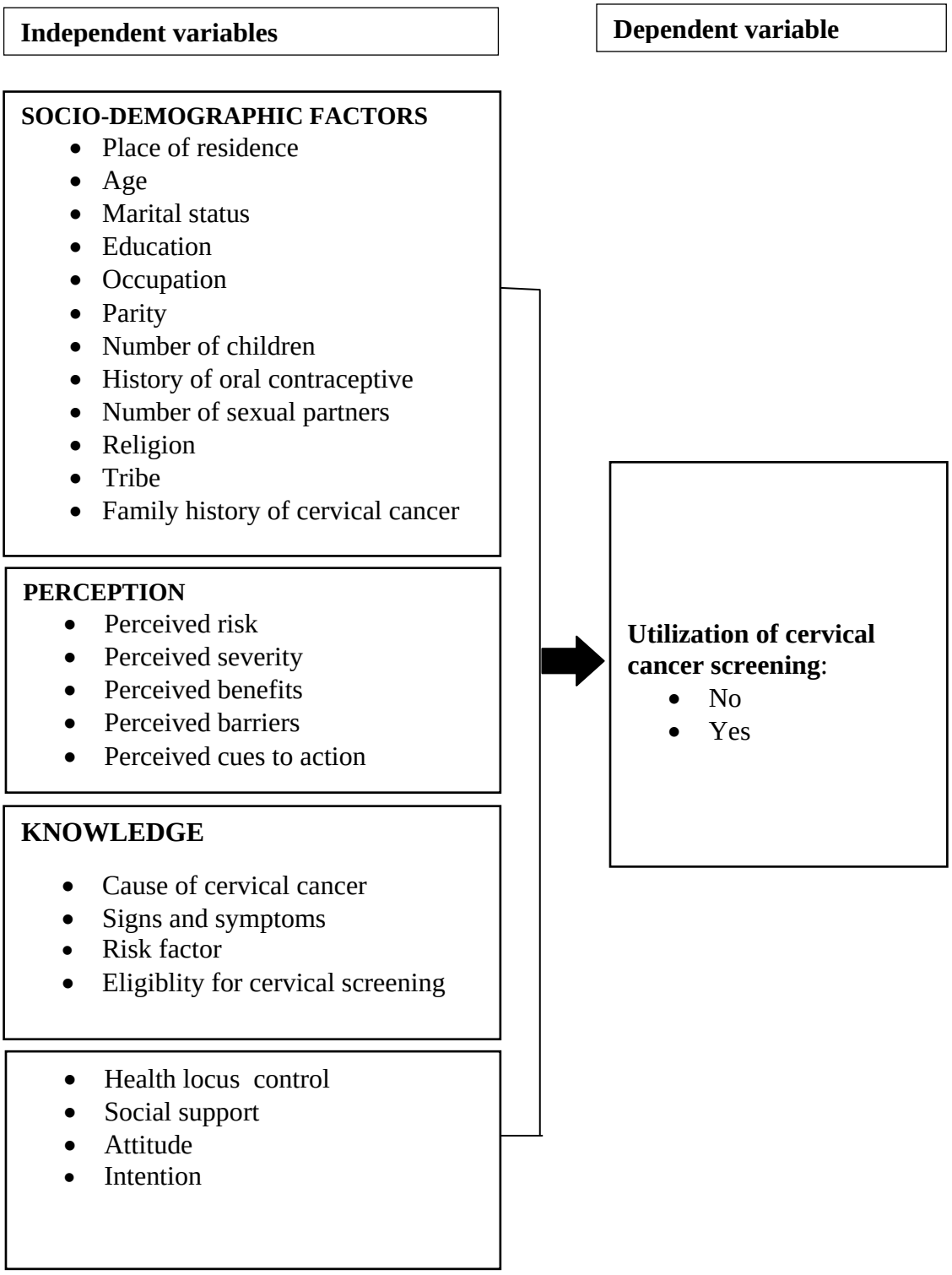

Figure 1.1 Conceptual framework for utilization of cervical cancer screening

1.7 Operational definitions

1.7.1 Dependent variable:

Utilization of cervical cancer screening refers to women being previously screened by the time of the study regardless of the time frame.

1.7.2 Independent variables

Place of residence refers to respondents current location where respondent lives with her family and has been categorized into urban and rural**.**

Age is determined as the number of complete years of a respondent at the time of study.

Marital status refers to respondent situation of being single or married and will be categorized as follows:

Single refers to a respondent who is not married

Married refers to a respondent who is customarily or legally been in union and living with the husband.

Separated refers to a respondent who has been married but for some reasons is no longer living with the husband and they have not customarily or legally divorced.

Divorced refers to a respondent who has customarily or legally end the marriage and is no longer living with the husband.

Widowed refers to a respondent whose husband has died and has not remarried.

Cohabiting refers to a respondent that is living together with a partner and have a sexual relationship without being married.

Woman education status refers to the highest level of education in which the respondents may have passed an examination or successfully completed a course requirement. It is categorized as: none, primary, secondary, college or university.

Woman occupation status refers to a respondent main type of job she does to earn income.

Parity refers to respondent number of pregnancies, deliveries and living children.

Number of children refers to respondent biological or not living children less than 12 years old.

Family history of cervical cancer refers to respondent self- reporting of close relative like biological mother and sister with cervical cancer, whether living or dead.

History of oral contraceptive refers to respondent self- reporting whether never taken oral contraceptive, currently taking or was taking and now stopped with reference to how long ago when last took the oral contraceptive and if currently taking for how long have been using the pills up until time of interview.

Number of sexual partners refer to self-reporting of number of partners whom the respondent had sexual intercourse with until time of interview**.**

Religion refers to respondent's beliefs or convictions in relation to divine being.

Tribe refers to respondent's social division in a traditional society linked by social, economic or blood ties with a common culture.

Family history of cervical cancer is determined by subject's blood or friend relation that has been diagnosed or died of cervical cancer

Perceived risk refers to respondent's belief of the likelihood to contract cervical cancer.

Perceived severity refers to respondent's feelings about the seriousness of contracting cervical cancer and its effects on her life.

Perceived benefits refers to respondent belief of the importance of having cervical screening and the good outcomes she expects when she has gone for screening.

Perceived barriers to be determined by the respondent's belief about the psychological and physical factors that are likely to discourage or impede the respondent to have cervical screening.

Perceived cues to action refers to respondent self- reporting source of information about cervical cancer and screening. Categorized as friends, family, peers, health care workers, radio, posters, church and newspaper.

Knowledge of cervical cancer refers to the respondent level of knowledge on cause of cervical cancer, signs and symptoms, risk factors associated with cervical cancer, eligibility and reasons for cervical cancer screening.

Health Locus of control refers to the respondent's belief of their capability in controlling their health.

Social support refers to respondent's support she receives from family members, friends or church and how it influences her health seeking behavior.

Intention to have cervical screening refers to a respondent's willingness to have cervical cancer screening test within a year from time of interview.

Attitude towards screening refers to a respondent positive or negative feeling of cervical cancer screening

CHAPTER II
LITERATURE REVIEW

This chapter reviews the literature related to this study, categorized under the following topics:

2.1 Cervical cancer screening services

Screening services aim at identifying cervical abnormalities in women that do not have any signs and symptoms, these services are offered either as organized or opportunistic. Organized screening reaches highest number of women at risk and it is planned at national or regional levels, whereas in opportunistic screening, the health care workers maximize the woman visit to a health facility when visiting for different service or is requested by the woman (3, 25). The approach each country adopts depends on the local prevalence of incidence of cervical cancer, HIV prevalence and availability of resources and infrastructure(3, 18).Regardless of the screening approach a country adopts, WHO recommends that women between 30-49 be screened at least once in their life time and have a screening coverage of 80%. It is evidenced that screening women aged 30-40 reduces the risk of developing invasive cervical cancer by 25-36% when they reach 50-60 years as mortality is high in women in this age group (18).

Globally, they were approximately 1 billion women aged 30-49 were not screened that had not been screened in 2102 (1).This suggests that despite the availability of screening services in most countries, the services are being under-utilized.

Nevertheless, in developed countries where they mostly implement well organized cervical cancer screening services, they have been a significant decline in the incidence and mortality from the disease. In Denmark, Finland, organized screening programmes started in 1967 and 1963 respectively and there has been a

decline in the incidence and mortality from invasive cervical cancer (1).This indicates that well organized, planned screening programmes with high screening coverage significantly reduce the burden of the disease.

In developing countries screening programs are not effective and face a lot of challenges namely lack of awareness to the population at risk, incompetent health care providers, lack of commitment by the policy makers, limited access to health care services and lack of functional and effective referral systems. This has attributed to more than 95% of women in these countries not being screened for cervical cancer and having very low screening coverage compared to their counterparts in developed countries(3).

In Malawi screening services started in 1999 and all levels of health system in Malawi offer the services for free. As a recommendation by the WHO on cervical cancer screening programs, Malawi formulated Nation Cervical Cancer Prevention guidelines in 2005 that target women between 30-45 years for screening (15). The guidelines also recommend postpartum mothers to be screened at 3 months, those with Sexually Transmitted Infections with abnormal discharges and lower abdominal pains, women attending Family Planning upon request. The women are to be screened every 5 years and re-screening after one year if previous test was positive and were treated. The guidelines endorses Visual Inspection with Acetic Acid as option choice for screening and Cryotherapy for treatment in those with VIA positive result. This is a single visit approach where screening and treatment are offered at the same time. The method is easy and simple to perform and nurses, clinicians are trained on the procedure(15). Despite the free availability of the services only 3.7% of the target population are screened (9).

2.2 Benefits and risks of cervical cancer screening

It takes 10-20 years for the precancerous lesions caused by HPV to develop into invasive cervical cancer and this offers an opportunity for early detection and treatment of these precancerous cells (2). Early detection of cervical cancer leads to good prognosis that result in reduction of mortality and health care costs (26)

However as screening targets asymptomatic women, this has the likelihood of having undesirable outcomes such as psychological problems like anxiety, fear of being tested and the interpretation that positive result implies cancer diagnosis (27). Therefore need for extensive education and awareness programs to demystify such beliefs.

2.3 Theoretical framework

Health Belief Model

The HBM was developed in the early 1950s by a group of social psychologists at the U.S. Public Health Service in an attempt to understand the widespread failure of people to accept disease preventives or screening tests for the early detection of asymptomatic disease(28)

In this present study the model has been chosen due to its ability to predict utilization of preventive screening services against a particular disease and its focus on individual-level approach to predict health behavior and that health decision making process is a deliberative process (29). The model has been applied with success to predict utilization of cervical screening services (29-33).

The model has 5 main components namely perceived risk (susceptibility), perceived severity, perceived benefits, perceived barriers and cues to action as depicted in fig .1 (28).

Perceived risk (susceptibility): This is the first category of model and explains the belief that for an individual to take action against a disease, they need to realize their vulnerability of contracting the condition.. To echo this, perceived risk was associated with previous cervical cancer screening among Vietnamese women that used Health Belief Model (33) it is anticipated that those women with high level perceived risk will be screened for cervical cancer upon realizing their vulnerability to contracting the disease.

Perceived severity: This category is concerned with how threatening the condition is to an individual **(34).** An individual perceives the disease causing serious disruptions in their daily lives when they contract the disease and if it is not treated. This perception towards the disease is likely to direct women to be screened for cervical cancer for early detection and treatment.

Perceived benefits: This category focuses on the effectiveness of the recommended action to reduce the risk of contracting the disease. Therefore women who sufficiently believe they are at risk of contracting cervical cancer and fear the consequences of having the disease are likely to be screened (34).

Perceived barriers: This category emphasizes on the possible impediments an individual anticipate to encounter in taking the recommended action in terms of financial costs, time demands and unpleasant feelings like embarrassment, pain and anxiety (28). This suggests that high level perceived benefit combined with less perceived barriers increases likelihood for women to seek cervical cancer screening (29). Thefore women with less perceived barriers to cervical cancer screened will be more likely to be screened.

Cues to action: These are considered as source of information that trigger an individual to perform the recommended action in preventing the occurrence of disease (28). Family members, peers, friends, community leaders and health care providers play a significant role in the provision of information regarding cervical cancer and screening that will influence women to utilize cervical cancer screening. Authors in Iran study stated that women had regular pap smear test as recommended by their physician (31).

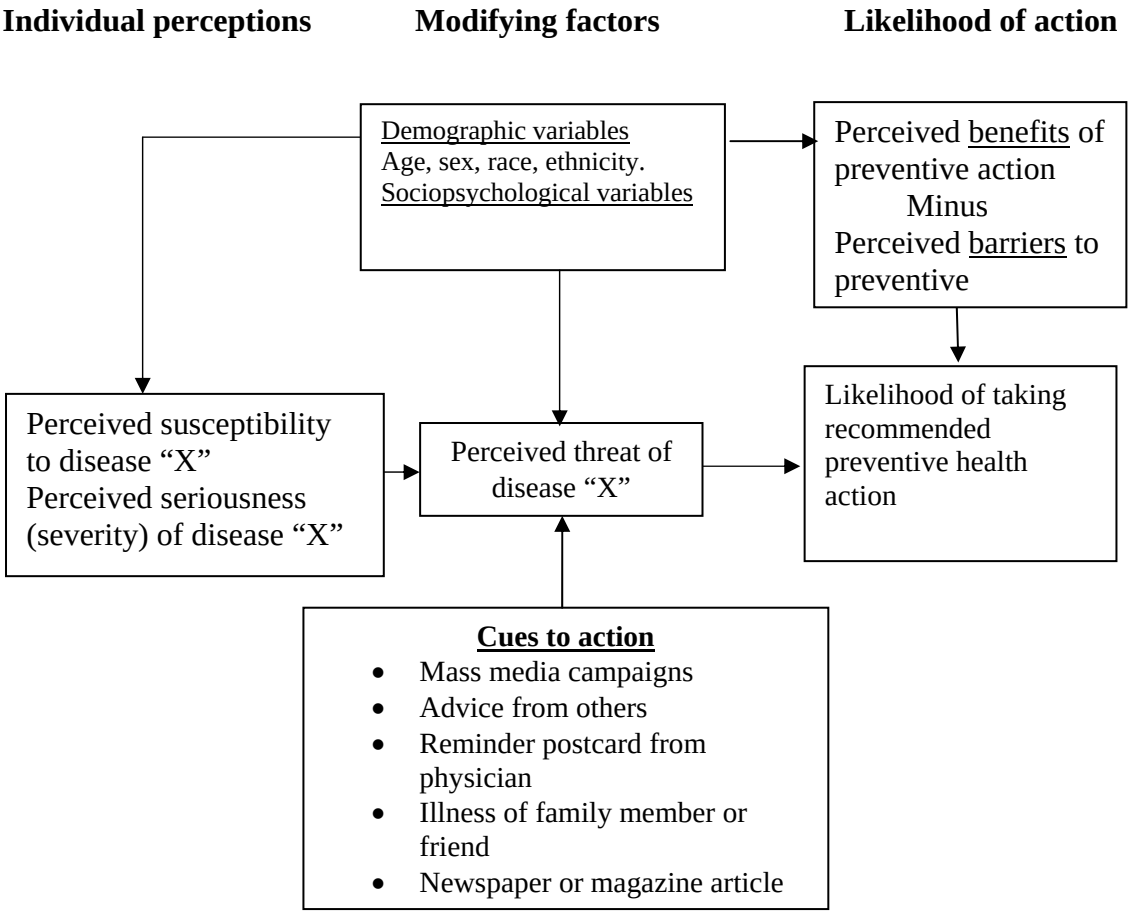

Figure 2.1 Health belief Model

2.4 Related studies

- **Socio-demographic factors**

Age

Invasive Cervical cancer is common in women 40 years and older and screening of women in this age group has an impact in reducing the morbidity and mortality from the disease. However different studies have shown different results on the uptake of screening in this age group, though the difference could be attributed to the variation in coverage of the target population. Older women are more likely to utilize the reproductive health services than younger women and be able to be screened despite their reason for visiting the health facility would be for a different cause (13). This is consistent to the finding in Tanzania that investigated the promoters and barriers to cervical cancer screening, and found that women aged 40-49 were more likely to use cervical screening than those less than 40 years old (35). A study in China reported that there was an increase in uptake for cervical cancer screening in women older than 45 years old (36). Consistent finding was made in a study among Vietnamese and Korean women as young women who were less than 40 years related their age to not be at risk of medical problems and not willing to discuss about it as they perceived themselves not be at risk and showed no intention of seeking cervical screening contrast to their counterparts women 40 years and old who they were at risk of cervical cancer and sought screening services (37).

In relation to the previous studies similar finding is anticipated as women older than 40 are less likely to utilize cervical cancer screening because they do not frequently attend antenatal. postnatal, well baby or family planning clinics to give them an opportunity to be screened(17).Malawi National guidelines on cervical cancer prevention indicate that women between the ages of 30-45 are to be screened at least every 5 years (15). World Health Organization recommends the optimal time for a woman to screen is between 30-45 (3).

Marital status

Being married or single predispose women to cervical screening. A study in India found that married women were likely to be screened and the finding had two proposed reasons: firstly married women may receive more frequent obstetric care hence making them more responsive to cervical screening and secondly is the husband positive emotional support that plays an important role in deciding to seek cervical cancer screening(38, 39). This is a similar finding in Argentina that indicated unmarried women were 5 times more likely of not having a pap smear compared to the married women(40).In Norway, a similar finding was reported that single women were less likely to seek cervical screening and this was attributed to lack of encouragement from a partner and that single women rarely receive obstetric care(41). A study in Tanzania that recruited participants after home visit or awareness raising campaigns on cervical cancer, it emerged that married women in both groups representing 80% and 78% respectively attended screening(42).A qualitative study in New Mexico in United States of America on Vietnamese and Korean women showed that married women with children indicated to be less concerned of showing their reproductive parts and were more compelled to have cervical cancer screening than single women. They attributed the behavior to previous encounter with gynecological examination they had to go through child birth and felt there was nothing insidious with cervical cancer screening (37). As the results from the low resource settings have consistently reported of the strong association between being married and likelihood of been screened, it is of importance to investigate on the barriers the unmarried are less likely to be screened despite having equal or less risk factors compared to the married women.

