FACTORS INFLUENCING DEMAND FOR CERVICAL CANCER SCREENING SERVICES IN HEALTH FACILITIES IN KENYA: A CASE OF YATTA SUB-COUNTY

BY

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DECLARATION

This project report is my original work and has not been submitted to any university for any award.

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This project report has been submitted for examination with my approval as the university supervisor.

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To my loving daughter Alice Nduku, brother Solomon Mutinda and grandma Monica Katei for their support and patience during the time of writing this project.
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ABBREVIATIONS AND ACRONYMS

AAM – African American Men
ACCP – Alliance for Cervical Cancer Prevention
AIDS – Acquired Immune Deficiency Syndrome
CC – Cervical Cancer
CHW – Community Health Worker
HIV – Human Immunodeficiency Virus
HPV – Human Papilloma Virus
ICC – Invasive Cervical Cancer
KDHS – Kenya Demographic and Health Survey
KNBS – Kenya National Bureau of Statistics
KNH – Kenyatta National Hospital
MCH-FP – Mother and Child Health-Family Planning
MOH – Ministry of Health
MOMS – Ministry of Medical Services
MOPHS – Ministry of Public Health and Sanitation
NACOSTI – National Commission for Science, Technology and Innovation
PATH - Program for Appropriate Technology in Health
PapSmear – Papanicolaou’s Smear
PPS – Probability Sampling Proportionate to Size
SEF - Social Ecological Theoretical Framework
UNDP – United Nations Development Program
VIA/VILI – Visual Inspection with Acetic acid/ Visual Inspection with Lugol’s Iodine
ABSTRACT

Cervical cancer is often the most common cancer among women in developing countries, yet current screening efforts have not been effective in reducing incidence and mortality rates. Over the years, demand for cervical cancer screening services has remained poor and in an effort to increase knowledge about screening participation in low-resource settings, this study sought to identify key factors influencing women's participation in cervical cancer screening in Kenya. This is because strategies for strengthening cervical cancer prevention should focus on ensuring that appropriate, cost-effective services are available and that women who most need the services will, in fact, use them. A number of factors may influence a woman’s ability and desire to participate in screening for cervical cancer, and the impact of decision-making process cannot be ignored. This study investigated the factors that influence the demand for cervical cancer screening services among rural women in Kenya. The study objectives included the influence of awareness, social support, women’s income levels and the extent to which women’s education level influences demand for cervical cancer screening services in Yatta sub-county. The study reviewed existing literature and used the socio-ecological model and identified a knowledge gap to be addressed through a cross-sectional household survey; targeting women aged between 25 to 55 years. This was conducted using a descriptive research design and an interviewer-administered questionnaire was administered to 347 participants on consenting to be part of the research. The findings showed that demand for cervical cancer screening was quite low at 37 (11%), awareness of the screening services was also low at 55 (12%). Among those screened, 65% were married and 95% had at least primary school education. Among the major findings of this study was that screened for cervical cancer, 79% of them live between 5 to 10km away from the nearest health facility; compared to 22% those living less than 5km to the facilities yet had not been screened. Others reported the cost of these services to be too high; yet have been screened. The respondents reported lack of awareness, fear of testing positive for cervical cancer, cost of procedure and practitioners not allowing them to ask questions and clarifications as the major hindrances to cervical cancer screening. Community health workers were reported as the major sources of information; considered trustworthy and motivate women to proactively seek screening; are the ‘interface’ between the formal health care system and the community, they bridge the gap between health needs and provision. It is across this bridge that primary health care may advance understanding individual and community-level barriers to uptake of screening services, improving healthcare worker performance by identifying effective methods for training, supporting and supervising community health care workers, identifying and evaluating strategies to strengthen the links between screening, diagnosis and treatment and identifying the optimal program design, outcomes and costs given the number of competing public health priorities facing the rural Kenyan women. It is hoped that the findings and recommendations of this study will be useful to the Ministry of health and other stakeholders to review its policies to increase the demand for cervical cancer services in health facilities. It is also hoped that the findings may also form a significant reference material to researchers in conducting cervical cancer studies.
CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

At the turn of the millennium, cervical cancer ranked as the second most common cancer after breast cancer among women worldwide (Parkin Maxwell, Paola Pisani, Ferlay Jacques, 1998). It forms in the interior lining of the cervix, the junction of the vagina and uterus. Compared with other cancers, screening for cervical cancer is the most effective as it detects and treats abnormal cells, and preventing many cases of cervical cancer from ever developing there is a window of up to ten years or more to detect and treat precancerous lesions and prevents their progression to invasive cancer. With the peak age of cervical cancer being 35-45 years of age, it claims the lives of women in the prime of their life when they may be raising children, caring for the family, and contributing to the social and economic life of their community. It has been estimated that the average life years lost due to cancer of the cervix is 25.3 years (Parkin Maxwell, Paola Pisani, Ferlay Jacques, Bray Freddie, 2000).

Global incidence estimates stand at 500,000 cases annually producing 300,000 deaths of which 85% occur in developing countries (Ferlay Jacques, Hai-Rim Shin, Bray Freddie, David Forman, Colin Mathers, 2008). Cervical cancer used to be the leading cause of cancer death for women in the United States. In 2010, 11,818 women in the United States were diagnosed with cervical cancer and only 3,939 died. However, in the past 40 years, the number of cases of cervical cancer and the number of deaths from cervical cancer have decreased significantly (National Institutes of Health, 2010).

Cervical cancer is the sixth most common cancer in Europe for females, and the 16th most common cancer overall, with around 58,400 new cases diagnosed in 2012. European cervical cancer incidence rates (per 100,000) population, females in the United Kingdom in 2011 were highest in England at 2,500 and lowest in Northern Ireland at 105 (Office for National Statistics, 2011).
In 2005, there were approximately 58,000 new cervical cancer cases and about 20,000 deaths in China due to the lack of a nationwide organized cervical cancer screening program, making it remain an important public health problem in mainland China (National Office for Cancer Prevention and Control, 2009).

In Australia, cervical cancer is uncommon with only about 734 Australian women, (seven women in every 100,000), are newly diagnosed with cervical cancer each year, accounting for approximately 1.7 per cent of all cancers in Australian women (Australian Cancer Incidence and Mortality, 2011). Since the introduction of the National Cervical Screening Program in 1991, the number of new cases of cervical cancer for women of all ages almost halved to 2005, and mortality also halved from 1991 to 2006.