In summary, from the previous studies marital status is a predictor for cervical cancer screening. Services (40). Therefore, in the current study it is expected to reveal the association between marital status and utilization of cervical cancer screening in both urban and rural women and that most likely married women would have previously been screened than single women.

Occupation

Women socioeconomic status as determined by occupation, predisposes women to utilization of cervical cancer screening. Women with high socio-economic status are likely to use the screening services unlike their counterparts of low socio-economic status. Occupation has been reported as a predictor to utilization of cervical cancer screening through its influence on income. Women with regular and stable income are likely to curb the barrier of transportation costs and be able to seek cervical cancer screening. In support of this, investigators in Latin America found that women with good income were more likely to have a pap smear as they faced few barriers to transportation and household responsibilities (43). In line to this, a study in Malawi found that women who were employed were more likely to use cervical screening services than the unemployed (17).Another study in Canada among immigrant women showed that low uptake in cervical cancer screening among Sub-Saharan African women was attributed to be from low income households (44).

In Malawi cervical screening services are offered free and barrier due transportation costs are common to women with low socioeconomic status(17). It is more likely that the unemployed women will be less likely to utilize cervical cancer screening due to transportation barriers. In comparison by place of residence, the urban women will utilize cervical cancer screening as mostly they have stable income and face few barrier to transportation costs.

Education level

High education has been associated with increased likelihood for women to utilize screening services as compared to the less educated from the assumption that educated women are able to understand the benefits of cervical screening unlike the educated. Studies have reported that less educated women are associated to not using cervical cancer screening services whether for the first time or for follow up after previous VIA positive result(45).A similar finding in India suggested that education influences screening behavior through its effect on income and individual knowledge about cervical cancer screening and that the less educated experience difficulties in understanding the benefits of screening hence affecting the utilization of cervical cancer screening services(40). Contradictory to this was a finding among college

students in South Africa that showed only 15% of the respondents had a pap test though 53% of them had knowledge on cervical cancer(46).

The contradictory findings suggest that being educated, knowledgeable about the disease is not a prerequisite that women will likely utilize screening services as other factors may also play role in influencing women to go for screening.

Parity

Sexually active women are at risk for cervical cancer, however women who have history of increased parity are at higher risk for the disease. Parity in cervical cancer screening programs is inversely important as is contributory to the progression of HPV infection to cervical cancer. Despite high causal link between HPV infection and cervical cancer, host factors like parity play a role in the development of the disease(2). Of particular interest is the high parity as the odds are high for women infected with HPV to progress to cervical cancer compared to the nulliparous or women who were pregnant less than two times (47, 48). Malawian women on average are expected to have 5.7 live births (49, 50). Therefore it is important for women of high parity to be screened for cervical cancer as they are at high risk of developing cervical cancer later in their lives. Nevertheless, in Kenya a study revealed no statistical significance between parity and being screened (51).

Therefore it is expected high parity will be a predictor to utilization of cervical cancer screening in consideration that average Total Fertility Rate for Malawian women is high and most likely to have frequent obstetric care and having an opportunity to be screened.

Family history of cervical cancer

Family member encounter with cervical cancer has a positive influence on women uptake on cervical cancer screening. This was echoed in a study where women perception on the risk of having cervical screening was shown to have increased where a family member was diagnosed with cervical that consequently lead them to have cervical screening, though in contrast, no family history of cervical cancer made women think they are not at risk of having cervical cancer (37). Consistent finding was noted in Turkey for those women that reported to have family history on cervical

cancer considered themselves at risk and had previously been screened for cervical cancer (52).In Malawi study, women aged 42 and older showed that cervical cancer screening is only useful if one has a family history of the disease (17).

History of oral contraceptive

Use of oral contraceptive for more five years increases women risk of developing cervical cancer. Despite this, WHO does not discourage women using it as a family planning method (18).In a case control population based study in Costa Rica among women infected with HPV they found association of HPV progression to cervical cancer with use of oral contraceptives (47). Therefore due to effect of oral contraceptive and development of cervical cancer, there is need for women to have cervical cancer screening. In support of this a study in Norway revealed that women that were using oral contraceptives were more concerned about their health status as such utilizing preventive health services like cervical cancer screening (41). In the same vein women from both urban and rural are more likely to utilize cervical cancer screening.

Number of sexual partners

Risky sexual behavior like multiple life time sex partners increases the risk of HPV infection which is the primary cause of cervical cancer (53). Cervical cancer screening helps to diagnose HPV infection thus offering early treatment and prevent progression to invasive form of cervical cancer. A study revealed that women that reported multiple sex partners had no low uptake in cervical cancer screening (47). It is also anticipated in this study that those women who report multiple sex partners will utilize cervical cancer screening.

Religion

Religious have been reported to influence use of cervical cancer screening (54). In Turkey religious beliefs regarding virginity and having cervical cancer influenced their behavior to have pap smear (55). In Malawi, a study indicated that some religious beliefs like Jehovas witness do not allow women to have preventive health services like cervical cancers screening (16).

- **Perception on cervical cancer and screening**

Perceived barriers: Embarrassment

In most cultures, female genitalia is considered to be private and this succumb to women shun away from cervical screening considering the vulnerable position women are put during the procedure(56, 57). Consistent to this, a similar finding was reported among female college students in United States of America who indicated that embarrassment of the procedure was a barrier for their non-uptake in screening services (58). Likewise a study among nurses in Taiwan revealed that nurses were less likely to have pap smear than the general population despite the assumption that they are knowledgeable of the disease and embarrassment due to the vulnerable position women attain during the procedure discouraged them from seeking cervical screening(59). In settings where the procedure is performed by a male practitioner women feel vulnerable and reluctant to use the services due to culture beliefs and prefer to be screened by female practitioners and also the difference in culture beliefs between the provider and women(7, 60).A study in Uganda classified embarrassment in community context whereby women felt discomfort about the cervical screening because of how the women were perceived by others in the community and personal embarrassment referred to shyness or discomfort with her own genitalia (61). In Sub-Saharan Africa women demographics are similar hence the same description can apply in Malawian women context, indicating that community perception of cervical screening and shyness of own genitalia can impede women from utilizing cervical cancer screening. A systematic review on correlational and experimental studies done between 1989-2011 showed that 100% of the correlational studies done on adolescents, older women, economically disadvantaged groups, female doctors embarrassment was the commonest barrier related to under- utilization of cervical cancer screening services(62) Notably is that embarrassment often refers to shame, shyness, frustration and discomfort that women experience during gynecological examination that often expose private parts resulting in women not seeking cervical screening (63).

As it has been stipulated that stigma can be detrimental as it affects utilization of cervical screening, health education and awareness should aim to ensure that women, families and the community at large understand that cervical cancer is preventable and treatable and women need to be supported as they seek reproductive services (2).

Perceived barrier: Access of health service

Utilization of health service depends on whether the intended population have access to it or not. In the similar vein, cervical screening services are affected by the same notion. Service provider's unavailability relates to utilization of cervical cancer screening. This is supported by a study in Indonesia that indicated that women were not utilizing the screening services due to unavailability of health care providers (64). A study in Ghana among health workers revealed that 85% of the respondents had never been screened because of lack of access to health facility despite having knowledge on cervical cancer and benefits of screening (65) this reflects inefficiency in health care delivery systems in most African countries.

Client satisfaction highly relates to utilization of health services and the proximity of health facility to the catchment population determines the distance the clients and patients have to travel to the facility and use the service. Therefore the more time it takes to travel to a health facility increases the likelihood of women not using the service and considering that cervical cancer is asymptomatic this will eventually reduce the need to seek preventive measures health service like cervical cancer screening.

Long waiting has been reported as a barrier to low utilization of cervical cancer screening (21).Time is a precious commodity for human kind and when it is being wasted whilst waiting for preventive care like cervical cancer screening, dire consequences occur such as attrition. The objective and aim of cervical screening is for early detection of precancerous cells in asymptomatic women that normally feel not sick. Therefore waiting for long times discourages women from utilizing the services. Unfortunately this also reflects on the efficiency and effectiveness of the health service delivery resulting in unsatisfied clients that are more likely not to utilize preventive health services (20).

Knowledge on cervical cancer and screening

Level of knowledge on cervical cancer and screening affects its cervical cancer screening. For example women with low level knowledge on cervical cancer are more likely to have cervical cancer screening (21, 66). In Turkey authors indicated that women who were informed about cervical cancer had high rate for pap smear testing unlike those that had no information on cervical cancer and screening (52). Likewise in Malaysia researchers attributed low uptake of cervical cancer screening to lack of knowledge on the disease (67). Similarly, in USA Florida researchers found the major barrier to not utilizing cervical cancer screening was due to lack of knowledge on the disease (54). Inadequate knowledge on cervical cancer has also been reported as factor influencing cervical screening among married Kuwait women (68). As the present study employs HBM to identify the determinants to cervical cancer screening, it is been reported that knowledge on cervical cancer and risk factors has impact on perceived risk and severity of cervical cancer as such influence women in uptake of cervical cancer screening (26). Therefore, it is expected that those women with high level knowledge on cervical cancer and risk factors will likely be screened for cervical cancer.

Health Locus of control

This is a un-dimensional measure of people beliefs that health is or is not determined by their behavior as it digs into the beliefs that the source of reinforcements for health-related behaviours is primarily internal, a matter of chance or under the control of powerful others (69). It is believed that a person is more likely to utilize health service when they have a strong internal locus of control. Study among Hong Kong Chinese women found that the women that perceived to have control over their health were more inclined to participate in health promoting actions like cervical cancer screening (26). Other factors like health system, doctors and nurses influence health of an individual though a study on adherence to screening for colorectal cancer found that, respondents believed that powerful others (doctors, health system and nurses) had little influence on their health (70). Despite this finding it is anticipated that women with high score on health locus control will be more likely to use cervical cancer screening.

Social support

This is a dimensional of psychological factor that is believed to be important for individuals in deciding to utilize a health service or adhere to screening program (70). In a study that recruited women newly diagnosed with invasive cervical cancer in identifying barriers to screening, found that lack of family contributed to non-screening with AOR of 3.5 and to support the finding it was also reported that these women prioritized care of their family member and not theirs (71). A study in Argentina found that being unmarried was the strongest predictor for not utilizing cervical cancer screening as these women lacked social support compared to their married counterparts who had social support from their husbands (40). Similarly, authors in Malaysia reported that those women that had encouragement and support from their husbands were more likely to have pap smear unlike those that had no support from their spouses (72). Social support from health care providers is critical in influencing women to utilize cervical cancer screening. A study in the USA found that women that received such support from their physician were encouraged to go for pap smear (73). Therefore it is expected that those women having social support are more likely to utilize cervical cancer.

Attitude

Positive attitude of health practitioner plays an important role in women attitude towards cervical cancer and screening and this was demonstrated among Somali as they indicated their when their physicians have positive it motivates them to be screened and eventually have positive attitude of cervical screening (60). In Maldives, study participants with positive attitude had been screened unlike those that has pessimistic attitude (74).

Intention

Intention is the best predictor of behavior **(75).** As such it is anticipated that those women with intention to utilize cervical cancer are screened for cervical study**.**

CHAPTER III
RESEARCH METHODOLOGY

3.1 Study design

A cross-sectional community based study design was conducted to determine factors related to utilization of cervical cancer screening among urban and rural women in Blantyre district, Malawi.

3.2 Study population

The study population consisted of women 30 to 45 years from urban and rural areas in Blantyre district, Malawi, who are the target population for cervical cancer prevention program in Malawi (15).

3.2.1 Inclusion criteria

Women aged 30-45 years residing in urban and rural areas of Blantyre District that had been screened and not screened.

3.2.2 Exclusion criteria

All women who had hysterectomy as they do not require cervical cancer screening and women who cannot communicate.

3.3 Study area

Blantyre District

The district is located in the Southern part of Malawi comprising of 8 administrative areas under Traditional Authorities. The district is the largest

commercial and industrial capital of Malawi and faces high rate of urbanization with people looking for employment. According to the 2008 household census, the district had a total population of 999,491 and 497,290 (48%) were females.

The health care system in the district provides preventive, curative and rehabilitative health services. The Government, through the Ministry of Health is the major health care provider. However, private practitioners and Christian Health Association of Malawi (CHAM) also provide health services in the district. All government health facilities provide free health services to the public. CHAM offers services at a subsidized cost whereas the private hospitals and clinics offer paying services. There are 20 government public health centers, 4 private hospitals, 3 CHAM hospitals and 100 private clinics and one tertiary hospital in the district. The hospitals are clustered in the city and health centers are allocated within the city and the rural areas and are accessible by roads. Currently no data indicates how many facilities are offering the cervical cancer screening services.

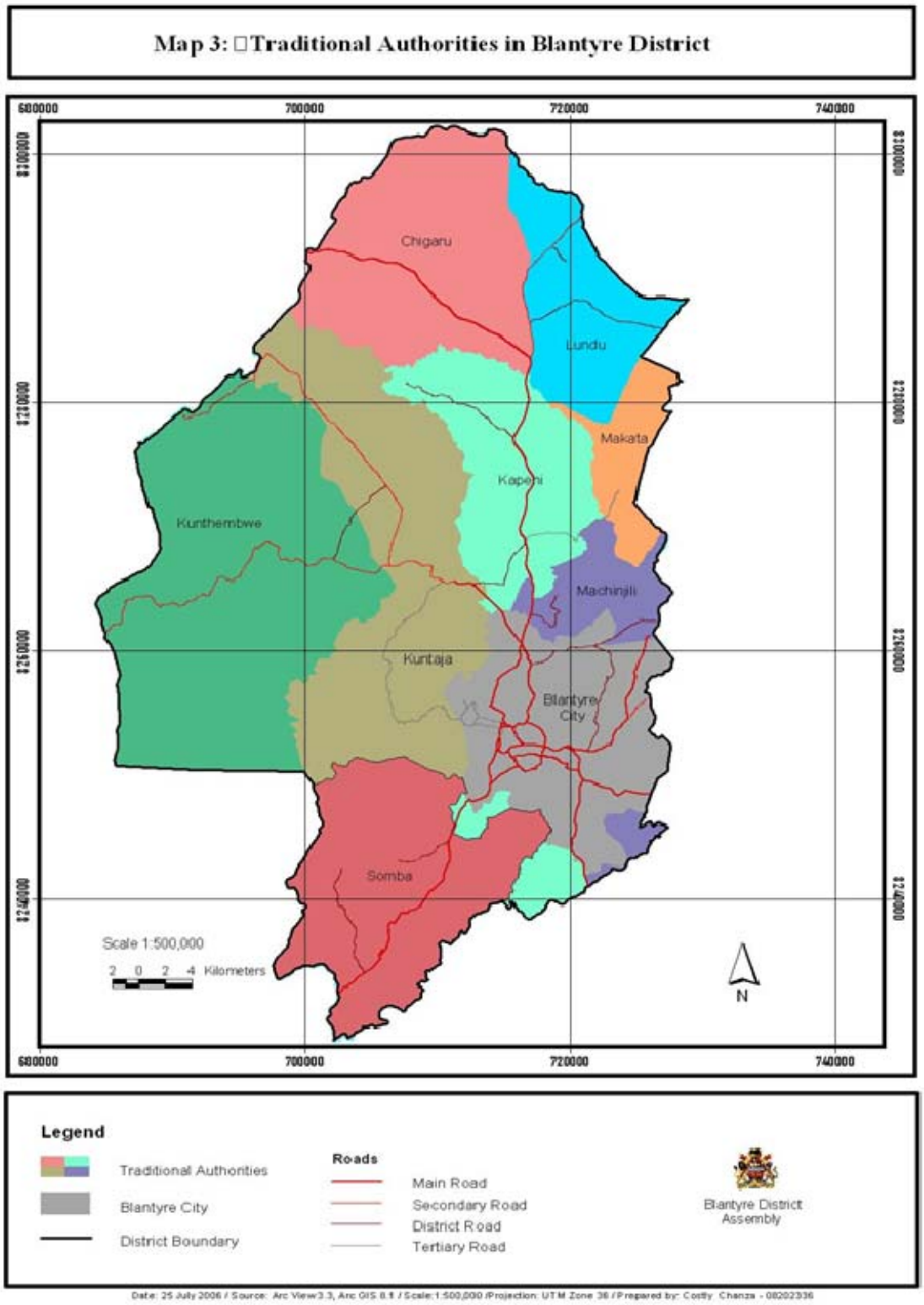

Figure 3.1 Map of Blantyre District in relation to Administrative areas

3.4 Sample size

A study sample was determined by using statistical formula for sample size calculation.

$$n = \frac{z^2 p(1-P)}{E^2}$$

$$= \frac{1.96^2 \ 0.33(1-0.33)}{0.06^2}$$

= 236 and plus 10% to cover for missing and incomplete data, hence total number was 260.

Z = 1.96 when CI at 95% (confidence interval)

Precision required was within the error of 0.06. Thus E (margin of error) was equal to 0.06 to have small standard error.

P = estimated proportion for those women utilizing cervical cancer screening is 33.6% (.33), from previous study in Malawi (23)

n = desired number of women to be recruited in the study.

Due to problems in accessing some parts of the urban and rural areas, only a sample of 257 women were recruited in the study.

3.5 Sampling technique

Purposive sampling was used to draw a sample for this study. Firstly, purposive selection of 3 administrative areas of Blantyre District (Ref. fig 2). Two areas representing rural and one area urban. Secondly purposive selection of communities from the three areas and lastly random selection of households from the identified communities to recruit women that met the study criteria. If a household had more than one woman meeting the inclusion criteria, only one was randomly selected. A total of 134 and 123 from urban and rural areas were recruited respectively.

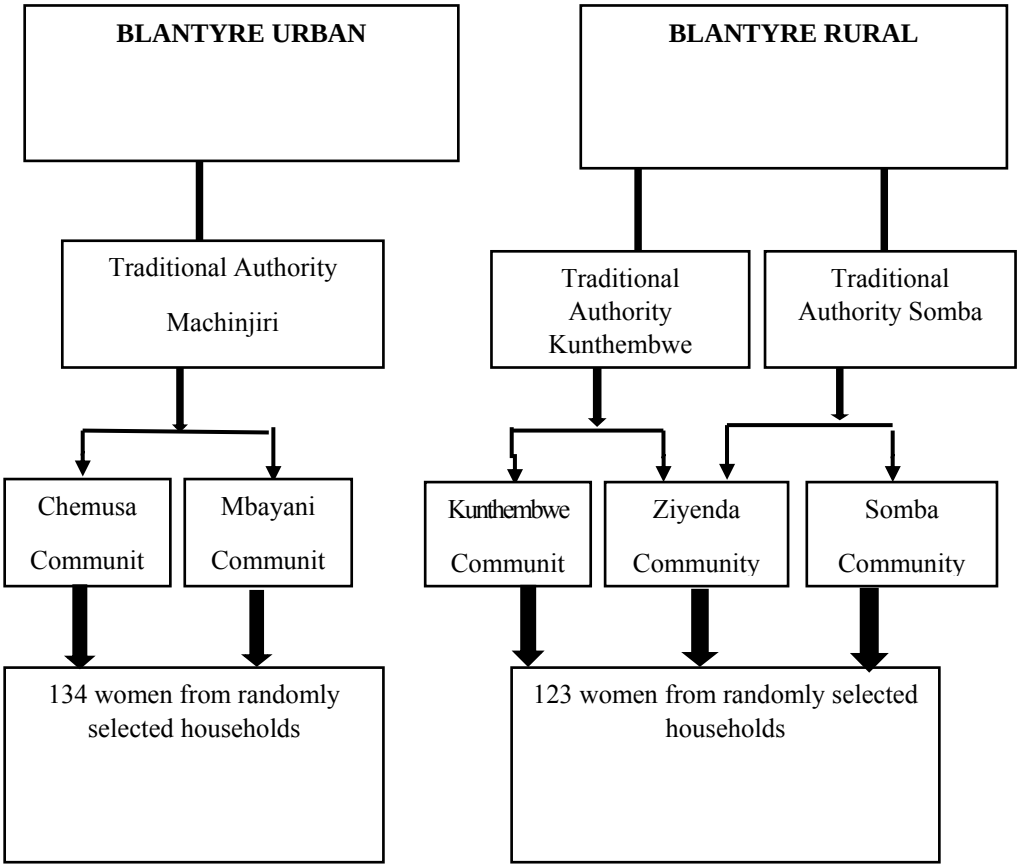

Figure 3.2 Purposive sampling method.

3.6 Data collection instrument

A structured questionnaire was used to gather data during the study. The questionnaire was developed by the researcher after literature review. The questionnaire has 109 questions that reflect the conceptual framework of this study.

The questions are divided as follows:

3.6.1 Socio-demographic factors

There are **22 questions** seeking basic information about the respondents, namely: age, marital status, woman and husband education status, woman and husband occupation status, parity, place of residence, religion, tribe, use of oral contraceptive, number of sexual partners, family history of cervical cancer and cultural beliefs.

3.6.2 Knowledge about cervical cancer and screening

The section had **21 questions** about cause of cervical cancer, signs and symptoms, risk factors and cervical cancer screening eligibility and frequency. Respondents were scored 1point for correct answer and 0 for incorrect answer and this applied to the positive questions. False questions were scored in vice versa. The total score was 21.

Knowledge score of cervical cancer and screening was classified into two groups and the median value was used as a cut-off point for the two groups of:

- High level (≥11)
- Low level (<11)

3.6.3 Perception on cervical cancer and screening

The section measured women perception regarding cervical cancer and screening in areas of perceived risk, severity, benefits, barriers and cues to action. A three point rating scale was used to measure women perception on cervical cancer and screening.

3.6.3.1 Perceived risk

The section had **7 questions** that were both positive and negtive. The answer to each question was measured on a 3 point scale with the following responses: **agree, not sure and disagree**. The positive questions were scored as follows: Disagree=1, Not sure=2, Agree=3.

The negative questions were scored as follows: Agree=1, Not sure=2, Disagree=3.This sub-category of perception was classified into 2 groups by using the median value as the cut- off point as:

- High level (≥ 20)
- Low level (< 20)

3.6.3.2 Perceived severity

The section had **9 questions** that were both positive and negative. The answer to each question was measured on a 3 point scale with the following responses: **agree, not sure and disagree**. The positive questions were

scored as follows: Disagree=1, Not sure=2, Agree=3 and negative questions were scored vice-versa. The score was categorized into two groups using median valueas follows:

- High benefit (≥23)
- Low benefit (<23)

3.6.3.3 Perceived benefit

This section had **9 questions** that were both positive and negative. The answer to each question was measured on a 3 point scale with the following responses: **agree, not sure and disagree**. The positive questions were scored as follows: Disagree=1, Not sure=2, Agree=3 and negative questions were scored vice-versa. The score was categorized into two groups using median valueas follows:

- High level (≥23)
- Low level (<23)

3.6.3.4 Perceived barrier

There were had **11 questions** that were both positive and negative. The answer to each question was measured on a 3 point scale with the following responses: **agree, not sure and disagree**. The positive questions were scored as follows: Disagree=1, Not sure=2, Agree=3 and negative questions were scored vice-versa. The score was categorized into two groups using median value as follows:

- High level (≥31)
- Low level (<31)

3.6.3.5 Perceived cues

The section had 4 questions with multiple responses, and 1 point was given for each response.

3.6.3.6 Health locus of control

There were **9 questions** to measure the health locus control of women in the study. All questions were scored on 3 rating scale on both the positive and negative responses. The positive responses were scored as follows: Disagree=1, Not sure=2, Agree=3 and negative questions were scored vice-versa. The score was categorized into two groups using median value as follows:

- High level (≥27)
- Low level(<27)

3.6.3.7 Social support

The section had **4 questions.** The responses were scored on 3 rating scale on both the positive and negative. The positive responses will be scored as follows**:** Disagree=1, Not sure=2, Agree=3 and negative questions were scored vice-versa. The score was categorized into two groups using median value as follows:

- High level (≥12)
- Low level (<12)

3.6.3.7 Attitude

The variable was measured with **5 questions** that had responses on 3 rating scale. The positive responses were scored as follows: Disagree=1, Not sure=2, Agree=3 and negative questions were scored vice-versa. The score was categorized into two groups using median value as follows:

- Positive attitude (≥15)
- Negative attitude (<15)

3.6.3.8 Intention to have cervical cancer screening

The variable was measured by **2 questions**. Response to have cervical cancer screening had 3 rating scale of yes, no and not sure. Two categories were used to classify women intention to have cervical cancer screening. During analysis no responses and not sure responses were combined into “no” category of classifying intention to cervical cancer screening.

3.6.3.9 Dependent variable

Utilization to cervical cancer screening was measured by asking women if they had previously been screened for cervical cancer and the responses were:

- No
- Yes

Therefore, all women that agreed to have previously been screened were considered to utilize cervical cancer screening.

3.7 Validity and reliability of study instrument

The questionnaire was checked for content validity by the advisor team and the experts at Mahidol University. Pretesting of the questionnaire was conducted with 30 women of the same characteristics of the study sample in Chiradzulu District in the southern region of Malawi. The knowledge questions had value of 0.624 for KR-20, Cronbach's alpha for perception was 0.654 and unclear questions or statements were revised by the researcher.

3.8 Data collection procedure

Two ethical clearances were obtained from Mahidol University Ethics Committee and in Malawi from National Health Sciences Research Committee prior to conducting the study.

Data collection steps were as follows:

1) Obtaining letter of approval from the Blantyre District Council Office to conduct the study in the urban and rural areas of Blantyre District.

2) Identification of the areas and communities where the women were recruited into the study.

3) Identification of research assistants and conducting one day training for the assistants. The aim of training was to introduce the research instrument, procedure

on how to recruit participants into the study (participant information, informed consent, privacy and confidentiality)

4) Briefing of the community leaders from the identified communities on the purpose of the study, target participants and expected duration of the study and obtained verbal consent.

5) The respondents were approached in their homes, and briefed on the purpose of the study and obtain written informed consent before starting of interview. Face to face interviews were conducted using structured questionnaire.

6) In case a household had more than one respondent, one respondent was randomly selected.

7) Each respondent was given a code to ensure anonymity and confidentiality.

8) At the completion of each interview and before leaving the community, all questionnaires were checked for completeness and seek clarification if any from the respondents as well as the research assistants.

9) Answered questionnaires were kept at one place under lock and key and only the research team had access to the questionnaires.

3.9 Data processing and analysis

- The data were entered and processed using SPSS version 16.0.
- Descriptive statistics were used to calculate frequency and percentage.
- Chi-square test was used to examine association between each independent variable(socio-demographic factors, perception, knowledge, health locus of control, social support, attitude and intention and the dependent variable (utilization of cervical cancer screening) and significance value for association was considered at p-value<0.05.
- Multiple logistic regression was used to determine significant predictors to utilization of cervical cancer screening between urban and rural women in Blantyre District, Malawi. Only covariates ($p < 0.20$) identified in univariate analysis were

included in the regression analysis with utilization of cervical cancer screening as the dependent variable.

CHAPTER IV
RESULTS

The purpose of this study was to assess the prevalence of utilization of cervical cancer screening, and identify significant factors by urban and rural areas in Blantyre District Malawi. The study population consisted a total of 257 women aged 30-45 years (urban 134 and rural 123).

The descriptive characteristics of the respondents are indicated in table 4.1, the highest percentage of the respondents were from urban areas (52.1%) and 50% of the respondents were in the age category between 30-34. Between urban and rural, 56 % of this age group was from urban whilst the rural had the majority of respondents of age group 41-45 years. According to marital status, 86% of the respondents were married with high percentage (93.3%) from the urban areas. In rural areas, 20.3% were unmarried compared to 6.7% from the urban areas. On education, 52.5% had attended primary school level. Most urban women (47.0%) had attended secondary school or higher level education compared to 12.2% of the rural women. The majority of women from rural areas (26.8%) had never attended any formal education compared to 8.2% from the urban. On number of pregnancies, quarter of the women had never been pregnant or less than 2 times. Between urban and rural and among those women that had been pregnant 5 times or more, the majority (52%) were from the rural areas. Majority of women had more than 2 children (66.9%). By place of residence, high proportion of rural women (81.3%) had more than 2 children compared to urban women (57.7%). Regarding use of oral contraceptive, only 17.9% (n=46) used oral contraceptive and majority (n=33) were from urban areas. On number of sexual partners 52% indicated to have either zero or one life time sex partner and only 6% indicated to have more than 4 life time sex partners and the majority (n=10) were from rural areas.

Table 4.1 Socio-demographic characteristics of respondents according to urban and rural areas (n=257)

	Total	Urban	Rural	P value
	N (%)	N (%)	N (%)	
Place of residence				
Urban	134(52.1)	134(100.0)	-	-
Rural	123(47.9)	-	123(100.0)	
Age groups				
30-34	129(50.0)	75(56.0)	54(43.9)	0.009
35-40	83(32.3)	40(29.9)	43(35.0)	
41-45	45(17.5)	19(14.2)	26(21.1)	
Marital status				
Married	223(86.8)	125(93.3)	98(79.7)	0.001
Unmarried	34(13.2)	9(6.7)	25(20.3)	
Respondent education				
Primary	135(52.5)	60(44.8)	75(61.0)	<0.001
Secondary or higher	78(30.4)	63(47.0)	15(12.2)	
Never attended	44(17.1)	11(8.2)	33(26.8)	
Number of pregnancies				
0-2	64 (24.9)	47 (35.1)	17 (13.8)	<0.001
3-4	95 (37.0)	53 (39.6)	42 (34.1)	
5+	98 (38.1)	34 (25.4)	64 (52.0)	

Table 4.1 Socio-demographic characteristics of respondents according to urban and rural areas (n=257) (cont.)

	Total	Urban	Rural	P value
	N (%)	N (%)	N (%)	
Number of children				
0-2	85(33.1)	62(46.3)	23(18.7)	<0.001
2+	172(66.9)	72(57.7)	100 (81.3)	
Use of oral contraceptive				
No	211(82.1)	101(75.4)	110(89.4)	0.003
Yes	46(17.9)	33(24.6)	13(10.6)	
Number of sexual partners				
0-1	134(52.1)	74(55.2)	60(48.8)	0.259
2-3	108(42.0)	55(41.0)	53(43.1)	
4+	15(5.8)	5(3.7)	10(8.1)	
Family history of cervical cancer				
Friend or Neighbor				
No	244(94.9)	123(91.8)	121 (98.4)	**0.016**
Yes	13(5.1)	11 (8.2)	2 (1.6)	
Blood relation				
No	207(80.5)	100(74.6)	107 (87.0)	**0.012**
Yes	50(19.5)	34 (25.4)	16 (13.0)	
Religion				
Christian	233(90.7)	125(93.3)	108(87.8)	0.132
Moslem	24(9.3)	9(6.7)	15(12.2)	
Tribe				
Chewa	87(33.9)	22(16.4)	65(52.8)	<0.001
Ngoni	55(21.4)	33(24.6)	22(17.9)	
Yao	39(15.2)	16(11.9)	23(18.7)	
Others	76(29.6)	63(47.0)	13(10.6)	

Regarding family history of cervical cancer of either friend or blood relation, in both areas, the majority had not indicated to have such history. On religion,

90% of the respondents were Christians likewise when compared by urban and rural areas. Most of the respondents (34%) were from Chewa tribe. By place of residence, the urban had the majority (24.6%) of Ngoni respondents whilst the rural had majority (52.2%) Chewa respondents.

Table 4.2 Utilization of cervical cancer screening among urban and rural respondents (n=257)

	Total	Urban	Rural	P
	N (%)	N (%)	N (%)	value
Heard about cervical cancer				
No	75(27.6)	17(12.7)	58(43.9)	<0.001
Yes	186(72.4)	117(87.3)	69(56.1)	
Source of information on cervical cancer				
Hospital	111(43.2)	67(50.0)	44(35.8)	<0.001
Radio	48(18.7)	20(14.9)	28(44.7)	
Never heard	75(29.2)	17(20.9)	58(16.3)	
Others	23(8.9)	19(14.2)	4(3.3)	
History of previous cervical cancer screening				
No	223(86.8)	110(82.1)	113(91.9)	0.021
Yes	34(13.2)	24(17.9)	10(8.1)	
Reasons screening was not done (n=223)				
Lack of interest	102(39.7)	70(52.2)	32(26.0)	<0.001
Lack of knowledge	86(33.5)	21(15.7)	65(52.8)	
No reason given	51(19.8)	33(24.6)	18(14.6)	
Unavailability of the service	6(6.2)	8(6.0)	8(6.5)	
Religious beliefs	2(0.8)	2(1.5)	0(0.0)	

Chi-square or Fishers exact test was used for analysis as appropriate

As shown in table 4.2 regarding utilization of cervical cancer screening, most of the subjects (72.4%) had heard about cervical cancer and screening. Among those who never heard, the majority were from rural areas. Among the subjects who had heard of cervical cancer and screening, their main source of information was the hospital (43.2%).By place of residence, most of the rural women indicated radio was

the source of information whilst urban women hospital was their main source of information regarding cervical cancer and screening. Other sources indicated by both urban and rural areas included, church, television and community leaders.

On previous cervical cancer screening, only 34 (13.2%) out of the total 257 indicated to previously being screened and the majority (n=24) were from urban areas. Among those not screened (39.7%) expressed that lack of interest and lack of knowledge (33.5%) were the main reasons for not being screened. In comparison by place of residence, most urban women (52.2%) revealed lack of interest whilst women from rural areas (52.8%) indicated lack of knowledge was the main reason for not been screened. Other reasons for not being screened were: no reason was given (19.8%), unavailability of cervical cancer screening services (6.2%) and religious beliefs (0.8%). By place of residence, the majority of urban women indicated no reason for not being screened compared to rural women and same proportion of women from urban and rural women indicated unavailability of services and none of the rural women indicated religious to be reason for not being screened.

Table 4.3 Cervical cancer screening utilization among respondents previously screened (n=34)

	Total	Urban	Rural	P
	N (%)	N (%)	N (%)	value
Place where previous screening was done				
Queens central hospital	17(52.9)	14(43.5)	3(45.9)	0.03
District hospital	4(8.7)	2(5.8)	2(2.0)	
Health center	12(35.5)	8(47.0)	4(50.0)	
Private clinic	1(2.9)	0(0.0)	1(2.0)	
How respondent got motivated to get screened				
Health care provider	22(64.7)	17(85.0)	5(35.0)	0.032
Husband/friends	12(35.3)	7(15.0)	5(65.0)	
Type of test used on previous screening				
Pap smear	7(20.0)	4(20.0)	2(5.0)	0.001
VIA	27(80.0)	20(80.0)	8(95.0)	

Chi-square or Fishers exact test was used for analysis as appropriate

Among the total study respondents that had previously been screened for cervical cancer as shown in table 4.3, most of the subjects (52.9%) had the test at Queens Central Hospital and health centers (35.5%) respectively. By place of residence, in urban areas the subjects had indicated to have been screened at QECH whilst from the rural areas mostly at health centers. In both areas, most women (64.7%) were motivated by health care provider to be screened and the common test used was Vaginal Inspection Using Acetic Acid (VIA) (80%).

Table 4.4 Knowledge, perception, health locus control and social support on cervical cancer and screening (n=257)

	Total	Urban	Rural	P value
	N (%)	N (%)	N (%)	
Knowledge†				
High level (≥11)	139(54.9)	73(54.9)	66(55.0)	0.986
Low level (<11)	114(45.1)	60(45.1)	54(45.0)	
Perceived risk†				
High level(≥20)	136(52.9)	73(54.5)	63(51.2)	0.601
Low level(<20)	121(47.1)	61(45.5)	60(48.8)	
Perceived severity†				
High level(≥23)	133(51.8)	70(52.2)	63(51.2)	0.87
Low level(<23)	124(48.2)	64(47.8)	60(48.8)	
Perceived benefit†				
High level(≥23)	196 (76.3)	96 (71.6)	100(81.3)	0.069
Low level(<23)	61 (23.7)	38 (28.4)	23(18.7)	
Perceived barrier†				
High level(≥31)	156(60.7)	86(64.2)	70(56.9)	0.233
Low level(<31)	101(39.3)	48(35.2)	53(43.1)	
Health locus control†				
High level(≥27)	187(72.8)	102(76.1)	85(69.1)	0.207
Low level(<27)	70(27.2)	32(23.9)	38(30.9)	
Social support†				
High level(≥14)	234(91.1)	122(91.1)	112(91.1)	0.997
Low level(<14)	23(8.9)	12(8.9)	11(8.9)	

†Median value was used to categorize the two levels of the variables

According to knowledge, perception, health locus control and social support as shown in table 4.4, majority had high levels and noteworthy was social support (91.1%). According to place of residence, the respondents from urban areas demonstrated high levels in knowledge, perceived risk, susceptibility, and barrier. and

health locus control. Whilst the rural women had high levels in perceived benefit and there was equal distribution in levels in social support.