Current estimates indicate approximately 132,000 new cases diagnosed and 74,000 deaths annually in India, accounting to nearly 275,000 (1/3rd) of the global cervical cancer deaths (WHO, 2007). Despite the availability of methods for prevention, more than 95 percent of women in India have never been screened for cervical cancer. Consequently, women in India are most often diagnosed during later stages of cervical cancer, significantly reducing their survival.

Cervical cancer is the most common cause of cancer deaths in Africa accounting for 10.4%, which represents one in five of all cancer deaths in African women led by Zambia with 38.6 deaths per 100,000 people (Nestor Cruz Munoz, 2003). In Nigeria each year approximately 10,000 women develop cervical cancer and about 8,000 women die (Airede, 2008). In Egypt, current estimates indicate that every year 866 women are diagnosed with cervical cancer and 373 die of the disease (HPV and Related Cancers, 2012). Indeed sub-Saharan Africa bears the highest global burden of this fatal yet entirely preventable disease. Worldwide, Eastern Africa is the region that is most affected by cervical cancer with an age standardized incidence rate and mortality rate of 25.3 and 34.5 per 100,000 women respectively. In Tanzania, Uganda and Rwanda cervical cancer incidence rates are 37.5, 34.9 and 25.4 respectively (WHO, 2010).

In Kenya, the estimated annual number of cervical cancer cases is 2,454 while the annual number of deaths due to cervical cancer is 1,676 (WHO, 2010). It is projected that by the year 2,025, the number of new cervical cancer cases annually will reach 4261. It has been
reported that there are 10 to 15 new cases of cervical cancer in Nairobi each week (Kenya Cancer Registry). More statistics in appendix III. In 2007, the government began rolling out cervical cancer screening at selected HIV care centers using a method known as visual inspection with acetic acid, which studies say is an efficient and cost-effective method of screening. Screening for cervical cancer is resource and time intensive. A study published in 2005 by the New England Journal of Medicine found that screening of 35-year-old women would reduce the lifetime risk of cervical cancer by 25-36 percent. It was also found that in Kenya it is more effective to use screening strategies such as visual inspection of the cervix with acetic acid (VIA) or DNA testing for HPV, which requires less clinic visits and are less dependent on laboratory infrastructure (Goldie, 2005).

Kenya’s Ministry of Public Health and Sanitation and Ministry of Medical Services are also in the process of implementing their National Cancer Control Strategy, which aims to build strong cancer prevention and control capacities both in public and private sectors through investment in awareness, human resources, equipment, surveillance and research. Specifically addressing cervical cancer, the strategy outlines a tobacco control intervention, advocates for the control of biological agents that cause cancer and commencing HPV screening and vaccination (Kenya Ministry of Public Health and Sanitation and Ministry of Medical Services, 2009).

To increase service provision in Kenya, the Association of Social Franchising for Health was formed in 2013 by the coming together of Kenya’s six leading Social Franchisee Networks into one consolidated institutional body, to strengthen the quality and provision of health services through the development of knowledge sharing platform. This model has been long been recognized as an effective approach for rapid expansion of the delivery healthcare services and access for marginalized/rural communities. They are: Population Services Kenya, Gold Star Kenya, Family Health Options Kenya, Marie Stopes Kenya, Kisumu Medical and Education Trust, Sustainable Healthcare Foundation. They work by organizing community outreach programs in rural areas where services are offered for free, and the major focus has been mass screening for cervical cancer and treatment.

At the community level, the Kenyan group Maendeleo Ya Wanawake is an organization that aims to empower women as a means “to alleviate poverty and create a better environment and quality of life for all.” It coordinates community health workers to perform cervical screening and actively implements projects to prevent cancers. This women’s group joined up
with the Kenyan Ministry of Health, the Kenya Cancer Association and PATH to implement the Western Kenya Cervical Cancer Prevention Project, which looks to develop a model prevention program for low-resource communities. This project found that a strategy based on VIA and cryotherapy (a method of treatment) performed by nurses is able to be established and sustained in a rural setting in Kenya (PATH, 2004b).

1.2 Statement of the Problem

The Kenyan health system is administered from the top down by the Ministry of Health (MOH), and is also strongly impacted by the work of non-governmental organizations (NGOs), including faith-based organizations (FBOs) and private health facilities. In 2008, the Government of Kenya (GOK) operated 48% of the country’s health facilities, with NGOs and FBOs operating at 2% and 13% respectively (Ngigi and Macharia, 2006).

According to recent data, the health care utilization rate in Kenya is approximately 23% for those who are sick, meaning that a large percentage of the population does not seek care despite being ill (Kenya Health Profile, 2007). In order to bring about broad improvements in health in Kenya, it is essential to understand who is currently using the facilities that are available, and what factors are preventing those who do not seek care from doing so.

Despite the magnitude of the problem in Kenya and the fact that it is easily preventable, the cervical cancer screening coverage in Kenya for all women 18 to 69 years of age is only 3.2% (MOPHS & MOMS, 2012). The screening coverage of urban women is higher than that of rural women (4% versus 2.6%) (WHO, 2010). Further, cervical cancer is said to be more prevalent in poor and rural communities who do not have access to screening services. This is attributed to the fact that these women are more impoverished and less educated (KDHS, 2003), hence are likely to lack financial means to seek these screening services and to be unaware of cervical cancer and methods of preventing it (Gatune, 2005).

Few studies have been done to establish the factors influencing demand for cervical cancer screening in health facilities in Kenya, suggest ways of addressing the factors; hence this study will significantly contribute to this body of knowledge. According to the Kenya Cancer Statistics & National Strategies, it is difficult to get accurate national data because most data is coming from Nairobi and other urbanized settings like Mombasa, Kisumu and Eldoret, hence the need to carry out this study in Yatta sub-county.
1.2 Purpose of the Study

The purpose of this study was to investigate the factors influencing demand for cervical cancer screening services in health facilities in Kenya.