There was no significant relation between perceived risk, benefit and barrier in both urban and rural areas to utilization of cervical cancer screening. Likewise for health locus control and social support

Table 4.5 Cues to action on cervical cancer and screening among urban and rural respondents (n=257)

	Total	Urban	Rural	P-value
	N (%)	N (%)	N (%)	
How respondents obtained information				
Never heard	75(40.1)	17(13.2)	54(35.4)	0.001
Health care provider	136(52.9)	77(57.5)	59(48.0)	
Radio	38(3.0)	19(14.2)	19(10.4)	
Friends	37(2.9)	21(15.7)	16(7.0)	
Others	9(1.1)	7(1.2)	2(0.6)	
Available sources of information				
Health care provider	232(90.3)	127(94.8)	105(85.4)	0.018
Friends	12(4.7)	2(1.5)	10(8.1)	
Others	13(5.1)	5(3.7)	8(6.5)	
Best methods to provide information				
Health care provider	158(61.5)	78(58.2)	80(65.0)	0.061
Advertisement on radio	43(16.7)	21(15.7)	22(17.9)	
Campaign on television	29(11.3)	22(16.4)	7(5.7)	
Others	27(10.5)	13(9.7)	14(11.4)	

Table 4.5 Cues to action on cervical cancer and screening among urban and rural respondents (n=257) (cont.)

	Total	Urban	Rural	P-value
	N (%)	N (%)	N (%)	
Preferred venues for information sharing				
Hospital	174(67.7)	97(72.4)	77(62.4)	0.016
Women's seminars in churches	25(9.7)	16(11.9)	9(7.3)	
Others	58(22.6)	21(15.7)	37(30.1)	

Chi-square or Fishers exact test was used for analysis as appropriate

The respondents' cues to action regarding cervical cancer and screening are shown in table 4.6. Out of the 257 women from both rural and urban 40 % indicated they had not heard about cervical cancer and screening and the majority were from rural area. Out of those that had heard about cervical cancer, 52.9% indicated they obtained the information from health care provider and majority were for urban compared to rural women. By comparison, most of the subjects that had not heard about cervical cancer and screening were from rural areas. In both areas, women indicated that health care provider was the most available source of information (90.3%). However, the majority of women from rural areas also indicated friends as available source of information compared to their counterparts in urban areas. On best method to provide information, both groups (61.5%) indicated that health care provider is the best method for providing information on cervical cancer and screening. On preferred venues for sharing information, the majority (67.7%) indicated hospital as the preferred venue. Other preferred venues were community meetings led by their leaders and schools.

Attitude and intention are presented in table 4.6. Out of the 257 women, 70.8 % demonstrated positive attitude towards cervical cancer and screening. Likewise when compared to urban and rural, both groups had majority of respondents with positive attitude (64.2% and 78.0% respectively).On intention to have cervical cancer screening, 96.9% had intention to be screened. Between urban and rural, both groups

had majority of women with intention to be screened. On when the respondents intended to be screened, 80.9% indicated to be screened in the upcoming year and 15.2% were not sure of the time

Table 4.6 Attitude and intention to cervical cancer and screening (n=257)

	Total	Urban	Rural	P-value
	N (%)	N (%)	N (%)	
Attitude†				
Positive attitude (≥15)	182 (70.8)	86 (64.2)	96(78.0)	**0.015**
Negative attitude (< 15)	75 (29.2)	48 (35.8)	27(22.0)	
Intention				
Yes	249 (96.9)	129 (96.3)	120 (97.6)	0.724
No	8 (3.1)	5 (3.7)	3 (2.4)	
Intention to Uptake of screening				
Next year	208 (80.9)	112(83.6)	96(78.0)	
Next two years	10 (3.9)	8 (6.0)	2 (1.6)	**0.026**
Not sure	39 (15.2)	14(10.4)	25(20.3)	

†The median value was used to categorize the two levels

Chi-square or Fishers exact test was used for analysis as appropriate

.Chi-square analysis test was used to determine the association between socio-demographic variables and utilization of cervical cancer screening (Table 4.7). Place of residence, age groups, use of oral contraceptive and having heard about cervical cancer were statistically significant with utilization of cervical cancer screening (p-value <0.05). According to place of residence, age and number of sexual partners had statistical significance among urban women respondents whilst having heard of cervical cancer and screening was significant among the rural respondent (p-value <0.05). Whilst marital status, education, occupation religion, number of pregnancies, number of children, tribe and history of blood or friend diagnosed with cervical cancer had no statistical significance with utilization of cervical cancer screening.

Table 4.7 Association between socio-demographics and utilization of cervical cancer screening (n=257)

	Total			Urban			Rural		
	No	Yes	P value	No	Yes	P value	No	Yes	P value
	N (%)	N (%)		N (%)	N (%)		N (%)	N (%)	
Place of residence									
Urban	110(82.1)	24(17.9)	**0.021**	-	-	-	-	-	-
Rural	113(91.9)	10(8.1)							
Age groups									
30-34	117(52.5)	12(35.3)	**0.036**	66(60.0)	9(37.5)	**0.009**	51(45.1)	3(30.0)	0.640
35-40	72(32.3)	11(32.4)		33(30.0)	7(29.2)		39(34.5)	4(40.0)	
41-45	34(15.2)	11(32.4)		11(10.0)	8(33.3)		23(20.4)	3(30.0)	
Marital status									
Married	195(87.4)	28(82.4)	0.414	104(94.5)	21(87.5)	**0.203**	91(80.5)	7(70.0)	0.423
Unmarried	28(12.6)	6(17.6)		6(5.5)	3(12.5)		22(19.5)	3(30.0)	
Education									
Never attended	40(17.9)	4(11.8)	0.615	9(8.2)	2(8.3)	0.838	31(27.4)	2(20.0)	0.785
Primary	117(52.5)	18(52.9)		48(43.6)	12(50.0)		69(61.1)	6(60.0)	
Secondary	66(29.6)	12(35.3)		53(48.2)	10(41.7)		13(11.5)	2(20.0)	
Occupation									
Unemployed	144(64.6)	18(52.9)	**0.191**	62(56.4)	9(37.5)	**0.093**	82(72.6)	9(90.0)	0.451
Employed	79(35.4)	16(47.1)		48(43.6)	15(62.5)		31(27.4)	1(10.0)	
Religion									

Table 4.7 Association between socio-demographics and utilization of cervical cancer screening (n=257) (cont.)

	Total			Urban			Rural		
	No	Yes	P value	No	Yes	P value	No	Yes	P value
	N (%)	N (%)		N (%)	N (%)		N (%)		
Christian	202(90.6)	3(91.2)	1.000	102(92.7)	23(95.8)	1.000	100(88.5)	8(80.0)	0.351
Moslem	21(9.4)	3(8.8)		8(7.3)	1(4.2)		13(11.5)	2(20.0)	
Number of pregnancies									
>4	138(61.9)	21(61.8)	0.989	8 (75.5)	70(70.8)	0.637	55(48.7)	4(40.0)	0.599
≤4	85(38.1)	13(38.2)		27(24.5)	7(24.5)		58(51.3)	6(60.0)	
Number of children									
0-2	76(34.1)	9(26.5)	0.380	54(49.1)	8(33.3)	0.182	22(19.5)	1(10.0)	0.686
>2	147(65.9)	25(73.5)		56(50.1)	16(66.7)		91(80.5)	9(90.0)	
Use of oral contraceptive									
No	188(84.1)	23(67.6)	**0.018**	85(77.3)	16(66.7)	0.275	103(91.2)	7(70.0)	0.072
Yes	35(15.7)	11(32.4)		25(22.7)	8(33.3)		10 (8.8)	3(30.0)	
Number of sexual partners									
0-1	120(53.8)	14(41.2)	0.169	64(58.2)	10(41.7)	**0.014**	56(49.6)	4(40.0)	0.744
2+	103(46.2)	20(58.8)		46(41.8)	14(58.3)		57(50.4)	6(60.0)	
Heard about cervical cancer									
No	70(31.4)	1(2.9)	**<0.001**	16(14.5)	1(4.2)	0.307	54(47.8)	0(0.0)	**0.002**
Yes	153(68.6)	33(97.1)		94(85.5)	23(95.8)		59(52.2)	10(100.0)	

Table 4.7 Association between socio-demographics and utilization of cervical cancer screening (n=257) (cont.)

	Total			Urban			Rural		
	No	Yes	P value	No	Yes	P value	No	Yes	P value
	N (%)	N (%)		N (%)	N (%)		N (%)		
Tribe									
Chewa	77(34.5)	10(29.4)	0.664	17(15.5)	5(20.8)	0.546	60(53.1)	5(50.5)	1.000
Ngoni	45(20.2)	10(29.4)		25(22.7)	8(33.3)		20(17.7)	2(20.0)	
Yao	35(15.7)	4(11.8)		14(11.8)	2(8.3)		21(18.6)	2(20.0)	
Others	66(29.6)	10(29.4)		54(49.1)	9(37.5)		12(10.6)	1(10.0)	
Blood relation diagnosed with cervical cancer									
No	183(88.4)	24(11.6)		84(76.4)	16(66.7)	0.323	99(87.6)	8(80.0)	0.618
Yes	40(80.0)	10(20.0)	0.115	26(23.6)	8 (33.3)		14(12.4)	2(20.0)	
Friend diagnosed with cervical cancer									
No	211(86.5)	33(13.5)		100(90.9)	23(95.8)	0.688	111(98.2)	10(100)	1.000
Yes	12(92.3)	1(7.7)	1.000	10(9.1)	1(4.2)		2(1.8)	0(0.0)	

Table 4.8 Association between knowledge, perception, health locus control and social support and utilization of cervical cancer screening (n=257)

	Total			Urban			Rural		
	No	Yes	P-value	No	Yes	p-value	No	Yes	p-value
	N (%)	N (%)		N (%)	N (%)		N (%)	N (%)	
Knowledge									
High (≥ 11)	110 (50.2)	29 (85.3)	**<0.001**	53 (48.6)	20 (83.3)	**0.003**	57 (51.8)	9 (90.0)	**0.022**
Low (< 11)	109 (49.8)	5 (14.7)		56 (51.4)	4 (16.7)		53 (48.2)	1 (10.0)	
Perceived risk									
High (≥ 20)	118 (52.9)	18 (52.9)	0.998	60 (54.5)	13 (54.2)	0.973	58 (51.3)	5 (50.0)	1.000
Low (< 20)	105 (47.1)	16 (47.1)		55 (45.5)	11 (45.8)		55 (48.7)	5 (50.0)	
Perceived severity									
High (≥ 23)	113 (50.7)	20 (58.8)	0.376	59 (53.6)	11 (45.8)	0.488	54 (47.8)	9 (90.0)	**0.017**
Low (< 23)	110 (49.3)	14 (41.2)		51 (46.4)	13 (54.2)		59 (52.2)	1 (10.0)	
Perceived benefits									
High (≥23)	167 (74.9)	29 (85.3)	0.184	76 (69.1)	20 (83.3)	0.214	91 (80.5)	9 (90.0)	0.686
Low (< 23)	56 (25.1)	5 (14.7)		34 (30.9)	4 (16.7)		22 (19.5)	1 (10.0)	
Perceived barriers									
High (≥ 31)	133 (59.6)	23 (67.9)	0.373	69 (62.7)	17 (70.8)	0.453	64 (56.6)	6 (60.0)	1.000
Low (< 31)	90 (40.4)	11 (32.1)		41 (37.3)	7 (29.2)		49 (43.4)	4 (40.0)	
Health locus of control									
High (≥ 27)	160 (71.7)	27 (79.4)	0.350	83 (75.5)	19 (79.2)	0.699	77 (68.1)	8 (80.0)	0.722
Low (< 27)	63 (28.3)	7 (20.6)		27 (24.5)	5 (20.8)		36 (31.9)	2 (20.0)	
Social support									
High (≥ 12)	202(90.6)	32 (94.1)	0.749	100 (90.9)	22 (91.7)	1.000	102 (90.3)	10(100.0)	0.597
Low (< 12)	21 (9.4)	2 (5.9)		10 (9.1)	2 (8.3)		11 (9.7)	0 (0.0)	

Chi-square or Fishers exact test was used for analysis as appropriate

Table 4.8 describes the association between knowledge, perception, health locus control and social support with utilization of cervical cancer screening. Chi-square analysis was used and P-value of <0.05 was considered statistically significant. The results show that knowledge and perceived severity were statistically significant with utilization of cervical cancer screening (P-value <0.05), whilst perceived risk, perceived benefit, perceived barrier, health locus control and social support were not statistically significant with utilization of cervical cancer screening**.** In relation to residential area, level of knowledge had statistical significance in both urban and rural areas and perceived severity had significant association in rural areas**.**

Table 4.9 describes the association between attitude and intention to utilization of cervical cancer screening. Chi-square analysis was used and P-value<0.05 was statistically significant with utilization of cervical cancer screening. From the table intention of uptake in next year was statistically significant with P-value<0.05. Attitude and intention were found not to be statistically significant with utilization of cervical cancer screening. Likewise by urban and rural areas no statistical significance was found.

Table 4.9 Association between attitude and intention and utilization of cervical cancer screening (n=257)

	Total		p-value	Urban		p-value	Rural		p-value
	No	Yes		No	Yes		No	Yes	
	N (%)	N (%)		N (%)	N (%)		N (%)	N (%)	
Attitude †									
Positive attitude (≥ 15)	217(97.3)	34(100)	1.000	108(98.2)	24(100.0)	1.000	109(96.5)	10(100.0)	1.000
Negative attitude (< 15)	6(2.7)	0(0.0)		2(1.8)	0(0.0)		4(3.5)	0(0.0)	
Intention									
No	216(96.9)	33(97.1)	1.000	106(96.4)	23(95.8)	1.000	110(97.3)	10(100.0)	1.000
Yes	7(3.1)	1(2.9)		4(3.6)	1(4.2)		3(2.7)	0(0.0)	
Intention to uptake of screening									
Next year	182(81.6)	26(76.5)	**0.007**	94(85.5)	18(75.0)	0.075	88(77.9)	8(80.0)	0.135
Next two years	5(2.2)	5(14.7)		4(3.6)	4(16.7)		1(0.9)	1(10.0)	
Not sure	36(16.1)	3(8.8)		12(10.9)	2(8.3)		24(21.2)	1(10.0)	

† Median value was used to categorize the two levels

Chi-square or Fishers exact test was used for analysis as appropriate

Table 4.10. Multiple logistic regression analysis for utilization of cervical cancer screening

Predictor variables	Total [1)]			Urban [2)]			Rural [3)]	
	A OR	(95% CI)		A OR	(95% CI)		A OR	(95% CI)
Area of residence								
Urban	1.00			-			-	
Rural	NS							
Age groups								
30-34	1.00			1.00			-	
35-40	1.43	(0.55,	3.73)	1.15	(0.36,	3.64)		
41-45	7.05	(2.31,	21.6)	7.27	(1.90,	27.8)		
Occupation								
Unemployed	1.00			1.00			-	
Employed	NS			NS				
Number of Sex partners								
0-1	1.00			1.00			-	
2+	3.24	(1.31,	8.0)	4.16	(1.38,	12.6)		
Number of children								
0-2	-			1.00			-	
>2				NS				
Marital status								
Unmarried	-			1.00			-	
Married				NS				
Use of oral contraceptive								
No	1.00			-			NS	
Yes	2.60	(1.02,	6.61)					
Having heard of the screening								
No	1.00			-			NS	
Yes	17.7	(2.18,	144)					

Table 4.10. Multiple logistic regression analysis for utilization of cervical cancer screening (cont.

Predictor variables	Total [1)]		Urban [2)]		Rural [3)]	
	A OR	(95% CI)	A OR	(95% CI)	A OR	(95% CI)
Knowledge						
Low	1.00		1.00		1.00	
High	7.37	(2.44, 22.2)	6.11	(1.80, 20.8)	NS	
Perceived benefits						
Low	1.00		-		-	
High	NS					
perceived severity						
Low	-		-		1.00	
High					9.68	(1.19, 79.0)

1) Age groups, area of residence, number of sex partners, occupation, use of oral contraceptive use, heard about the screening, perceived benefit, and knowledge level were entered in the model

2) Age groups, occupation, number of sex partners, number of children, marital status, heard about the screening, and knowledge were entered in the model

3) Use of oral contraceptive, heard about the screening, knowledge level, and perceived severity were entered in the model

As shown in table 4.10, after the variables were entered into the three final models, utilization of cervical cancer screening was strongly associated with age groups, number of sex partners, and use of oral contraceptive, heard about cervical cancer and screening, knowledge and perceived severity.

In the total population, women within age category 41-45 were 7.05 times more likely to utilize cervical cancer screening than those of ages 30-40. Those women who had more than 2 sex partners were 3.24 times more likely to utilize cervical cancer screening than those with less than 2 sex partners. Likewise the women that had agreed to have used oral contraceptives were 2.06 times more likely to utilize cervical cancer screening than those who declined to have used oral contraceptives. The women that had heard about cervical cancer screening were 17.7 times more likely to utilize cervical cancer screening than those had not previously heard about cervical cancer. Based on knowledge level, the women who had high knowledge level were 7.37 more likely to utilize cervical cancer screening than those who had low levels.

In urban population, the women between ages 41-45 were 7.27 more likely to use cervical cancer screening than those of ages 30-40. Based on number of sexual partners, those that have had more than 2 sex partners were 4.16 more likely to use cervical cancer screening than those who had zero or one sex partner. In terms of knowledge, the women that high knowledge level were 6.11 more likely to utilize cervical cancer screening than those with low levels.

In rural population, the women with high perceived levels of severity were 9.68 times likely to utilize cervical cancer screening than those with low level.

CHAPTER V
DISCUSSION

The chapter presents discussion of the findings compared with previous studies and also in relation to other findings of this study. A cross-sectional community based study was conducted in the urban and rural areas of Blantyre District Malawi. A total of 257 women (134 urban, 123 rural) respondents participated in the study. The aim of the study was to assess the prevalence of utilization of cervical cancer and to identify determinants. Data collection was carried out from 30th April 2015 to 16th May 2015 using structured questionnaire.

5.1 Prevalence of utilization of cervical cancer screening

Utilization of cervical cancer screening offers substantial benefits as it widely accepted to reduce the incidence and mortality of cervical cancer**(76).** In Malawi, guidelines on cervical cancer prevention stipulate that women from the age 30 are to be screened every 3-5 years and that 70% of the target population are to be screened (15, 16). However findings from this study showed that only 13.2% (n=34) of the respondents had been screened by the time of the study. This result is lower than the previous two studies in the district that found 24.7% and 33.8% of the respondents had been screened (17, 23). The one study was comparative between urban and rural and the other was conducted in urban area. In the comparative study the majority screened were from urban areas which is a consistent finding in this study (n=24). Noteworthy is the disparity in the proportion of women that had been screened in two former studies and the current one, possible explanation is that both studies were hospital based with participants already utilizing reproductive health services and more likely to be well informed of cervical cancer screening unlike women found in the communities that are considered hard to reach. Nevertheless, the findings from the three studies demonstrate that cervical cancer screening is being under -utilized in the

district. This is a common phenomenal in developing countries compared to developed countries where utilization usually exceed 50 % like in the United Kingdom where 71 % of women from the general population have been screened for cervical cancer (60)and other countries reaching as high as 90% as in Sweden (77). Studies done in Kenya, Tanzania and Nigeria have also shown under-utilization of cervical cancer screening with proportions of 22.6%,12.3% and 4.2% respectively(51, 77, 78).

In summary, there is under-utilization of cervical cancer screening in most developing countries and in Malawi, the trend is more in rural than in urban areas.

5.2 Risk factors to cervical cancer

5.2.1 Age of respondents

Three age categories were employed in this study and those within 41-45 age were considered to be older women and were more likely to utilize cervical cancer screening despite being a small proportion (17.5%) unlike women between 30-40 years (82.9%). Similar findings were noted in Korea where uptake in cervical cancer screening was associated with increasing age (37). This finding could be as a result that older women especially over 40 years usually perceive themselves to be at risk due to their age and take preventive health measures a priority unlike young women who relate their young age to lack of health problems as such not inclined to use preventive services like cervical cancer screening (37).The present findings are in contrast to findings in German and Australia that demonstrated that young women were more responsive in accepting cervical cancer screening than older women(79, 80). In addition a review on social disparities regarding cervical cancer screening revealed cervical cancer screening utilization was high among young women of reproductive age unlike older women (81).From the results of different parts of the world, it becomes difficult to establish the optimal time and frequency for cervical cancer screening. Despite the conflicting findings, a systematic review demonstrated that cervical screening offers more benefits and reduces incidence and mortality by

60-80% in women more than 40 years and further reduce invasive form of cervical cancer by 90 % (53).

In conclusion, in light of this study result, age seems to affect utilization of cervical cancer screening in Blantyre district.

5.2.2 Use of oral contraceptive

Women who use of oral contraceptive for more than five years are at greater risk of developing cervical cancer compared to non-users**(82).** The study findings reveal that use of contraceptive was linked with utilization of cervical cancer screening. One of the reasons could be high number of respondents (49.7%) were aware that use of oral contraceptive was a risk factor for cervical cancer (supplementary table 1). Another reason might be that high percentage of respondents had high level of perceived risk to cervical cancer and this could encourage them to have cervical cancer screening (supplementary table 3). In relation to proportion of respondents who used are currently using oral contraceptive, the majority were from the urban area and this could be attributed to being well informed and have access to health facilities unlike their rural counterparts. Consistent to this finding, a study in Norway showed that women who were using oral contraceptive were more likely to have cervical screening as they were more health conscious and inclined to use preventive services (41).A scoping review re-affirmed that use of oral contraceptive was associated with utilization of cervical cancer screening (83). Therefore the current findings are consistent with previous studies.

5.2.3 Number of sex partners

Women life time number of sex partners is a major risk for HPV infection that subsequently result into development of cervical cancer**(41).** In the present study, women who have had 2 or more lifetime sex partners were associated with utilization of cervical screening. From the study findings it could be explained due to half of the respondent were young and middle aged and suggestive of being sexually active especially those from urban since they are more exposed to information unlike the rural women. In China, it was found out that those women who had multiple sexual partners were not likely to have cervical cancer screening and this was a result that

screening procedures like cervical cancer are associated with promiscuity and immodesty hence women would be discouraged to have cervical screening (84). Malawi has a conservative culture and most likely that women seen to use cervical cancer screening might also be considered as engaging inappropriate behavior but it was not the case. In support of this, the study findings indicated that majority disagreed to the perception that cervical cancer screening is only for those women that engage inappropriate sexual behavior (supplementary table 5). A contradictory finding was reported in a systematic review regarding perceived barriers to have cervical cancer screening and found that women that have had only one sex partner considered themselves to be at low risk of cervical cancer hence reason for not being screened (85).Therefore considering that having a number of sexual partners is one of the major risk factors for cervical cancer (47)and that cervical cancer screening detects HPV infection the present study was in line with crucial recommendation.

5.3 Knowledge on cervical cancer and screening

A number of studies have highlighted the association between having heard of cervical cancer and screening and knowledge on cervical cancer to utilization of screening services.(17, 23, 36, 43, 77, 78, 86-88). Likewise in the current study those women that demonstrated high level of knowledge were more likely to use cervical cancer screening unlike those with low levels of knowledge (table 10). A possible explanation for high level knowledge to associate with utilization cervical cancer was that the majority those screened were from urban areas and that there is increased likelihood to exposure to information. Any factor for high level was possibly due to access to hospital for the urban women compared to rural as indicated that they mostly obtained information on cervical cancer from health care provider (table 3). Despite high level of knowledge was associated with utilization, the result was different in Nigeria as it showed that nurses who are considered to be well conversant of the cervical cancer and its substantial benefit of screening, only 34.2% had utilized cervical cancer screened (89). A similar finding was noted in Taiwan where utilization of cervical cancer screening was lower in practicing nurses compared to the general

population(59). In South Africa, study among university students found that only 15% of the students had been screened for cervical cancer though it is expected the literate group is exposed to information on cervical cancer and screening (90).From the studies discussed, it can be conclusively been accepted that high knowledge does not translate into utilization of cervical cancer screening, for instance from the present study majority of both urban and rural respondents had high level of knowledge but only 34 out of 257 (13.2%) had been screened. Nevertheless, study in Latin America affirmed that high knowledge was strongly associated with utilization of cervical cancer and in Massachusetts America, black women indicated that ever heard of cervical cancer and screening was most important for them to get screened (43, 56). In contrast to high level of knowledge influencing women to utilize cervical cancer screening, a study among Somali migrants in the United Kingdom identified lack of knowledge on cervical cancer and screening as a barrier for not utilizing cervical cancer screening (60).

Therefore, conflicting findings on knowledge with utilization of cervical cancer screening provides adequate evidence that knowledge determines utilization of cervical cancer screening.

5.4 Perceived severity on cervical cancer and screening

According to health belief model, perceived severity or seriousness refers to perceived harm of the condition in terms of psychological, physical and social consequences(91). In the current study, rural women with high perceived severity to cervical cancer were more likely to utilize cervical cancer screening, and this perception was not significant in urban women. This could be due to cervical cancer being more prevalent among the poor and those that have no easy access to health care facility. A systematic review using Health Belief Model among immigrants and minorities in the United States revealed that beliefs about cervical cancer changes one’s life style, can be easily cured and it is not a serious form of cancer compared to other cancers, influenced women to utilize and not utilize cervical cancer screening(81). Critics have pointed out prediction of Health Belief Model constructs

on utilization of preventive services like cervical cancer as such literature review on perception of cervical cancer revealed that participants who have shown high severity score towards cervical, it does not necessarily translate into actual behavior of utilizing cervical screening(92). This phenomenal was noted in the present study as more than half of the respondents (50.9%) had high score on perceived severity (table 8) but only few utilized cervical cancer screening.

Nevertheless, 90% of women from rural areas had high score of perceived severity, therefore explaining the association between perceived severity and utilization of cervical cancer.

5.6 Methodological concerns

This study was conducted in community and in respondents household as such respondents felt they were being interrupted of doing their household chores and also felt their privacy was invaded. This could affect how they responded to questions. The interviewers were males as such respondents might not have been comfortable in answering some of the sensitive questions like on sexual history as this could affect the outcome of the study. Some respondents felt the instrument was too long. However, the researcher and assistants explained the purpose of conducting the study in households and assured them of the importance of conducting such a study that could help the delivery of cervical cancer screening services and that it offered respondents an opportunity to gain knowledge of cervical cancer in the comfort of their homes.

In some rural areas, the terrain was not in good condition and this hindered researcher to reach to these women, however the researcher identified other rural areas where the road infrastructure was good.

Due to misconception about health research studies especially in rural areas, the respondents were explained of the purpose of the study.

CHAPTER VI
CONCLUSION AND RECOMMENDATION

The aim of this study was to determine the prevalence of utilization of cervical cancer and to identify significant factors related to utilization of cervical cancer screening among women aged 30-45 from urban and rural areas Blantyre District Malawi. The study was guided by conceptual framework on Health Belief Model and literature review on previous studies that highlighted a number of significant factors related to utilization of cervical cancer screening.

Convenience sampling method was used to randomly recruit study participants. A total of 257 women participated in the study. Firstly, out of the eight administrative areas of the district, three areas were conveniently selected in consideration of location and resources .Lastly, communities were conveniently selected and households were randomly selected to recruit women into the study.

Broadly, this study had three research questions on what is the percentage of women utilizing cervical cancer screening, what are the determinants to utilization of cervical cancer screening and is there a difference of the determinants by urban and rural areas. To answer these questions, socio-demographic, knowledge, perception, health locus control, social support, attitude and intention were employed as independent variables and utilization of cervical cancer screening was dependent variable. A structured questionnaire was used to gather information on the variables. Ethical approval was obtained from Mahidol University and Malawi National Research Committee for Health. Prior to conducting the study interviews, a written consent was obtained from the Blantyre District Council and verbal consent from community leaders. At the time of interviews, written consents were obtained from study participants. For reliability test, pre-testing results showed the questionnaire was reliable with Cronbach's alpha of 0.654 for perception and KR20 value of 0.62 for knowledge.

6.1 Conclusion

6.1.1 Utilization of cervical cancer screening.

The study findings show that there is low percentage (13.2%) of women that utilized cervical cancer screening. Furthermore, according to place of residence only 17.9% of the urban and 8.1% of rural women had been screened for cervical cancer. This result is similar with previous study in the district that found 26.2% of urban women had utilized cervical cancer screening compared to 7.6% from rural women (21).

6.1.2 Determinants to utilization of cervical cancer screening

According to the study findings, socio-demographic factors of older age, use of oral contraceptive, having more than number 2 sex partners and ever having heard of cervical cancer and screening influenced utilization of cervical cancer screening. The result suggests that women were aware of the risk factors and their potential risk of developing cervical cancer with regard to risk factors hence inclined to utilize cervical cancer screening.

According to health belief model, only perceived severity had influence on women utilization of cervical cancer screening. This study found that the other constructs of the model: perceived risk, benefit, barrier and cues to action had no influence on women utilization to cervical cancer screening. Therefore, Health Belief Model failed to influence utilization of cervical cancer screening in this study population. According to the model, perception of benefits of cervical cancer combined with less perceived barriers to engage in screening has increases the likelihood for an individual to seek cervical screening (27).

Regarding knowledge on cause, risk factors, signs and symptoms, high level knowledge influenced women utilization to cervical cancer screening. One plausible explanation is that 50.2% of respondents had high level knowledge on cervical cancer and screening. Despite overall good levels of health locus control, social support, attitude and intention to cervical cancer screening there was no association with utilization of cervical cancer screening.

6.1.3 Comparison of urban and rural

By place of residence, the study indicated that older age, number of sex partners and high level knowledge were associated with utilization of cervical cancer screening in the urban areas. This might be because most urban women (41%) had attended secondary or higher education and that were more likely to be exposed to cervical cancer information on cause, risk factors and signs and symptoms and comprehend the benefit of cervical cancer screening.

High level perceived severity had association with rural areas and this could be that 90% of rural women that utilized cervical cancer screening had high level perceived severity of cervical cancer and screening. In accordance to Health Belief Model, women that have high level perceived are more likely to engage in preventive health measures like cervical cancer screening (27).

6.2 Recommendations

6.2.1 Recommendation for practice

There is need to increase utilization of cervical cancer screening among the urban and rural women in Blantyre District. Therefore based on the findings, health education programs on cervical cancer and screening and its benefits need to focus on increasing women level of knowledge. This calls for multi-faceted approach. In urban areas, health care providers are the main source of information, therefore there is need to effectively disseminate information on cervical cancer screening and be able to maximize every opportunity they are in contact with women in educating about cervical cancer and screening. Efforts should also be directed at increasing awareness of the risk factors of cervical cancer among the study population as well as urban population.

Health care workers need to integrate cervical cancer screening with other reproductive health services like family planning, HIV/AIDS to ensure reaching to the young women that are more likely to use such services and able to increase utilization of cervical cancer screening.

In rural areas, information on cervical cancer and screening can be disseminated using media avenues like radio. In addition, community leaders should play a vital role in sensitizing women to utilize cervical cancer screening as the results show that rural women preferred community meetings as method of sharing information on cervical cancer and screening.

6.2.2 Recommendation for policy makers

Women that have heard of cervical cancer screening are more likely to have high level of knowledge and high level perceived severity of cervical cancer and likely to use cervical cancer screening. More active promotion strategies need to be channeled through media that are appropriate to reach women in consideration of their preference and area of residence. Publicity using radio and hospitals should be intensified. There is also need to ensure that health care providers are updated and conversant on the knowledge of cervical cancer and screening and be able to disseminate such information to women. This calls for capacity building to all health professionals regarding cervical cancer and screening.

6.3 Future research

There is need of conducting qualitative research to get a deeper understanding of other factors that might determine utilization of cervical cancer screening by urban and rural areas.

There is need to conduct the research with large sample size to have a good comparison of the determinants by urban and rural.

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APPENDICES

APPENDIX A

STRUCTURED QUESTIONNAIRE ON DETERMINANTS TO UTILIZATION OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE DISTRICT, MALAWI: A COMPARISON OF URBAN AND RURAL AREAS.

Questionnaire no …….

Respondent (ID) ……

Date of interview……..

Community code no……

Interviewer code no……..

SOCIO-DEMOGRAPHICS

No	QUESTION/STATEMENT	ANSWERS
1	How old are you**?**	**……..**years
2	What is your current Marital Status?	1. Unmarried 2. Married 3. Divorced 4. Widowed 5. Separated **6.** Cohabiting
3	How many times have you been pregnant?	……times
4	How many times have you given birth?	1. Stillbirth / dead shortly after birth ……times 2. Alive….times
5	How many children do you have?	**……**
6	How many children aged 12 and less?	**……**

No	QUESTION/STATEMENT	ANSWERS
7	What is the highest level of education you have reached**?**	1. Never attended 2. Primary 3. Secondary 4. College **5.** University
8	What is your current occupation?	1. Unemployed 2. Self-employed 3. Employed
9	What is your religion**?**	1. Roman catholic 2. Anglican 3. The Church of Central Africa Presbetrian 4. Seventh Day Adventist 5. Assemblies of God 6. Islam 7. Jehovahs Witness **8.** Others……..
10	What is your tribe**?**	1. Chewa 2. Lomwe 3. Sena 4. Ngoni 5. Tumbuka **6.** Yao
11	Have you ever used oral contraceptive? If yes, how long have you been using the pill?	1. Yes **2.** No **3.** …..Months **4.** …..Years
12	When did you start having sexual intercourse?	……
13	How many sexual partners have you had up until now?	……

FAMILY HISTORY OF CERVICAL CANCER

No	QUESTION/STATEMENT	ANSWERS	
14	Do you have a close relative that was found to have cervical cancer? (biological mother, sister or cousin, aunt)	Yes	No
15	Do you have friends/neighbors that were found to have cervical cancer?	Yes	No

UTILIZATION OF CERVICAL CANCER SCREENING

No	QUESTION/STATEMENT	ANSWERS
16	Have you ever participated in the following health checks? (mention the tests to respondent)	1. HIV testing 2. Blood pressure checking 3. Cervical cancer screening
17	Have you ever heard of cervical cancer screening?	1. Yes 2. No
18	If yes, from who and where did you hear about cervical cancer? (Let respondent mention the source(s)	……..
19	Have you ever been screened for cervical cancer? If no, give reasons	1. Yes 2. No …….
20	If yes, when were you screened last?	1. Less than a year ago 2. A year ago 3. Two years ago 4. Three years ago
21	Where did you have the screening test done? (Let the respondent mention the place)	……
22	Who facilitated you to have cervical cancer screening?	1. Friends 2. Husband 3. Health care provider Others, specify……

No	QUESTION/STATEMENT	ANSWERS
23	Did you ever have an abnormal result?	1. Yes 2. No 3. Did not know the result
24	What test was used during your previous screening? (Multiple choice)	1. Pap smear 2. HPV DNA 3. VIA

KNOWLEDGE OF CERVICAL CANCER AND SCREENING

Do you agree or disagree to the following statements			
CAUSE OF CERVICAL CANCER			
25	Cervical cancer is caused by HPV infection?	Yes	No
26	HIV causes cervical cancer	Yes	No
27	HPV infection is contracted by sexual intercourse	Yes	No
RISK FACTORS			
28	Smoking increases the risk of cervical cancer	Yes	No
29	Having multiple sexual partners increases risk of cervical cancer	Yes	No
30	Sex at an early age increases risk of cervical cancer	Yes	No
31	Having three or more child deliveries increases risk of cervical cancer?	Yes	No
32	Using combined contraceptive pills increases the risk of cervical cancer	Yes	No
33	Having Sexually Transmitted Disease increases the risk of cervical cancer	Yes	No
34	Family history increases risk for cervical cancer	Yes	No
SIGNS AND SYMPTOMS			
35	Vaginal bleeding after sex	Yes	No
36	Irregular menstrual bleeding	Yes	No
37	Persistent lower abdominal pains is a sign of cervical cancer	Yes	No
38	Foul smelling vaginal discharge	Yes	No
39	Pain during sexual intercourse	Yes	No
40	Frequent micturition	Yes	No
41	Vaginal itchiness	Yes	No

KNOWLEDGE:CERVICAL CANCER SCREENING ELIGIBILITY AND FREQUENCY

No	QUESTION/STATEMENT	ANSWERS
42	Who do you think should be screened for cervical cancer?	1. Single women 2. Married women 3. Sex workers 4. Young women who are sexually active
43	When should a woman start having cervical cancer screening?	1. Once sexually active 2. Age 30
44	How often should a woman be screened?	1. Every year 2. Every 2 years 3. 5 years
45	Why should women be screened?	1. For early detection and treatment of cervical cancer 2. Others, specify…….