1.3 Objectives of the study

The objectives of this study were:

i. To establish the influence of awareness on demand for cervical cancer screening services in Yatta sub-county;

ii. To evaluate the influence of social support on demand for cervical cancer screening services in Yatta sub-county;

iii. To assess the influence of women’s income levels on demand for cervical cancer screening services in Yatta sub-county;

iv. To assess the extent to which women’s education level influences demand for cervical cancer screening services in Yatta sub-county;

1.4 Research Questions

This study was set out to answer the following study questions:

i. How does women’s level of awareness influence demand for cervical cancer screening services?

ii. To what extent does social support influence demand for cervical cancer screening services?

iii. To what extend does women’s level on income influence demand for cervical cancer screening services?

iv. To what extent does women’s education level influence demand cervical cancer screening service?

1.5 Significance of the Study

The occurrence of cancer in developing countries is often neglected as a public health problem of major concern because of the occurrence of many infectious conditions, which tend to overwhelm the health-care service sector.
Hence, it was hoped that findings from this study would be important in several ways:
The findings and recommendations of this study may be useful to MoPHS and MOMs to review its policies on cervical cancer to increase the demand for cervical cancer services in health facilities. It was also hoped that the findings may also form a significant reference material to researchers in conducting cervical cancer studies.

1.6 Delimitation of the Study

The study was delimited to households in Yatta sub-county and only women aged between 25 to 55 years of age, living in the selected households will participate. The sample was similar in nature to the population that is highly affected by cervical cancer in other areas in Kenya where the results were generalized. The study was also delimited to the factors influencing demand for cervical cancer screening services in health facilities in Kenya.

1.7 Limitations of the Study

This study was limited to self-reported data which was likely to result to selective memory or lack of interest in the subject by the respondents. This was lessened by the researcher administering the questionnaires and probing for clarifications from responses to obtain valid responses. For respondents who do not understand English the questions were translated to the local language.
Since this was a health-related study, participants would have been unwilling to give information out of fear but this was overcame by obtaining a permit from National Commission for Science, Technology & Innovation to authenticate the study. The respondents were assured that all information was treated with utmost confidentiality.

1.8 Assumptions of the Study

The researcher targeted female respondents from the selected households and assumed that they were willing to participate in this study and would give sincere feedback. This study also assumed that there would be at least two women aged between 25 – 55 in the sampled households. Another assumption of this study was that women in these households were available to answer the questions that guided this study.
1.10 Definitions of Significant Terms used in the Study

**Cancer** – a collective term used to classify a set of diseases, affecting any area of the body, characterized by the rapid proliferation of abnormal cells that have the potential to metastasize to other areas of the body.

**Awareness** – Having knowledge of cervical cancer screening services.

**Cervical cancer screening services** - Screening methods to find cervical changes that may lead to cervical cancer include the Pap smear test and visual inspection of the cervix.

**Demand for cervical cancer screening services** – the willingness and/or ability to seek, use and pay for cervical cancer screening services.

**Health facilities** - are places that provide health care for cervical cancer screening services and include hospitals, clinics mobile clinics.

**Screening** – use of simple tests across a healthy population to identify individuals who have a disease, but who do not yet have symptoms of cervical cancer.

**Screening coverage** – the extent of participation of eligible women in cervical cancer screening programs.

1.11 Organization of the study

The study consisted of five chapters. Chapter one dealt with the background of the study, statement of the problem, purpose of the study and objectives of the research. It also included research questions, significance of the study, assumptions of the study, limitations, delimitations and definitions of the significant terms.

Chapter two consisted of literature review related to factors influencing demand for cervical cancer screening services in health facilities by women aged between 25 to 55 years, where these concepts; awareness levels, social and economic factors and health care workers were discussed as well as the theoretical and conceptual frameworks of the study.

Chapter three included the research methodology, which included the research design, target population, sample size, sampling technique, research instruments, their reliability and validity and procedures for data collection and analysis techniques.
In chapter four, the results of the study were presented, analyzed and discussed according to the research objectives. Finally in chapter five, summary of findings, discussions, conclusions and recommendations for further action and contributions to the body of knowledge were discussed and suggestions for further research highlighted.
CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter consists of review of related literature. It contains: introduction, awareness levels of cervical cancer, social support, education and income levels, a theoretical and conceptual framework of the study.

2.2 Factors influencing demand for cervical cancer screening services in health facilities

Knowledge of what care is available and its potential benefits greatly influences demand for health care and awareness of cervical cancer screening services is key to utilization of these services by women.

2.2.1 Awareness levels and demand for cervical cancer screening services

A study carried out between 2008 and 2010 where 355 patients with histologically verified invasive cervical cancer (ICC) were recruited and followed up at Kenyatta National Hospital (KNH). Awareness of cervical screening procedures was only 126 (35.5%) of patients had heard of a cervical screening. Similarly, only 54 (15.3%) patients had ever had a cervical smear; of which 9 never received their results. From the results, the mean age distribution was 49 (range 21–94 years) with 28.2% of the women aged between 40 and 49 years. The peak age for ICC incidence was 47 although this was 37 for HIV positive women. An important finding was the low level of awareness of the importance of cervical cancer screening and equally disappointing were the low numbers of previous cervical smears carried out in the study population (Maranga Orora Innocent, Hampson Lynne, Oliver Gamal, Gichangi Peter, 2013)

Another study carried out among 384 female primary school teachers in Kasarani Division in Nairobi the year 2012 on the awareness of cervical cancer risk factors and practice of Pap smear testing. The results from this study showed that 84% (334) of the respondents had heard about cervical cancer while 13% (50) had never heard of cervical cancer. Majority of the respondents 75% (288) knew about the Pap smear test and only 25% (9) did not know
about the test. The mean age at which the respondents went for Pap smear test was 34 years; the reason being as a preventive measure at 49% (63), while 37% (84) did not know about the test. 12% (25) of the respondents said the test was too expensive, 11% (24) said they did not feel sick and did not have to go for the test, while 10% (23) felt embarrassed to go for the test. (African Journal of Health Sciences, 2012).

A survey carried out at the Nyeri Province General Hospital in 2012 to determine the factors influencing utilization of cervical cancer screening services among women between 15-60 years of age seeking Maternal Child Health / Family Planning. The survey was completed by 290 women who responded to questions on their level of education, awareness on issues relating to cervical cancer screening services, family support and accessibility and utilization of cervical cancer screening services. The results showed that utilization of cervical cancer screening services was low; at 24.7% despite the fact that the study group consisted of well educated women who had autonomy in decision making and good family support. Only less than 20% of the women knew the importance of cervical cancer testing and majority (80%) of the respondents could only mention one to two risk factors (Gichogo, 2012).