PERCEPTION OF CERVICAL CANCER AND SCREENING				
To what extent do you agree or disagree to the following statements				
PERCEIVED RISK				
46	If no discomfort or pain, do not need cervical cancer screening	Agree	Not sure	Disagree
47	Cervical cancer screening test is for sexually active women.	Agree	Not sure	Disagree
48	Your chances of having cervical cancer are high.	Agree	Not sure	Disagree
49	Having cervical cancer is a matter of bad luck.	Agree	Not sure	Disagree
50	You do not require cervical cancer screening because there is no family history of cervical cancer.	Agree	Not sure	Disagree
51	Women that consider themselves as old do not require cervical cancer screening.	Agree	Not sure	Disagree
52	Compared to other women of the same age your probability of having cervical	Agree	Not sure	Disagree

	cancer are low.			
PERCEIVED SEVERITY				
53	Cervical cancer increases household expenditure	Agree	Not sure	Disagree
54	You would not get cervical cancer screening test because of fear of the result	Agree	Not sure	Disagree
55	You would be encouraged to have screening test when you see a woman suffering from cervical cancer	Agree	Not sure	Disagree
56	You would be encouraged to have screening test when you see a woman suffering from cervical cancer	Agree	Not sure	Disagree
57	Loss of the cervix or uterus through surgery would affect women sexually	Agree	Not sure	Disagree
58	You would rather take the test and discover the hidden disease than go through the pain	Agree	Not sure	Disagree
59	Women with cervical cancer die from the disease	Agree	Not sure	Disagree
60	Cervical cancer eats the internal organs	Agree	Not sure	Disagree
61	Cervical cancer can easily be treated	Agree	Not sure	Disagree
PERCEIVED BENEFITS				
62	Cervical cancer screening could save life when cancer is detected and treated at an early stage	Agree	Not sure	Disagree
63	Regular a symptomatic screening is a waste of time and money	Agree	Not sure	Disagree
64	Regular cervical cancer screening reduces risk of cervical cancer	Agree	Not sure	Disagree
65	Cervical cancer is curable if detected early	Agree	Not sure	Disagree

66	Cervical cancer screening is humiliating	Agree	Not sure	Disagree
67	Screening test confirms problem with reproductive organ	Agree	Not sure	Disagree
68	Only when you have done cervical screening you will be able to use contraceptive device like IUCD	Agree	Not sure	Disagree
69	Having screening test will give you a peace of mind	Agree	Not sure	Disagree
70	Cervical Screening test confirms cervical cancer	Agree	Not sure	Disagree
PERCEIVED BARRIERS				
71	Women with cervical cancer are considered dirty	Agree	Not sure	Disagree
72	Informing husband or family members of test results would discourage women to go for screening	Agree	Not sure	Disagree
73	Cervical cancer screening is painful	Agree	Not sure	Disagree
74	Being screened by a male health care worker would discourage you to have cervical screening	Agree	Not sure	Disagree
75	It is embarrassing to have cervical cancer screening	Agree	Not sure	Disagree
76	Fear of discrimination by friends upon seen being screened would discourage women from having cervical cancer screening	Agree	Not sure	Disagree
77	Financial constraints will make you not go for cervical screening	Agree	Not sure	Disagree
78	Long waiting time at hospital is likely to discourage you from going for screening	Agree	Not sure	Disagree
79	Long distance to health facility would discourage you from having cervical	Agree	Not sure	Disagree

	screening			
80	Household chores may discourage women from having cervical cancer screening services	Agree	Not sure	Disagree
81	Having small children would prevent women from having cervical cancer screening	Agree	Not sure	Disagree

CUES TO ACTION

86. If you know about cervical cancer and screening services, how did you obtain this information? (More than one can be given)

1. Friends
2. Family member
3. Health care provider
4. Television
5. Radio
6. Posters
7. Magazines
8. News papers
9. Books
10. Pamphlets
11. Others specify……

87. What are the available sources of information on cervical cancer? (More than one response can be given)

1. Friends
2. Family member
3. Health care provider
4. Television
5. Radio
6. Posters
7. Magazines
8. News papers
9. Books
10. Pamphlets

Others specify……

88. What do you think are the best methods for providing information about cervical cancer and screening? (Wait for answers from respondents)

1. Campaign advertisement on television
2. Campaign advertisement on radio
3. Health talks by health care providers
4. Health talks by community leaders
5. Others

specify……

89. What are the preferred venues for cervical cancer information sharing? (Wait for responses)

1. Hospital clinics
2. Ladies seminars in schools
3. Ladies seminars in churches
4. Community meetings
5. Others

specify……**……**

HEALTH LOCUS OF CONTROL

90	You will have screening test because you believe is the right action for you to stay health?	Agree	Not sure	Disagree
91	You will have screening test because you believe your physical well- being depends on how well you take care of yourself?	Agree	Not sure	Disagree
92	You will have screening test because you believe you are responsible for your own health	Agree	Not sure	Disagree
93	You will have screening test because you will blame yourself if you get sick?	Agree	Not sure	Disagree
94	You will have screening test to avoid cervical cancer?	Agree	Not sure	Disagree
95	You will have screening test because you believe health workers will help you avoid cervical cancer	Agree	Not sure	Disagree

96	You will have screening test because you believe you can maintain good health by consulting with nurses and doctors?	Agree	Not sure	Disagree
97	You will have screening test because you believe doctors and nurses instructions will help you stay health?	Agree	Not sure	Disagree
98	You will have cervical screening because avoiding to do test will be ignorant of your health status?	Agree	Not sure	Disagree
99	You will have screening test because you believe facing a problem makes you stronger	Agree	Not sure	Disagree
SOCIAL SUPPORT				
100	You will have screening test because you have good support from friends, family and work colleagues	Agree	Not sure	Disagree
101	You will have screening test because your religion provides reassurance about health issues	Agree	Not sure	Disagree
102	Satisfaction with social support from family members	Agree	Not sure	Disagree
103	Husband will refrain you from having cervical screening	Agree	Not sure	Disagree
ATTITUDE TOWARDS CERVICAL CANCER SCREENING				
104	You are likely to have cervical screening despite feeling embarrassed of showing genitalia	Agree	Not sure	Disagree
105	You are likely not to have cervical screening test because of feeling shy of the procedure	Agree	Not sure	Disagree
106	Thinking of cervical screening you are afraid of being diagnosed with cervical cancer	Agree	Not sure	Disagree

107	Not willing to know about your cervical cancer status, you are likely not to have cervical screening	Agree	Not sure	Disagree
108	Being eager to know about your cervical cancer status, you are likely to have cervical screening	Agree	Not sure	Disagree
INTENTION IN UPTAKE OF CERVICAL CANCER SCREENING				
109	Do you intend to have cervical cancer screening?			1. Yes 2. No **3.** Not sure
110	If yes, when do you intend to have cervical screening?			1. Next two years **2.** Next year

Any other suggestions on how best cervical cancer screening service provision would be improved to increase uptake? .....

Thank you for your participation

APPENDIX B

NDONDOMEKO YOFUNSA MAFUNSO YA AMAYI

DETERMINANTS TO UTILIZATION OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE DISTRICT, MALAWI: A COMPARISON OF URBAN AND RURAL AREAS.

Nambala ya chofunsira mafunso:……..

Amayi oyankha mafunso nambala yake…….

Tsiku la kafukufuku……

Dzina la dera lokhala zimayi……

Nambalaya wofunsa mafunso……..

SOCIO-DEMOGRAPHICS

No	MAFUNSO	MAYANKHO
1.	Kodi zaka zakubadwa zanu ndi zingati?	**…….**
2.	Kodi munakwatiwapo?	1. Sindinakwatiwepo 2. Okwatiwa 3. Banja linatha 4. Woferedwa 5. Kunyanyalizana **6.** Kulowana
3.	Kodi ndi maphunziro a sukulu ati amene munamaliza?	1. Sindinapitepo kusukulu 2. Pulaimale 3. Sekondale 4. Koleji 5. Sukulu ya ukachenjede

No	MAFUNSO	MAYANKHO
4.	Mumagwira ntchito yanji?	1. Sindikugwira ntchito 2. Wodzilemba ndekha 3. Wolembedwa
5.	Muli mpingo wanji?	1. Roman Catholic 2. The church of Central Africa Presbyterian 3. Anglican 4. Assemblies of God 5. Islam 6. Jehovas witness 7. Ena (fotokozani)
6.	Mtundu wanu ndi chani?	1. Chewa 2. Lomwe 3. Sena 4. Ngoni 5. Tumbuka 6. Yao 7. Wina(fotokozani
9.	Kodi munakhalapo oyembekezela kangati moyo mwanu?	……
10.	Nanga munabelekako kangati?	1. Amoyo (……) 2. Ana opitilila (…….)
11.	Muli ndi ana angati?	……
12.	Muli ndi ana angati ochepela zaka khumi ndi ziwili?	……
13.	Kodi munagwilitsilako ntchito njira yakulera ya mapilisi? Ngati abvomera,mwagwilitsila ntchito kwa nthawi yayitali bwanji?	1. Eya 2. Ayi 1. Miyezi….. 2. Zaka……

No	MAFUNSO	MAYANKHO
14.	Kodi munali ndi zaka zingati pamene munayamba kugonana ndi amuna?	……
15.	Kufikila lero,mwagonanapo ndi amuna angat	

UTILIZATION OF CERVICAL CANCER SCREENING

No	MAFUNSO	MAYANKHO
16.	Kodi ndi matenda anji amene munayezetsako? (multiple choice)	1. Kuyezetsa ngati muli ndi kachirombo koyambitsa Edzi 2. Kuyezetsa kuthamanga kwa magazi 3. Kuyezetsa za khansa ya khomo la chibelekelo.
17.	Kodi munamvako za kuyezetsa khansa la nkhomo la chibelekelo? Ngati mwabvomela, munamvela kwandani? (Dikirani kuti ofusidwa atchule kumene anamvela)	1. Inde 2. Ayi
18.	Munayamba mwayezedwapo za khansa ya khomo lachiberekelo Ngati ayi, fotokozani zifukwa	1. Inde 2. Ayi ……..

Ask questions 20-24 if woman agrees to have had cervical cancer screening and skip the questions if woman did not have cervical cancer screening before and ask questions from 25.

No	MAFUNSO	MAYANKHO
19.	Ngati mwa bvomera, munayezedwa liti komaliza?	1. Sipanathe chaka 2. Chaka chatha 3. Zaka ziwiri zapita 4. Zaka zitatu zapita

No	MAFUNSO	MAYANKHO
20.	Kodi ndi malo anji amene munakayezetsa khansa la nkhomo la chibelekelo? (Dikilani ofunsidwa kuti atchule malo)	…… …….
21.	Ndani anayambitsa nkhani yokayezetsa khansa ya khomo la chibelekero? (Tchulani mayankho kwa ofunsidwa)	1. M'modzi wa banja 2. Mwamuna wako 3. Amnzako 4. Ogwira nawo ntchito 5. Ogwila ntchito za umoyo 6. Ena (tchulani)…… ……
22.	Munakhalapo ndizotsatira zowonetsa kuti mutha kukhala ndi khansa la nkhomo lachiberekero?	1. Inde 2. Ayi 3. Sindinamve zotsatira
23.	Kodi ndi njira iti yomwe inagwilitsidwa ntchito panthawi yomwe mumayezedwa khansa la nkhomo la chibelekelo? (Tchulani mayankho: multiple choice)	1. Pap smear 2. HPV DNA 3. VIA
24.	Kodi ndi azimayi otani amene akuyenera kukayezetsa khansa la nkhomo la chibelekelo?	1. Azimayi osakwatiwaa 2. Azimayi okwatiwa 3. Mahule 4. Ena(tculani)
25.	Kodi zimayi akuyenela kuyamba kukayezetsa khansa la nkhomo la chibelekelo liti? (multiple choice)	1. Pamene wayamba kugonana ndi amuna. 2. Pa zaka khumi ndi zitatu. 3. Maganizo ena (Fotokozani)…….

No	MAFUNSO	MAYANKHO
26.	Kodi ndi pafupi pafupi bwanji zimayi akuyenela kukayezetsa khansa la nkhomo la chibelekelo? (Dikilani yankho)	1. Chaka chili chonse 2. Pa zaka ziwiri 3. Pa zaka zisanu 4. Zina
27.	Ndizifukwa ziti azimayi akuyenela kukayezetsa khansa la nkhomo la chibelekelo? Fotokozani	**…….**
Family history of cervical cancer		
28.	Munayamba mwakumanapo kapena kumva za mzimayi amene ali ndi khansa yak homo la chibelekero?	1. Inde 2. Ayi
29.	Muli ndi wachibale wina aliyense amene anamupeza ndi khansa la nkhomo la chibelekelo? (biological mother,sisteror cousin and aunt)	1. Inde 2. Ayi

Yankhani mafunso otsatirawa ponena kuti “zowona” kapena “zonama

30	Kodi kachilombo ka HPV kamayambitsa khansa la nkhomo la chibelekelo	**Zowona**	**Zonama**	**Sindikudziwa**
31	Kodi kachilombo ka HIV kamayambitsa khansa la nkhomo la chibelekelo	**Zowona**	**Zonama**	**Sindikudziwa**
32	Kodi kachilombo koyambitsa khansa la nkhomo la chibelekelo umatengela njira yogonana?	**Zowona**	**Zonama**	**Sindikudziwa**

Zinthu izi zingamuyike munthu pa ngozi yayikulu yoyambitsa khansa ya nkhomo la chibelekelo

33	Uhule	**Zowona**	**Zonama**	**Sindikudziwa**
34	Zakumtundu	**Zowona**	**Zonama**	**Sindikudziwa**
35	Matenda opatsirana pogonana	**Zowona**	**Zonama**	**Sindikudziwa**

36	Kusuta	**Zowona**	**Zonama**	**Sindikudziwa**
37	Kugonana ndi amuna uli sinkhu wawungono	**Zowona**	**Zonama**	**Sindikudziwa**
38	Kubeleka pafupipafupi	**Zowona**	**Zonama**	**Sindikudziwa**
39	Kugwilitsa ntchito njira yolela ya mapilisi kuposela zaka zisanu	**Zowona**	**Zonama**	**Sindikudziwa**

Zizindikiro za khansa la nkhomo la chibelekero

40	Kutuluka chikazi chonunkha	Zoona	Zonama	Sindikudziwa
41	Kumva kuwawa pogonana	Zoona	Zonama	Sindikudziwa
42	Kusamba mopanda dongosolo	Zoona	Zonama	Sindikudziwa
43	Kutuluka magazi pamene zimayi wagonana ndi zibambo	Zoona	Zonama	Sindikudziwa
44	Kukodza pafupi pafupi	Zoona	Zonama	Sindikudziwa
45	Kumva kuyabwidwa ku njira ya bamboo	Zoona	Zonama	Sindikudziwa
46	Kumva Kuwawa nchinena kosalekeza	Zoona	Zonama	Sindikudziwa

PERCEPTION OF CERVICAL CANCER AND SCREENINGYankhani mafunso otsatirawa ponena kuti “zowona” kapena “zonama”

PERCEIVED RISK				
47.	Kodi ngati mulibe chili chonse chosowetsa mtendere kapena ululu, sikofunikira kukayezetsa khansa yakhomo la chibelekero	**Zoona**	**Zonama**	**Sindikudziwa**
48.	Kodi Kuyezetsa khansa ya khomo la chibelekero ndi kwa a amayi omwe amachita zauhure	**Zoona**	**Zonama**	**Sindikudziwa**
49.	Kodi Muli ndi mwayi waukulu wotengera khansa yakhomo la chibelekero	**Zoona**	**Zonama**	**Sindikudziwa**

50.	Kodi Kukhala ndi khansa ya khomo la chibelekero ndi tsoka chabe	**Zoona**	**Zonama**	**Sindikudziwa**
51.	Kodi Sikofunika kuyezetsa khansa ya khomo la chibelekero chifukwa ku banja kwanu kulibe mbiriyi	**Zoona**	**Zonama**	**Sindikudziwa**
52.	Kodi pompeza ndinu wamkulu simukufunikira kuyezetsa khansa ya khomo lachibelekero	**Zoona**	**Zonama**	**Sindikudziwa**
53.	Kodi Kusiyanitsa ndi azimayi anzanu anzaka zofanana,ndikwapatali kuti mukhale ndi khansa ya nkhomo ya pachibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
PERCEIVED SEVERITY				
54.	Kodi Pali zinthu zochepa zomwe munthu angachite zokhudzana ndi khansa yakhomo la chibelekero	**Zoona**	**Zonama**	**Sindikudziwa**
55.	Kodi Simungakayezetse khansa ya khomo la chibelekero chifukwa cha mantha ndi zotsatira	**Zoona**	**Zonama**	**Sindikudziwa**
56.	Kodi Kuona wina wake akudwala khansa yakhomo lachibelekero kudzakulimbikitsanikuti mupite mukayezetse	**Zoona**	**Zonama**	**Sindikudziwa**
57.	Kodi Mzimayi atha kusiyidwa ndi mwamuna wake ngati wapezeka ndi khansa yakhomo la chibelekero	**Zoona**	**Zonama**	**Sindikudziwa**
58.	Kodi kuchotsedwa nkhomo la chibelekero ndi chibelekero kudzera opareshoni kutha kukhudza moyo ogonana	**Zoona**	**Zonama**	**Sindikudziwa**

59.	Kodi ndi bwino kuti mukayezetse khansa la nkhomo la chibelekero ndi kupeza nthenda yobisikayo kusiyana ndi kudzakhala mu ululu	**Zoona**	**Zonama**	**Sindikudziwa**
60.	Kodi ngati mzimayi wapezeka ndi khansa ya nkhomo la chibelekero adzafa	**Zoona**	**Zonama**	**Sindikudziwa**
61.	Kodi khansa ya khomo la chibelekero imadya ziwalo za mkati	**Zoona**	**Zonama**	**Sindikudziwa**
62.	Kodi matenda a khansa la nkhomo la chibelekelo ndiwochizika	**Zoona**	**Zonama**	**Sindikudziwa**
PERCEIVED BENEFITS				
63.	Kodi kuyezetsa khansa ya khomo la chibelekero kumapulumutsa moyo ngati yapezeka ndi kuchizidwa koyambilira	**Zoona**	**Zonama**	**Sindikudziwa**
64.	Kodi kuyezetsa khansa ya nkhomo la chibelekelo mwa ndondomeko pamene palibe zizindikiro ndi kutaya nthawi ndi ndalama	**Zoona**	**Zonama**	**Sindikudziwa**
65.	Kodi kuyezetsa khansa ya nkhomo la chibelekero kumachepetsa kuopsya kokhala ndi khansa imeneyi	**Zoona**	**Zonama**	**Sindikudziwa**
66.	Kodi khansa ya khomo la chibelekero ndi yochizika ikapezeka mwamsanga	**Zoona**	**Zonama**	**Sindikudziwa**
67.	Kodi kuyezetsa khansa yakhomo la chibelekero kumachtitsa manyazi	**Zoona**	**Zonama**	**Sindikudziwa**
68.	Kodi kuyezetsa khansa ya khomo la chibelekero kumavumbulutsa matenda wobisika	**Zoona**	**Zonama**	**Sindikudziwa**

69.	Kodi pamene mzimayi wayezetsa khansa ya nkhomo la chibelekelo ndipamene akhonza kugwilitsa ntchito njira ya kulera ya loop	**Zoona**	**Zonama**	**Sindikudziwa**
70.	Kodi kuyezetsa khansa kumapatsa mzimayi mtendere mumtima	**Zoona**	**Zonama**	**Sindikudziwa**
71.	Kodi kuyezetsa khansa ya nkhomo la chibelekelo ndi njira yomwe mzimayi angadziwe ngati ali ndi matenda a khansa imeneyi.	**Zoona**	**Zonama**	**Sindikudziwa**
PERCEIVED BARRIERS				
72.	Kodi mzimayi amene ali ndi Khansa ya khomo lachibelekero amatengedwa ngati wa ubve	**Zoona**	**Zonama**	**Sindikudziwa**
73.	Kodi ngati mungakhale ndizotsatira zosakhala bwino pamene mwayezetsa khansa la nkhomo la chibelekelo mukuyenera kuwafotokozera amuna anu kapena m’modzi wamubanja lanu.	**Zoona**	**Zonama**	**Sindikudziwa**
74.	Kodi kuyezetsa khansa ya khomo lachibelekero ndi kopweteka	**Zoona**	**Zonama**	**Sindikudziwa**
75.	Kodi kuyezedwa ndi munthu wamwamuna wopereka chithandizo kuchipatala kungakupangitseni kuti musakayezetse khansa ya khomo la chibelekero	**Zoona**	**Zonama**	**Sindikudziwa**
76.	Kodi ndizochititsa manyazi kukayezetsa khansa yankhomo la chibelekero	**Zoona**	**Zonama**	**Sindikudziwa**

77.	Kodi simungafune kuwonedwa ndi anzanu kuchipatala choyezetsa khansa la nkhomo la chibelekero.	**Zoona**	**Zonama**	**Sindikudziwa**
78.	Kodi Vuto landalama likhonza kundipangitsa kusapita kukayezedwa khansa la nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
79.	Kodi kudikira kwanthawi yayitali kuti muyesedwa kukhonza kukupangitsani osapita kukayezedwa khansa ya nkhomo lachibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
80.	Kodi kuyenda mtunda wautali kupita kuchipatala kungakupangitseni ulesi kupita kukayezetsa	**Zoona**	**Zonama**	**Sindikudziwa**
81.	Kodi kusowa kwa nthawi chifukwa cha zintchito zapankhomo kungandipangitse kusapita kukayezetsa	**Zoona**	**Zonama**	**Sindikudziwa**
82.	Kodi kukhala ndi ana angono ndikopangitsa mzimayi kuti asakwanitse kupita kukayezetsa	**Zoona**	**Zonama**	**Sindikudziwa**

CUES TO ACTION

KOMWE MUNGAPEZE MAUTHENGA OKHUZA ZA KHANSA YA KHOMO LACHIBELEKERO

87. Kod**i** munadziwa bwanji zokhudzana ndi khansa yakhomo la chibelekero ndi kuyezetsa kwake. (Mayankho angapo atha kuperekedwa

1. Amnzanga
2. M'modzi wa pabanja langa
3. Azachipatala
4. Kanema
5. Wailesi
6. Maposita
7. Magazines
8. Nyuzipepa
9. Mabukhu
10. Pamphlets
11. Ndi zina tchulani……

88. Kodi komwe mungapeze mauthenga a khansa yakhomo la chibelekero ndi kuti? (Mayankho angapo atha kuperekedwa)

1. Amnzanga
2. M'modzi wa pabanja langa
3. Azachipatala
4. Kanema
5. Wailesi
6. Maposita
7. Magazines
8. Nyuzipepala
9. Mabukhu
10. Zina (Tchulani)……

89. Kodindizinthu ziti zomwe inu mumakonda zomwe zimapereka uphungu wa khansa yakhomo la chiberekero zoti zikhoza kumukopa nzimayi kuti aka yezetse? (Dikirani
mayankho)

1. Kuulutsa uthenga pa kanema
2. Kuulutsa uthenga pa wailesi
3. Maphunziro operekedwa ndi a zaumoyo
4. Misonkhano ya m'madera
5. Zina (Tchulani)……

90. Kodi ndi malo ati omwe mungawakonde kuti mugawane uthenga okhudzana ndi khansa yakhomo la chibelekero? (Dikirani mayankho))

1. Kuchipatala
2. Maphunziro a amayi m'masukulu
3. Maphunziro a amayi m'matchalicthi
4. Misonkhano ya m'madera
5. Zina (Tchulani)……

HEALTH LOCUS CONTROL

91	Kodi mukhonza kuyezetsa khansa la nkhomo la chibelekelo chifukwa mumakhulupilira kuti ndi njira ya bwino kuti mukhale ndi moyo wathanzi	**Zoona**	**Zonama**	**Sindikudziwa**
92.	Kodi moyo wanu umakhala wabwino ngati mupita kukayezetsa khansa la nkhomo lachibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
93.	Kodi mumakhulupilira kuti ndi udindo wanu kutenga gawo pa zinthu zokhudzana ndi umoyo wanu	**Zoona**	**Zonama**	**Sindikudziwa**
94.	Kodi ndikofunika kuyezetsa khansa la nkhomo la chibelekelo chifukwa mukadzadwala matendawa mudzakhala inu wolakwa	**Zoona**	**Zonama**	**Sindikudziwa**

95.	Kodi mumakhulupilira kuti kuyezetsa khansa la nkhomo la chibelekelo kumapewetsa munthu kudwala matendawa.	**Zoona**	**Zonama**	**Sindikudziwa**
96.	Kodi muli ndi chikhulupiliro kuti anthu azachipatala adzakuthandizani kupewa matenda a khansa a nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
97.	Kodi mumakhulupilira kuti kuyezetsa khansa la nkhomo la chibelekelo mudzakhala ozindikira pa nkhani za umoyo wanu	**Zoona**	**Zonama**	**Sindikudziwa**
98.	Kodi mumakhulupilira kuti kuyezetsa matenda a khansa la nkhomo la chibelekelo ndikudziwa zotsatira mudzakhala olimbikitsidwa mtima	**Zoona**	**Zonama**	**Sindikudziwa**
99.	Kodi mumakhulupilira kuti malangizo amene adzakupatseni adokotala kapena anamwino adzakuthandizani kuti mukhale ndi moyo wanthanzi	**Zoona**	**Zonama**	**Sindikudziwa**
SOCIAL SUPPORT				
100.	Kodi ndichinthu chabwino kupita kukayezetsa khansa la nkhomo la chibelekelo pamene walimbikitsidwa ndi mwamuna wako,anzako, kapena anthu akuncthito.	**Zoona**	**Zonama**	**Sindikudziwa**
101.	Kodi mumakhulupilira kuti chilimbitso chochokera ku mpingo pankhani ya zaumoyo ndichofunika pamen munthu afuna kukayezetsa khansa la nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**

102.	Kodi ngati munthu ali wokhutitsidwa ndi chilimbikitso chochokera kwa nzako,mbanja lako, chimapangitsa kuti munthu akayezetsa khansa la nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
102.	Kodi pamene mwamuna wako wakuletsa kukayezetsa khansa la khomo la chibelekelo, ndikovuta kuti munthu ukayezetse	**Zoona**	**Zonama**	**Sindikudziwa**
ATTITUDE TOWARDS CERVICAL CANCER AND SCREENING				
103	Kodi muntha kukayezetsa khansa la nkhomo la chibelekelo ngakhale ndikofunika kuti muwonetse maliseche anu	**Zoona**	**Zonama**	**Sindikudziwa**
104.	Kodi manyazi angakupangitseni osapita kukayezetsa khansa la nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
105.	Kodi mumakhala ndi mantha pamene mwaganizila kuti angakupezeni ndi khansa la nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
106.	Kodi ndibwino kukhala osadziwa kuti muli ndi khansa ya nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**
107.	Kod ndibwino kudziwa kuti muli ndi khansa la nkhomo la chibelekelo	**Zoona**	**Zonama**	**Sindikudziwa**

INTENTION IN UPTAKE OF CERVICAL CANCER SCREENING

108.	Kodi muli ndi chilingalilo chokayezetsa khansa la nkhomo la chibelekelo?	1. Eya 2. Ayi
109.	Ngati mwabvomela, muganiza mungayezetse liti? (Multiple choice)	1. Pasanathe chaka 2. Pasanathe zaka ziwiri 3. Maganizo ena: ……..

Kaya muli ndi funso kapena ndemanga pankhani ya khansa ya chibelekelo? Dikirani yankho

……
…….

Zikomo kwambiri potenga nawo mbali pakafukufuku ameneyu**.**

APPENDIX C
INFORMED AND VOLUNTARY CONSENT TO PARTICIPATE IN RESEARCH

Informed and Voluntary Consent to Participate in Research

Date……/……/…….

Code……., Village……....

I hereby express my consent to participate as a subject in the research study entitled**.**

DETERMINANTS TO UTILIZATION OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE MALAWI: COMPARISON OF URBAN AND RURAL COMMUNITIES

I am informed of the research study aim and objectives and I thoroughly read the detailed statements in the information sheet given to me. I have had the opportunity to ask any questions or any additional information related to this study and any questions that I have asked have been answered to my satisfaction

I am aware of my right to further information and my right to withdraw or refrain from the participation anytime without any consequence. I consent to the researcher's use of my private information obtained in this research, but do not consent to an individual disclosure of private information. The information must be presented as part of the research results as a whole.

On the condition that I am not treated as indicated in the information sheet distributed to the subjects, I can contact the Chair of The Committee for Research Ethics (Social Science) at the office of MU-SSIRB, Office of Faculty of Social Sciences and Humanities, Mahidol University, Tel 66-2- 441 9180, Fax 66-2-441 9181

I thoroughly understand the statement in the information sheet for the research subjects and in this consent form and with full knowledge of all previous, I agree, of my own free will, to participate in this study, I thereby give my signature.

Signature of participant……..

Date…….

APPENDIX D
INFORMED CONSENT FORM (CHICHEWA)
(CHILOLEZO KUTI NDIFUNSIDWE MAFUNSO OKHUDZANA NDI KAFUKUFUKU)

Ndikupereka chilolezo kuti ndifunsidwe mafunso okhudzana ndi kafukufuku amene azathandize kuwamvetsa amayi ndi zimene amaganiza ndi chilingaliro chopita chokhudzana ndi nchitidwe wokayezetsa khansa la nkhomo la chibelekelo.

Mary Chosamata ndi wophunzira wa za unamwino amene akupitiliza maphunziro ake a Masters ndi University ya Mahidol ku Thailand. Zafotokozeredwa kwa ine kuti nditenga nawo mbali pa kafukufuku wofuna kupeza maganizidwe ndi chilinganilo chogwiritsa ntchito chithandizo choyezetse za matenda a khansa yakhomo la chibelekero pakati pa amayi azaka makumi atatu ndi makumi anayi ndi mphambu zisanu.” Ndikumvetsetsa kuti zotsatira za kafukufukuyi zizagwiritsidwa ntchito kupititsa patsogolo mwayi wa amayi oyezetsa ndicholinga chopititsa mtsogolo nchitidwe oyezetsa khansa la nkhomo la chibelekelo.

Ndamvetsetsa kuti ndi funsidwa mafunso omwe ndizayankha. Zafotokozedwa kwa ine kuti kufunsidwa mafunsoku kutenga pafupi-fupi mphindi makumi atatu (30 minutes) za nthawi yanga.

Ndadziwitsidwa kuti dzina langa silidzatchulidwa ndipo silidzaoneka pa chikalata china chilichonse ndiponso silidzagwiritsidwa ntchito muzotsatira zakafukufukuyu. Kufunsidwa mafunsoku ndi kodzipereka ndekha ndipo nditha kusiya nthawi ina ili yonse kutenga nawo mbali.

Ndi kuyembekezera kuti kafukufukuyu adzapeza zosowa za amayi pofuna kuziwa zokhudza khansa yakhomo la chibelekero. Zambiri zokhuzana ndikafukufukuyu nditha kuzipeza kwa:

Mary Chosamata, C/O Dr B.I Chosamata, College of Medicine, P/Bag 360, Chichiri, Blantyre
Malawi
Telefoni :+ (265)88 545 8858

Ndidzapatsidwa adilesi ndi telefoni nambala kuti ngati ndingankhale ndizina zomwe ndifune kuziwa zakafukufukuyu nditha kufunsa mulizi.

Tsiku lofunsidwa mafunso……

Saini ya otenga mbali……

Saini ya ofunsa mafunso……

APPENDIX E
PARTICIPANT INFORMATION

Participant Information ***In this document, there may be some statements that you not understand. Please ask the researcher or the coordinator to give you explanations until you are well understood.***

Research Title. **DETERMINANTS TO UTILIZATION OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE MALAWI: COMPARISON OF URBAN AND RURAL AREAS.**

Researcher: Mrs. Mary Sesu Chosamata

Research Site: Urban and rural communities of Blantyre District, Malawi

Contact address: C/O Dr B.I. Chosamata, College of Medicine, P/Bag 360, Chichiri, Blantyre 3

Telephone number: +265 9999 23 416

Email address: yambumba.2305@gmail.com

Source of fund: Thailand International Cooperation Agency (TICA)

Dear participants,

My name is Mary Sesu Chosamata studying Master in Primary health care management student at ASEAN Institute for Health Development, Mahidol University, Thailand. I am conducting a research in fulfillment for my Master's degree, regarding "**DETERMINANTS TO UTILIZATION OF CERVICAL CANCER SCREENING AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE DISTRICT MALAWI: COMPARISON OF URBAN AND RURAL AREAS"**

The aim of this study is to determine the percentage of women that utilize cervical cancer screening and identify determinants to utilization of cervical cancer screening among urban and rural women in Blantyre District, Malawi.

You are invited to participate in this study if you are a woman aged 30-45 either you been screened for cervical cancer or not. The information you provide will be helpful to determine percentage of women that that utilize cervical cancer screening and in addition to identify determinants to utilization of cervical cancer screening. Additionally, the result of this study can benefit to improve education and awareness interventions on cervical cancer and screening with an aim to increase uptake of cervical cancer screening. This study will include 260 women aged 30-45 years living in urban and rural areas of Blantyre District and data collection will be from period of 30 April from the 30 of May,2015.

Your participation in this study is entirely voluntary and you have the right to withdraw from this study at any time without prior notice. And the refusal to participate or the withdrawal from this research study will not have any negative consequences.

When you understand the study information and agree to participate in this study, you will be asked to complete a consent form and answer 109 questions which consist of (1) Socio-demographic Factors (2) Knowledge of cervical cancer and screening (3) Perception of cervical cancer and screening (4) Health locus control (5) Social support (6) Attitude towards cervical cancer and (7) intention to utilize cervical cancer screening services. The interview will take approximately 30-45 minutes of your time.

In order to maintain confidentiality, the consent form will be handed over to you before the start of interview and researcher will explain about the questions. The type of survey is face to face interview.

Your private information will be kept confidential, and it will not be subject to an individual disclosure, but will be included in the research report as part of the overall results. In the questionnaire instead of your name it have a code number and your name will not be disclosed in reporting of any information.

If you have any questions regarding this study or would like to have additional information to assist you in reaching a decision about your participation, please contact me, Mrs. Mary Sesu Chosamata (+265) 9999 23 416, or by e-mail: yambumba.2305@gmail.com. On the condition that you are not treated as indicated in the information sheet distributed to the subjects, you can contact the Chair of the

National Health Sciences Research Committee, Ministry of Health and Population, P.O Box 30377, Lilongwe 3, Malawi. Telephone numbers: + 265 789 400 or fax + 265 789 431.The cost of your telephone call will be reimbursed by the investigator.

Thank you for considering to be a participant for this study. Thank you in advance for your participation and assistance in this research study.

I thoroughly read the details in this document.

Signature…… Participant

(…….....)

Date…….....