According to a 2011 study conducted in Eldoret, in Kenya's Rift Valley Province, on the perceptions of risk and barriers to cervical cancer screening, 35 percent of the participants did not think they were at risk of cervical cancer and felt no need to screen for the condition. In this study, 22.1 percent of the respondents mentioned fear of abnormal results as the reason they would not want to be screened for cancer while 11.4 percent mentioned cost. Just 12.3 percent of the participants reported having been screened at least once before. “Education, Gender Issues, Health and Nutrition, Stigma/Human Rights/Law” 2013.

A quantitative exploratory study of 250 urban women between the ages of 21 and 65 years in India was carried out in 2011 to examine the relationship between awareness and knowledge of cervical cancer and attitude toward participation in cervical cancer screening. The women indicated that they were employed outside of the home and earning a monthly income. The majority of participants in this study had never been screened for cervical cancer. Low reported rates of cervical cancer screening participation among the study population (3.4%) are reflective of overall population estimates of cervical cancer screening coverage for India (2.6%).
The proportion of African American men who report awareness of the risks of prostate cancer and participate in prostate cancer early detection activities such as screening is small, yet this population carries the heaviest burden of disease incidence and has the poorest survival rates (Winterich Grzywacz, Quandt Clark, 2009). Older African American men may experience even greater risk for late diagnosis of prostate cancer which contributes to poor chances of survival. A study conducted a randomized study of over 65,000 elderly men with no previous prostate cancer diagnosis who underwent prostate-specific antigen testing; after controlling for socioeconomic status, other medical conditions, age, and use of healthcare services. The Researchers concluded that “elderly blacks are substantially less likely to undergo screening than elderly whites”. Potential reasons for lower screening rates amongst elderly black men include mistrust of white health care providers, misperceptions about the nature of prostate exams and about the potential for impotence as a result of treatment, and the inconvenience and discomfort associated with the more invasive forms of screening (Sanchez ,2007).

From a research study in Washington State, a Latina commented, “If the doctor fails to give the information to the women, they will not get their mammograms. On the other hand, when the doctor tells the woman to go get a mammogram, they will make an effort to comply.” This same article notes that many of the women, due to both socioeconomic and cultural factors, do not see a health care provider regularly and therefore would not have preventive services recommended to them (Salazar,1996).

Physician recommendation for cancer screening has also been associated with African American Men (AAM) being up-to-date on screening guidelines (Wolf, 2006). They highlight the multiple aspects of cancer screening affected by physician counseling and recommendation; type of screening, the frequency of screening, and the age at which a patient is first screened. Physicians and health care providers are advocates in facilitating screening among high risk patients such as AAM; however, individual lifestyle also plays a key role in screening decision-making.

### 2.2.2 Social support and demand for cervical cancer screening services

The power of social networks is based on the assumption that the social network structure, by itself, is highly responsible for determining individual attitudes and behavior through access to resources and opportunities, and stimuli to behaviors. Social support and its potential
relationship to the cervical cancer screening exam has been less studied than the breast self-examination. However, it has already been shown that having a regular physician and talking to friends about issues related to health is associated with a more adequate frequency of having the Pap smear test. From this perspective, cancer screening is a relevant challenge to women who are at the same age and friends can facilitate information gathering and clarify doubts about the exam. However, the importance of the family in influencing such practice cannot be overlooked, especially the husband in case of married women (Seow A, Huang J, Straughan PT., 2000). In the context of studies in Brazilian nursing, the importance of social support has been recently emphasized. However, few national studies evaluate the relation of social support to women’s preventive practices. Acknowledging the importance of social support in different health contexts is essential both for planning nursing care and for developing studies that can be applied in such care (Pedro Rocha, 2008).

A study by Jones, Steeves, and Williams (2009) discusses the supportive role that family and friends play in assisting African American Men with prostate cancer screening decision making. This study reported that the participants discussed friends and family members in the context of trusted informal sources of health information; and saw these significant others as sources of encouragement to pursue healthy lifestyles and stay up-to-date with health screenings. Recent research also indicates that social isolation and lacking the social support system of family and friends to discuss health issues was associated with lower levels of screening in African American men (Ye, Williams, & Xu, 2009). Some Kenya women reported that they would appreciate if their male partners supported them in seeking these services (ACCP, 2004).

Facilitators of physician recommendation for routine cancer screening include having patient visits dedicated to preventive health services, a system of reminders and incentives for physician recommendations, when the patient requests the screening test, and a positive physician attitude that prioritizes cancer screening. Additional barriers to physician recommendation for cancer screening include whether or not the patient fully understands the risks and benefits of screening, patient preferences; patient comorbidities, lack of time, lack of reminder and cancer screening tracking systems, prior patient refusal for screening, physician forgetfulness and the physician’s knowledge of and attitudes toward screening. Community health workers in Kenya reported that some male partners do not permit their wives to seek screening because they do not want them traveling long distances, which often
requires travel at night (PATH, 2002). Women come to clinics only when they are able to finance the trip, negotiate their home responsibilities, and obtain support from their husbands. When women do make the trip, they are not as likely to return if they are turned away or otherwise unable to be seen.

### 2.2.3 Women’s income levels and demand for cervical cancer screening services

Poverty hinders women from seeking health care from health facilities. Opportunistic costs for forfeiting work and income even for a day prevents majority of them from going to health facilities for essential services (Goldie, Sue, Lynne Gaffikin, Goldhaber-Fiebert, Amparo Gordillo-Tobar, Carol Levin, Cedric Mahe and Thomas Wright, 2005).

Kingsley (2010) interviewed twelve healthcare professionals involved in providing cancer care to Latinos in the Seattle area. Preventive care is viewed as a luxury and as one Latina health care providers stated, “If you don’t have money for treatment, you don’t want to know if you’re sick.” This attitude may be reinforced by past experiences in Latin American countries, where treatment for cancer was unavailable due to lack of financial resources.