APPENDIX F
PARTICIPANT INFORMATION SHEET (CHICHEWA VERSION)

Mukupephedwa kutenga nawo mbali mukafukufuku wofuna kupeza“Mene azimayi akugwilitsila ntchito chithandizo choyezetse zamatenda a khansa yakhomo la chibelekero pakati pa amayi azaka makumi atatu ndi makumi anayi ndimphambu zinayi.” Kafukufukuyu akupangidwa ndi Mary Chosamata amene ali wophunzira waza unamwino amene akupitiliza maphunziro ake a Masters ndi University ya Mahidol ku Thailand. Zotsatira zakafukufukuyu zizagwiritsidwa ntchito kupititsa patsogolo mwayi wa amayi kuti aziyezetsa komanso kuti chisamaliro chimene chimaperekedwa kwa amayiwa chithe kuchepetsa imfa zobwera kuzera mu matenda a khansa yachiberekero. Mufunsidwa mafunso okhuza mmene mukuwonera zinthu zosiyanasiyana zakhansa ya nkhomo lachibelekero.

Kufunsidwa mafunsoku kutenga pafupifupi mphindi makumi atatu kapena makumi anayi ndimphambu zisanu (30 to 45 minutes) zanthawi yanu. Mulembedwa kukhala mukafukufukuyu pamodzi ndiamayi ena289 amene ali ndi zaka makumi atatu ndi amene ali ndi zaka makumi anayi ndi mphambu zinayi amene akukhala ma dela a nzinda wa Blantyre ndimadela ozungulira.

Kufunsidwa mafunsoku ndikodzipereka nokha ndipo mutha kusiya nthawi ina iliyonse kutenga nawo mbali. Choncho amene azatenge nawo mbali mukafukufukuyu ali ndi ufulu kupanga chiganizo kuzipereka potenga mbali; kufunsa mafunso kuti alongosoleredwe bwino bwino,kukana kupereka maganizo anu pa mafunso ena kapena kusiya nthawi ina iliyonse popanda chilichonse chobvuta ndipo zomwe tizakambirana zizasungidwa mwachinsisi.

Manambala ndiamene azalembedwe pamapepala a kafukufuku mmalo mwa dzina lanu. Makalata a chilolezo amene musayine adzayikidwa muthumba losiyana ndithumba lomwe mukhale chikalata china cha mayankho anu amafunso amene mupereke. Poonetsetsa kuti chinsisi chikusungidwa, mapepala onse ali ndizimene mwayankha azasungidwa mukabati yotsekedwa ndi makiyi.

Mulizi wakafukufukuyu ndiwothandizila ndiamene azakhala ndimwayi ogwiritsa ntchito mapepala okhala ndizomwe muyankhe. Zotsatira zakafukufukuyu sizidzakhala ndichidzindikilo chili chonse cha mayi wina aliyense. Sipakuyembekezereka kuti otenga mbali mukafukufukuyu kuti azakumana ndizobvuta zili zonse zokhuzana ndikafukufukuyu. Ngati simuzasangalatsidwa kufunsidwa mafunso ena, mutha osayankha kapena kusiya kutenga mbali mukafukufukuyu nthawi iliyonse.

Mutha osapeza phindu liri lonse kwainu potenga nawo mbali mukafukufukuyu. Komabe, tikuyembekezera kuti zotsatira zakafukufukuyu zizathandiza kuti anthu a boma ndi amabungwe azathe kupanga njira zodziwitsila anthu ndipo kuwaphunzitsa zamatenda a khansa yankhomo la chibelekelo kuti azimayi ndi anthu ena wonse akhale odziwa zamatendawa ndipo azimayi athe kupita kuchipatala kukalandira chithandizo choyezetsa zamatenda a khansa la chibelekelo.

Kugwiritsira ntchito zotsatira zakafukufukuyu kuzathandiza kusintha mmene amayi amaonera matenda a khansa yankhomo lachiberekero. Zizathandizanso kupeza mafunso ena ofuna kuyankhidwa okhuza khansa yachibelekero ndichisamaliro chake, komanso malamulo okhuza kayendetsedwe kakuyezetsa khansa yakhomo lachiberekero.

Ngati mungakhale ndimafunso, zowonjezera kapena madandaulo okhuzana ndikafukufukuyu mukhonza kufunsa**:**

Mrs Mary SesuChosamata, C/O Dr B.I. Chosamata, College of Medicine, P/Bag 360,Chichiri, Blantyre 3, +265 88 545 8858,yambumba.2305@gmail.com.

Ndipo ngati pazakhale zina zonse zomwe simudzakhutira nazo mukhonza kupitsa madandaulo anu kwa: Chair of the National Health Sciences Research Committee, Ministry of Health and Population, P.O Box 30377, Lilongwe 3, Malawi. Telephone numbers: + 265 789 400 or fax + 265 789 431.

Ndatha kuwerenga zonse zakafukufukuyo

Saini……..olembedwa

(……..)

Tsiku……

SUPPLEMENTARY TABLES

Supplementary Table 1. Knowledge on cause, risk factors, signs and symptoms of cervical cancer (n=257)

	Correct N (%)	Incorrect N (%)
Cervical cancer is caused by Human Papilloma Virus	49 (19.1)	207 (80.5)
Human Immunodeficiency causes cervical cancer	191 (74.3)	65 (25.3)
HPV infection is contracted by sexual intercourse	103 (40.1)	154 (59.9)
Multiple sexual partners increases risk of cervical cancer	180 (70.0)	77 (30.0)
Family history increases risk for cervical cancer	100 (38.9)	157 (61.1)
Sexually transmitted diseases increase risk of cervical cancer	164 (63.8)	93 (36.2)
Smoking increases risk for cervical cancer	144 (56.0)	113 (44.0)
Sex at an early age increases risk for cervical cancer	186 (72.4)	71 (27.6)
Having three or more child deliveries increases risk of cervical cancer	200 (77.8)	57 (22.2)
Use of combined oral contraceptives increase risk for cervical cancer	127 (49.4)	130 (50.6)
Foul smelling vaginal discharge is sign of cervical cancer	140 (54.5)	117 (45.5)
Vaginal pain during sexual intercourse	149 (58.0)	108 (42.0)
Irregular menstrual bleeding	143 (55.6)	114 (44.4)
Vaginal bleeding after sex	142 (55.3)	115 (44.7)
Frequent micturition	218 (84.8)	39 (15.2)
Vaginal itchiness	42 (16.3)	215 (83.7)
Persistent lower abdominal pain	137 (53.3)	118 (45.9)
Who requires cervical cancer screening	153 (59.5)	104 (40.5)
When to start cervical cancer screening	172 (66.9)	85 (33.1)
How often to have cervical cancer screening	17 (6.6)	240 (93.4)
Reason for cervical cancer screening	216 (84.0)	41 (16.0)

Supplementary Table 2. Perceived risk on cervical cancer and screening (n=257)

	Agree	**Not sure**	**Disagree**
	N (%)	**N (%)**	**N (%)**
If no discomfort or pain, do not need cervical cancer screening.	19 (7.4)	5 (1.9)	233(90.7)
Cervical cancer screening test is for sexually active women.	4 (1.6)	13 (5.1)	240(93.4)
Your chances of having cervical cancer are high.	34(13.2)	54 (21.0)	169(65.8)
Having cervical cancer is a matter of bad luck.	31(12.1)	35 (13.6)	191(74.3)
You do not require cervical cancer screening because there is no family history of cervical cancer.	5(1.9)	11 (4.3)	241(93.8)
Women that consider themselves as old do not require cervical cancer screening.	4 (1.6)	9 (3.5)	244(94.9)
Compared to other women of the same age your probability of having cervical cancer are low.	199(77.4)	38 (14.8)	20(7.8)

Perceived risk was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

Supplementary Table 3. Perceived severity towards cervical cancer and screening (n=257)

	Agree	**Not sure**	**Disagree**
	N (%)	**N (%)**	**N (%)**
Cervical cancer increases household expenditure	26 (10.1)	73 (28.4)	158 (61.5)
You would not get cervical cancer screening test because of fear of the result	9 (3.5)	9 (3.5)	238 (92.6)
You would be encouraged to have screening test when you see a woman suffering from cervical cancer	244 (94.9)	3 (1.2)	10 (3.9)
You would be encouraged to have screening test when you see a woman suffering from cervical cancer	74 (28.8)	23 (8.9)	160 (62.3)
Loss of the cervix or uterus through surgery would affect women sexually	21 (8.2)	75 (29.2)	161 (62.6)
You would rather take the test and discover the hidden disease than go through the pain	235 (91.4)	10 (3.9)	12 (4.7)
Women with cervical cancer die from the disease	106 (41.2)	27 (10.5)	124 (48.2)
Cervical cancer eats the internal organs	154 (59.9)	41(16.0)	62 (24.1)
Cervical cancer can easily be treated	12 (4.7)	31(12.1)	12 (4.7)

Perceived severity was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

Supplementary Table 4. Perceived benefits towards cervical cancer and screening (n=257)

	Agree	**Not sure**	**Disagree**
	N (%)	**N (%)**	**N (%)**
Cervical cancer screening could save life when cancer is detected and treated at an early stage	246 (95.7)	11(4.3)	
Regular a symptomatic screening is a waste of time and money	10 (3.9)	6 (2.3)	241 (93.8)
Regular cervical cancer screening reduces risk of cervical cancer	241 (93.8)	10 (3.9)	6 (2.3)
Cervical cancer is curable if detected early	235 (91.4)	14 (5.4)	8(3.1)
Cervical cancer screening is humiliating	6 (2.3)	10 (3.9)	182 (70.8)
Screening test confirms problem with reproductive organ	182(70.8)	53(20.6)	22 (8.6)
Only when you have done cervical screening you will be able to use contraceptive device like IUCD	116 (45.1)	93 (7.7)	44 (17.1)
Having screening test will give you a peace of mind	224(87.2)	17 (6.6)	16 (6.2)
Cervical Screening test confirms cervical cancer	243 (94.6)	7 (2.7)	7 (2.7)

Perceived benefit was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

Supplementary Table 5. Perceived barriers towards cervical cancer screening (n=257)

	Agree	**Not sure**	**Disagree**
	N (%)	**N (%)**	**N (%)**
Women with cervical cancer are considered dirty	32 (12.5)	19 (7.4)	206 (80.2)
Informing husband or family members of test results would discourage women to go for screening	123 (47.9)	9 (3.5)	125(48.6)
Cervical cancer screening is painful	26 (10.1)	66 (25.7)	165 (64.2)
Being screened by a male health care worker would discourage you to have cervical screening	9 (3.5)	9 (3.5)	239 (93.0)
It is embarrassing to have cervical cancer screening	3 (1.2)	5 (1.9)	249 (96.9)
Fear of discrimination by friends upon seen being screened would discourage women from having cervical cancer screening	10 (3.9)	5 (1.9)	242 (94.2)
Financial constraints will make you not go for cervical screening	30 (11.7)	3 (1.2)	224 (87.2)
Long waiting time at hospital is likely to discourage you from going for screening	25 (9.7)	3 (1.2)	229 (89.1)
Long distance to health facility would discourage you from having cervical screening	21 (8.2)	29 (.8)	234 (91.1)
Household chores may discourage women from having cervical cancer screening services	12 (4.7)	2 (.8)	243 (94.6)
Having small children would prevent women from having cervical cancer screening	11 (4.3)	2 (.8)	244 (94.9)

Perceived barrier was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

Supplementary Table 6. Cues to action of cervical cancer and screening (n=257)

	Number (%)
How respondents obtained information	
Never heard	13 (14.4)
Health care provider	136 (52.9)
Radio	38 (14.8)
Friends	37 (14 .4)
Others	9 (3.5)
Available sources of information	
Health care provider	232 (90.3)
Friends	12 (4.7)
Others	13 (5.1)
Best methods to provide information	
Health care provider	158(61.5)
Advertisement on radio	43(16.7)
Campaign on television	29(11.3)
Others	27(10.5)
Preferred venues for information sharing	
Hospital	174 (67.7)
Women's seminars in churches	25 (9.7)
Others	58 (22.6

Supplementary Table 7. Health locus control on cervical cancer and screening (n=257)

	Agree	Not sure	Disagree
	N (%)	**N (%)**	**N (%)**
You will have screening test because you believe is the right action for you to stay health?	253 (98.4)	1 (0.4)	3(1.2)
You will have screening test because you believe your physical well- being depends on how well you take care of yourself?	254(98.8)	1 (0.4)	2 (0.8)
You will have screening test because you believe you are responsible for your own health	251(97.7)	4(1.6)	4(1.6)
You will have screening test because you will blame yourself if you get sick?	45(17.5)		212 (82.5)
You will have screening test to avoid cervical cancer?	239 (93.0)	5 (1.9)	13 (5.1)
You will have screening test because you believe health workers will help you avoid cervical cancer	254 (98.8)		3 (1.2)
You will have screening test because you believe you can maintain good health by consulting with nurses and doctors?	256 (99.6)		1 (0.4)
You will have screening test because you believe doctors and nurses instructions will help you stay health?	256 (99.6)		1 (0.4)
You will have cervical screening because avoiding to do test will be ignorant of your health status?	256 (99.6)		1 (0.4)

Health locus of control was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

Supplementary Table 8. Social support towards cervical cancer and screening (n=257)

	Agree	**Not sure**	**Disagree**
	N (%)	**N (%)**	**N (%)**
You will have screening test because you have good support from friends, family and work colleagues	**250(97.3)**	**1(.4)**	**6(2.3)**
You will have screening test because your religion provides reassurance about health issues	**244(94.9)**	**1 (.4)**	**12 (4.7)**
Satisfaction with social support from family members	**249 (96.9)**	**2 (.8)**	**6 (2.3)**
Husband will refrain you from having cervical screening	**6 (2.3)**	**1(.4)**	**250 (97.3)**

Social support was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

Supplementary Table 9. Attitude on cervical cancer and screening (n=257)

	Agree	**Not sure**	**Disagree**
	N (%)	**N (%)**	**N (%)**
You are likely to have cervical screening despite feeling embarrassed of showing genitalia.	254(98.8)	2(0.8)	1(0.4)
You are likely not to have cervical screening test because of feeling shy of the procedure.	7 (2.7)	1.4)	249(96.9)
Thinking of cervical screening you are afraid of being diagnosed with cervical cancer.	67(26.1)	1(0.4)	189(73.5)
Not willing to know about your cervical cancer status, you are likely not to have cervical screening.	1 (0.4)	2(0.8)	254(98.8)
Being eager to know about your cervical cancer status, you are likely to have cervical screening.	254 (98.8)	1(0.4)	2(0.8)

Attitude was scored by awarding 1=disagree, 2=Not sure and 3=agree for the positive statement and 1=agree, 2=not sure and 3=disagree for the negative statement.

APPENDIX G
ETHICAL DOCUMENTS

Certificate of MU-SSIRB Approval

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

Certificate of Approval No.:	2015/144.2204
MU-SSIRB No.:	2015/171 (B2)
Title of Project:	DETERMINANTS OF ATTITUDE AND INTENTION TO USE CERVICAL CANCER SCREENING SERVICES AMONG WOMEN AGED 30-45 YEARS IN BLANTYRE MALAWI: COMPARISON BETWEEN URBAN AND RURAL COMMUNITIES
Principal Investigator:	Mrs.Mary Sesu Chosamata
Name of Institution:	ASEAN Institute for Health Development, Mahidol University
Approval includes:	1) MU-SSIRB Submission form version received date 6 March 2015
	2) Participant Information sheet for Questionnaire version date 6 March 2015
	3) Informed consent form version 6 March 2015
	4) Questionnaire Guideline version received date 6 March 2015

The Committee for Research Ethics (Social Sciences) is in full compliance with International Guidelines of Human Research Protection such as Declaration of Helsinki, The Belmont Report, CIOMS Guidelines and the International Conference on Harmonization in Good Clinical Practice (ICH-GCP)

Date of Approval: April 22, 2015

Date of Expiration: April 21, 2016

Chairman

(Emeritus Professor Dr.Santhat Sermsri)

Head of the Institute

(Assoc.Prof.Dr.Wariya Chinwanno)

Dean of Faculty of Social Sciences and Humanities

Office of The Committee for Research Ethics (Social Sciences), Faculty of Social Sciences and Humanities, Mahidol University
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In reply please quote No. MED/4/36c

MINISTRY OF HEALTH
P.O. BOX 30377
LILONGWE 3
MALAWI

9th April 2015

Mary Semu Chosamata
College of Medicine

Dear Sir/Madam,

Re: Protocol # 15/03/1389: Determinants of attitude and intention to use cervical cancer screening among women aged 30-45 in Blantyre district: A comparison of urban and rural communities

Thank you for the above titled proposal that you submitted to the National Health Sciences Research Committee (NHSRC) for review. Please be advised that the NHSRC has **reviewed** and **approved** your application to conduct the above titled study.

- **APPROVAL NUMBER** : **NHSRC # 15/03/1389**
  The above details should be used on all correspondence, consent forms and documents as appropriate.
- **APPROVAL DATE** : **9/04/2015**
- **EXPIRATION DATE** :This approval expires **on 9/04/2016**
  After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the NHSRC secretariat should be submitted one month before the expiration date for continuing review.
- **SERIOUS ADVERSE EVENT REPORTING** :All serious problems having to do with subject safety must be reported to the National Health Sciences Research Committee within 10 working days using standard forms obtainable from the NHSRC Secretariat.
- **MODIFICATIONS**: Prior NHSRC approval using standard forms obtainable from the NHSRC Secretariat is required before implementing any changes in the Protocol (including changes in the consent documents). You may not use any other consent documents besides those approved by the NHSRC.
- **TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the NHSRC using standard forms obtainable from the NHSRC Secretariat.
- **QUESTIONS**: Please contact the NHSRC on Telephone No. (01) 724418, 0888344443 or by e-mail on mohdoccentre@gmail.com
- **Other:**
  Please be reminded to send in copies of your final research results for our records as well as for the Health Research Database.

Kind regards from the NHSRC Secretariat.

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FOR CHAIRMAN, NATIONAL HEALTH SCIENCES RESEARCH COMMITTEE

BIOGRAPHY

NAME	Mary Sesu Chosamata
DATE OF BIRTH	May 19,1978
INSTITUTIONS ATTENDED	Kamuzu College of Nursing,University of Malawi,1997-2001,2004-2005 Bachelor of Science in Nursing, University Certificate in Midwifery. ASEAN Institute for Health Development, Mahidol University, 2014-2015 Master of Primary Health Care
SCHOLARSHIP RECEIVED	Thailand International Co-operation Agency (TICA)
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