In 2007, 32.1% of Latinos in the United States lacked health insurance. Although there are a number of preventive services available for free or reduced cost, patients and providers are not always aware of these services. In addition, those without health insurance may see no point in being screened for a disease they do not have the finances to treat (Centers for Disease Control, 2008). Although financial assistance for cancer treatment is available in the United States, patients are often unaware of this availability until after diagnosis when they meet with a financial advisor or social worker. When faced with the possibility of a cancer diagnosis through screening, Latinos may choose instead to wait for symptoms to appear.

Latinos without health insurance are less likely to have a regular source of care, which is an important predictor of screening behavior. People with a trusted source of care that they access regularly are more likely to be referred for screening services. Uninsured patients are more likely to be treated for cancer at late stages of disease, and they're more likely to receive substandard care (American Cancer Society, 2009).
Geographic factors play an important role in access to and use of health services. In sub-Saharan Africa and other low-income countries, distance contributes to the time required to access health services, delays in decisions to seek treatment and increases in household expenditure on treatment and opportunity costs as a result of time spent away from income generating activities (Ensor and Cooper, 2004).

The major limitation in describing physical access to health services are the assumptions that people use the nearest health services and that they travel to it in a straight line. For example, women interviewed in Kenya reported that it is often problematic for a woman to go to a health clinic to be screened if she is “feeling healthy,” as she must convince her partner to get money for transport when she is not visibly ill (Abwao et al., 2001).

These assumptions have been tested in studies in districts in Kenya where community surveys of actual patient use were conducted. Some revealed that where pairs of adjacent government health facilities were of different types, the higher order facility attracted more patients and the boundary between the facilities was displaced in its favor. An approach for measuring the overlap area between adjacent health facilities was developed. The transport network, elevation and other natural barriers were used to define more accurately real distances that people travelled.

Some women, especially those living in communities where there is minimal access to health care, the location of the service facility is an important determinant of participation. Geographic inaccessibility remains a central barrier in most resource- poor settings, as a significant portion of the population at risk for cervical cancer may be located in areas where little or no coverage currently exists. In Peru, ACCP researchers have found that screening rates were much lower in districts where services were distant or difficult to access. Conversely, regional coverage rates were much higher where static services were more accessible to major population centers or where mobile campaigns brought services to women. In Nayarit, Mexico, and in Western Kenya, women reported that transportation costs and distance played a significant role in screening participation and loss to follow-up (PATH, 2002). In these rural areas, there is no public transport and women must pay for private transportation. Kenyan studies also show that many women must travel anywhere from two to eight hours, at an average cost of a day’s agricultural wage (Abwao et al., 2001).
2.2.4 Education level and demand for cervical cancer screening services

Survey evidence sheds some light on why the less educated seem to be less aware of the risks they face; this evidence suggests that the less educated are generally more skeptical about science-based medicine and more likely to believe in non-scientific explanations for why individuals develop cervical cancer. It is plausible that skepticism or downright hostility towards science based medicine contributes to less efficient health care decision making among the less educated.

Poor education is associated with low screening attendance in Kenya. About 30% of Kenyan women are illiterate a factor that contributes to the high cervical cancer rates in the country (UNDP, 2009). A study in rural Kenya of 160 women showed that only 40% of these women had heard of cervical cancer, but could not explain its impact or importance (Gatune, 2005).

Another study at the Kenyatta national hospital revealed that 29% of women with cervical cancer were illiterate and only 51% of them knew about the disease. Furthermore, only 32% were aware of the Pap smear test (Gichangi et al., 2003). Misconceptions that the screening test was a HIV test, the fear of cancer diagnosis, the fear of the screening procedure and the embarrassment associated with pelvic examination have been cited as reasons why Kenyan women have avoided going for cervical cancer screening (PATH, 2004).

Educating patients about the purpose and importance of screening cervical cancer may help to alleviate potential stigma and fear associated with these screening methods. Health literacy is the ability to obtain, process, and understand basic health information and services to make appropriate health decisions and is essential to promote healthy people and communities. Health literacy is lowest among the more vulnerable members of our communities—those with lower education levels, racial/ethnic minorities, the uninsured and publicly insured, and the elderly (U.S. Department of Health and Human Services, 2008). Low health literacy adversely impacts cancer incidence, mortality, and quality of life. Many factors influence health literacy, including reading level, numeracy level, language barriers and cultural appropriateness. People impacted by low health literacy may struggle to understand disease, prevention, and treatment.
Goldman and Smith (2002) represent a particularly instructive example. They examine the role of patient self-management in generating differences in health outcomes by education. Using data from HIV and diabetes patients, they find that educated patients are indeed better at adhering to complex treatment regimens and that this has positive effects of the health of these patients. This finding represents direct evidence for productive efficiency if self-management does not represent an input into the production of health in the traditional sense that is if it does not impose costs. Then it is clear we observe higher adherence among the educated because they are willing to expend more resources on health or because they are better at producing health.

Lichtenberg and Lleras-Muney (2002) follow a different approach. They argue that the educated are better placed to benefit from technological progress in the medical sciences. In support, they show that the educated are disproportionately more likely to use newly approved drugs, even controlling for income and insurance status. This finding might explain the recent widening in the education gradient in mortality. Survey evidence in favor of the allocative efficiency hypothesis, showing that the educated are better informed about health risks associated with smoking, drinking, and lack of exercise. Knowledge about these risks correlates with healthier choices, thus confirming the allocative efficiency hypothesis. This is related in the examination of how individual knowledge of personal cervical cancer risks correlates with cancer screening behavior and find support from a variety of different screening behaviors.

2.3 Theoretical Framework

This study adopted the socio-ecological model. The social ecological perspective on health emphasizes the contextualized nature of health and health behaviors in terms of how individuals, their health, and their surrounding physical and social environments interact at multiple levels of a health problem and are interdependent. This type of multi-systems framework is grounded in the work of human ecology and development pioneers such as Urie Brofenbrenner. The ecological perspective has essentially two key propositions being, 1. Behavior both shapes and is shaped by multiple levels of influence and 2. Individual behavior affects and is affected by the surrounding social environment.
Community is the context in which health behaviors take place and one of the primary settings for health promotion resources, making it a strategic entry point for collaboration and intervention. Research supports the notion that health promotion interventions should also be multi-domain, multidisciplinary, and be grounded in a social ecological framework in order to have the maximum reach, impact, and potential for sustainability (Gottlieb, 2009).

SEF overcomes the limitations of other health behavior models by incorporating a focus on individual-level health behavior change with an understanding of the reciprocal relationship between personal choices, biology, and determinants of health and health behaviors at the level of social networks, communities, and policies that impact health. SEF proposes that social and environmental interactions can combine to affect health or each level of influence can be a factor in supporting or inhibiting health actions and outcomes (Stokols, 1995).

Those multiple levels of influence which impact health related behaviors and conditions are outlined as: 1. Intrapersonal factors such as individual attitudes, behaviors, knowledge, and skills; 2. Interpersonal processes such as social networks made of family, friends, or colleagues that provide support; 3. Institutional factors such as formal or informal organizations which may have rules or expectations which impact health behaviors; 4. Community factors such as informal or formal networks and norms among individuals, families, or groups/organizations; 5. Public policy such as local, state, and federal laws or regulations which promote or inhibit certain health practices which impact disease prevention, control, or management. Applying these ecological levels of influence to an analysis of rural Kenyan women’s utilization of cervical cancer health can provoke further inquiry into why and where these disparities occur and which levels of influence should be targeted for intervention. These factors are illustrated.
Table 2.1 Social Ecological Theoretical Framework: Levels of Influence

<table>
<thead>
<tr>
<th>Levels of Influence</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intrapersonal</td>
<td>Personal attributes such as attitudes, beliefs, and knowledge that shape health behaviors.</td>
</tr>
<tr>
<td>Interpersonal</td>
<td>Relationships with family, friends, colleagues, and others which contribute social support and help to define identity.</td>
</tr>
<tr>
<td>Organizational</td>
<td>Groups to which one belongs and/or informal social institutions and processes which influence health behaviors.</td>
</tr>
<tr>
<td>Community</td>
<td>Formal or informal systems with corresponding social norms among people, groups, and organizations.</td>
</tr>
<tr>
<td>Public Policy</td>
<td>Laws and practices at the local, state, and national levels that promote or regulate health behavior.</td>
</tr>
</tbody>
</table>

(Source: Robinson, 2008, p. 398)
2.4 Conceptual Framework

This study was centered on this perceived conceptual framework on the relationship between the independent and dependent variables on how they influence demand for cervical cancer screening services in health facilities in Kenya.

Figure 1 Conceptual Framework on factors influencing demand for cervical cancer screening services
The perceived conceptual framework covered the factors influencing demand for cervical cancer screening services encompasses variables and their patterns of influence on each other and eventually how they affect women’s demand for these services from health facilities.

Awareness levels and demand for cervical cancer screening services.
While knowledge of what care is available and its potential benefits greatly influence demand for health care, knowledge of cervical cancer screening is related to health literacy; which is the ability to obtain, process, and understand basic health information and services to make appropriate health decisions. Health literacy is lowest among the more vulnerable members of our communities—racial/ethnic minorities, living in rural areas, and the elderly. People impacted by low health literacy may struggle to understand disease, prevention, and treatment.

Social support and demand for cervical cancer screening services
Research to date suggests that women are more likely to be screened (and treated if needed) when services are offered through face-to-face visits by health workers. The client-provider relationship greatly affects client satisfaction. For example, the conditions under which counseling takes place, how effectively and respectfully the provider communicates information to the woman, the woman’s ability to ask questions, the process of informed consent, and the respect for privacy and confidentiality all are important factors that influence a woman’s experience with care. Females with partners will be more likely to participate in prevention activities, because partners will take care for each other and women will show risk-adverse behavior.

Women’s level of income and demand for cervical cancer screening services
Household income could have possible different effects on screening uptake. It is predicted to have a positive impact on screening uptake, because higher income leads to an increase in demand for time in perfect health. Employment status has been shown to be correlated with the uptake of cervical screening and employed women have a higher uptake of cervical cancer screening. They can exist for preventative care for individuals living in urban or rural areas because access to health care and time cost as a non-monetary component play an important role for the uptake of medical services.
Education level and demand for cervical cancer screening services

Education increases the demand for preventative care for several reasons, because better educated individuals have a higher efficiency in the production of health. There are possible further transmission channels for effect of education on uptake such as increased self-efficacy, confidence, motivation, patience and social inclusion. Low education levels, particularly in rural areas, may influence the ability of individuals to judge when care should be sought. Another key factor in a woman’s decision to participate in cervical cancer prevention services is her husband’s positive emotional and, if needed, financial support.

These factors are interrelated and compound one another on their influence on health seeking behavior. Therefore, this perceived conceptual framework for the demand for cervical cancer screening care is based on a human capital approach. It is also supported by previous research which has investigated determinants which are not only affected by direct and indirect costs of the screening exams, but also by a wide range of individual, family characteristics and other conditions such as attitudes, beliefs, barriers and facilitating conditions.

### 2.5 Knowledge gaps

These and other similar studies provide evidence that the correlates of cervical cancer screening as a secondary cancer prevention behavior are multi-domain. More research is needed to show the barriers and facilitators of cancer screening for underserved high risk populations like rural Kenyan women. This study intends to address gaps in the literature which do not account for how cervical cancer related health behaviors such as awareness, social support, women’s level of income, women’s level of education influenced by factors in the social environment.

#### Table 2.2 Knowledge Gaps

<table>
<thead>
<tr>
<th>Variable</th>
<th>Literature Source</th>
<th>Findings</th>
<th>Knowledge gap</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to information</td>
<td>Maranga IO, Hampson L, Oliver AW, Gamal A, Gichangi P, (2013) <em>Springer Science and Business Media, Advances in Social Work</em></td>
<td>Study was on patients hospitalized for invasive cervical cancer.</td>
<td>The study did not focus on prevention of cervical cancer.</td>
</tr>
</tbody>
</table>
| Support from family/friends | Abwao SP, Greene H, Sanghvi TV and Winkler JL. Summary of proceedings of regional meeting held in Nairobi, Kenya, 29th March to 1st April 1998. 

*Prevention and control of cervical cancer in Eastern and Southern Africa Region 2005.* | Focused on married women and women’s support from health care workers | The findings are on married women and support from health professionals |
<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monthly income</td>
<td>ACCP, (2011) Recent evidence on cervical cancer screening in Low Resource Settings.</td>
<td>Focused on rural areas where there is no public transport and women must pay for private transportation</td>
<td>There could be areas with reliable transport systems.</td>
</tr>
<tr>
<td>Education</td>
<td>PATH (2004); Western Kenya Cervical Cancer Prevention Project</td>
<td>Study showed that women had heard of cervical cancer, but could not explain its impact or importance</td>
<td>This study will find out the importance of cervical cancer screening</td>
</tr>
<tr>
<td>---</td>
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</tr>
</tbody>
</table>

### 2.6 Summary of the reviewed literature

Literature supports respective connections between many health behaviors and stimuli in the social environment. In light of this increasing body of knowledge on how social and ecological conditions affect health and health behaviors, more studies are needed to understand how such interactions operate for medically and socially underserved populations like rural Kenyan women. This study was hoped to be significant to both health-related social work and public health research and practice as it has the potential to advance the understanding of how social contextual factors in the daily lives of rural women facilitate their ability to take actions known to prevent cervical cancer.
CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter consists of the research methodology including data collection and the procedures under the following subheadings: research design, the target population, sample and sampling procedures, the research instruments, validity and reliability of the instruments, data collection procedures and data analysis.

3.2 Research Design

Descriptive survey design was used in this study as it enables a researcher to gather data from a relatively large number of subjects at a particular time. This study used a survey design to systematically gather information that describes the characteristics of respondents for the purpose of building generalizations about the population they represent. The factors influencing demand for cervical cancer screening services was a cross-sectional study and used a quantitative research approach.

3.3 Target Population

This was a household study targeting women aged between 25 - 55 years since this age group is mostly affected by cervical cancer. Yatta sub-county was selected because it represents a typical rural area in Kenya; and current studies show that demand for cervical cancer screening services are quite low in rural areas. Women will be randomly sampled to represent a similar population in areas in the country. There are 46,405 women in the 21,420 households in Yatta division according to Kenya National Bureau of Statistics (2009).

3.4 Sample Size

The sample size was obtained by using the Krejcie and Morgan Table (1970), as it’s flexible and easy to manipulate bearing in mind that the minimum sample size required for social studies is a minimum of 384 respondents, which is large enough to serve as an adequate representation of the population about which the research findings will be generalized; and
small enough to be selected economically. The sample size for this study was 374 respondents.

3.5 Sampling Procedure

For administrative convenience and reduction of costs such as transport, interviewer time and supervision, a random selection was made from 2-stage cluster sampling. Yatta sub-county is made up of 4 divisions and clusters made up of sub-locations from each division was randomly picked using the probability proportional to size (PPS) sampling. Mavoloni, Matuu, Kakumini and Kambi ya Ndeke clusters (sub-locations); with a total population of 14,745 women and 7,484 households participated in the study. Further, 2 sub-clusters (villages) from each these clusters and a total of 8 sub-clusters were selected Microsoft excel table of random numbers and a household listing was drawn on contacting the local administration on the ground (since these are currently unavailable). Microsoft excel table of random numbers was used to select households and Kish grid was used to pick 2 respondents from each the 4 sub-clusters to make a total of 374 respondents.

3.6 Research Instruments

Quantitative data on the factors influencing demand for cervical cancer screening services was collected using a questionnaire with close-ended responses in order to allow for descriptive analysis from the responses. The choice for the questionnaire as a data collection tool is founded on the fact that it suitable for collecting a large amount of data from respondents within a short period of time.

It contained three major sections: section one contained questions on the respondents’ socio-demographic characteristics; section two contained questions based on the four themes derived from the study objectives; namely: 1) Awareness of cervical cancer screening services, 2) Social support, 3) women’s level of income and 4) women’s level of education. Lastly, section three had the factors influencing demand for cervical cancer screening services in health facilities.

For the closed-ended questions, a Five-point Likert Scale was used which included: (1) Strongly agree, (2) Agree, (3) Uncertain (4) Disagree and (5) Strongly disagree. The strongly agreed responses were scored at 5 for direct positive high scores while those of strongly
disagree were scored at 1 for direct low responses. The questionnaires facilitated the evaluation of factors influencing demand for cervical cancer screening services among women aged between 25 to 55 years. The procedure for data collection ensured compliance to the rules and regulations as stated by the National Commission for Science, Technology and Innovation. This permit was further presented at the sub-county offices for permission to collect data.

3.6.1 Piloting the Instruments

Piloting ensured that the questionnaire was free from ambiguity and that the data generated was meaningfully analyzed in relation to the stated research questions. This was done by administering 37 (10% of the sample size) similar age category as the actual respondents in Tala division; one of Nairobi’s neighboring districts which contain similar characteristics as the study area. After piloting, adjustments were made in after addressing areas of concern. Orodho (2004) states that piloting helps to establish whether the questions measure what they are supposed to measure, the respondents interpret all questions in the same manner, the wording is clear and also helps eliminate potential research bias.

3.6.2 Validity of the Questionnaire

Content validity of the instruments was used to measure the degree to which the items will represent specific areas covered by the study. Validity was ascertained by checking that the questions measure what they are supposed to measure such as the: clarity of wording to make sure that respondents interpreted all questions a similar way; eliminating areas likely to cause confusion and ambiguity. To enhance the questionnaire validity, the questionnaire was appraised by the supervisor to evaluate the applicability and appropriateness of the content and adequacy of the instruments from a research perspective. The corrections on the identified questions were incorporated in the instrument and a field test was conducted with a pilot randomly selected households that are not part of study to ensure content of the research instrument. Then the questionnaires will be dispatched to the field and administered by experienced research assistants.
During field work, the following measures were followed to ensure validity: where appropriate, the interviewers spoke the local language to enhance communication with the respondents, checking of one informant’s descriptions of something against another’s description of the same thing, in addition to the answers received from some of the questions, answers were written down and looked at later to help reduce distortions, recording personal thoughts while conducting observations and interviews. Responses that seemed unusual or incorrect were noted and checked later against other remarks or observations.

3.6.3 Reliability of the Instruments

Reliability refers to extend to which instruments yield measurements that are consistent each time it is repeated to same people. According to Gay, Mills and Airasian (2006), internal consistency reliability is the extent to which items in a single test are consistent among themselves and the test as a whole. The reliability of the questionnaires was tested using split-half method. Cronbach’s Alpha Coefficient of 0.81 obtained was which is in line with Mugenda and Mugenda (1999) who recommend a threshold level of 0.70 for an acceptable reliability coefficient.

3.7 Data Collection Procedure

To generate data for this research study, the researcher obtained a letter of introduction from the University of Nairobi which was used to obtain a research permit from National Commission for Science, Technology and Innovation (NACOSTI). Copies of these two documents were presented at the Yatta sub-county offices as a requirement before the commencement of field work. The researcher, with the help of trained research assistants then visited the local administration offices to make appointments then later visited the sampled households to establish rapport. Data was collected from respondents on the dates agreed upon obtaining informed consent. Instructions were carefully explained to the respondents prior to the interviews after assuring them that the information given was confidential and be used only for the purposes of the study. Adequate time was accorded each respondent to obtain appropriate answers to the questions after which the completed questionnaires were checked for completeness and accuracy. The data collection
exercise took approximately 5 days after which the data was be entered into a Microsoft Excel database and cleaned to remove errors.

3.8 Data Analysis Technique

Descriptive data collected from this study was entered into a Microsoft Excel database and cleaned to ensure completeness and accuracy. Statistical Package for Social Sciences (SPSS) Version 17.0 was used to analyze the data and presented using descriptive statistics like frequency distributions, percentages and averages. This statistics measures were used to investigate whether distribution of categorical variables differed from one another (that is between the respondents screened for cervical cancer versus those who have not). Frequency distributions were determined for background data on age, marital status, women’s level of income, women’s level of education and demand for cervical cancer screening services. Percentages and correlations were also calculated for the various indicators. Chi-square statistic ($\chi^2$) was calculated for the specified cross-tabulations, where appropriate, with significance declared at a p-value = <0.05.

3.9 Ethical Issues

Obtaining a research permit from the National Commission for Science, Technology and Innovation (NACOSTI) to carry out this research made it authentic. The letter of transmittal was given to the respondents, seeking to explain what the study was about; assuring the respondents that the research was purely for academic purposes. Consent was sought before the exercise began and the study observed confidentiality on the information shared by the respondents (i.e. names were not be written on the questionnaires) and the information gathered was only used for the purposes of this study. The personal right of choice to participation in this study was ensured by informing the respondents of their voluntary participation and to withdrawal from the study anytime they wished. Trained research assistants were used to conduct this study, ensuring high levels of professionalism and humility especially on respondents of lower academic and income levels, and those who wished to discontinue their participation in the study. The findings will be shared to any respondent who wishes to know the outcome of the research.
3.10 Operationalization of Variables

This is a table that in more explicit ways shows the variables and their operational indicators. Operationalization of the study variables was according to the objectives of the study: to establish how the level of awareness influences demand for cervical cancer screening services, to assess the extent to which social factors influence demand for cervical cancer screening services, to establish the extent to which economic factors influence demand for cervical cancer screening services, to establish how the health service factors influence demand for cervical cancer screening services and to establish how accessibility of health facilities influence demand for cervical cancer screening services in Yatta sub-county. These study variables are as shown in this table.
Table 3.1 Operationalization of variables

<table>
<thead>
<tr>
<th>Objectives</th>
<th>Variable</th>
<th>Indicators</th>
<th>Measurement</th>
<th>Scale</th>
<th>Data collection Method</th>
<th>Data Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To establish the influence of awareness on demand for cervical cancer screening services</td>
<td><strong>Independent variable</strong>&lt;br&gt;-Awareness</td>
<td>Number of health talks attended .Information from community health care workers and media</td>
<td>Health talks, community mobilization and media campaigns</td>
<td>Nominal</td>
<td>Questionnaire</td>
<td>Logistic regression, frequencies and percentage</td>
</tr>
<tr>
<td>2. To investigate the influence of social support on demand for cervical cancer screening services</td>
<td><strong>Independent variable</strong>&lt;br&gt;-Social support</td>
<td>Marital status .Support from family and friends</td>
<td>Marital status and support</td>
<td>Ordinal</td>
<td>Questionnaire</td>
<td>Logistic regression, frequencies and percentage</td>
</tr>
<tr>
<td>3. To evaluate the influence of women’s income levels on demand for cervical cancer screening services</td>
<td><strong>Independent variable</strong>&lt;br&gt;-Income</td>
<td>Amount spent on healthcare .Monthly income .Cost of the procedure .Travelling costs</td>
<td>Cost of healthcare</td>
<td>Ordinal</td>
<td>Questionnaire</td>
<td>Logistic regression, frequencies and percentage</td>
</tr>
</tbody>
</table>
4. To assess the extent to which women’s education level influences demand for cervical cancer screening services

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Highest academic qualification</th>
<th>Academic qualification</th>
<th>Ordinal</th>
<th>Questionnaire</th>
<th>Logistic regression, frequencies and percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Demand for cervical cancer screening services

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Number of clients screened for cervical cancer</th>
<th>Number of clients screened and importance of cervical cancer</th>
<th>Ratio</th>
<th>Questionnaire</th>
<th>Logistic regression, frequencies and percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demand for cervical screening services</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CHAPTER FOUR

DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This chapter consists of data analysis, presentation and analysis. In research, data analysis refers to categorizing, ordering, manipulating, and summarizing of data to obtain answers to research questions based on these themes: demographic characteristics and; awareness levels of cervical cancer screening, social support, women’s income and education levels, and demand for cervical cancer screening services.

4.2 Questionnaire return rate

The number of questionnaires issued during the study was 374; where each of the 374 respondents was assigned one as shown in Table 4.1.

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Returned</td>
<td>347</td>
<td>93</td>
</tr>
<tr>
<td>Not returned</td>
<td>27</td>
<td>7</td>
</tr>
<tr>
<td>Total</td>
<td>374</td>
<td>100%</td>
</tr>
</tbody>
</table>

This table shows a total of 347 (93%) of the respondents responded to the questionnaires while only 27 (7%) did not respond. According to Mugenda and Mugenda (1999), a response rate of 70% is scientifically acceptable. Since this was a health-related survey involving questions of a personal nature, the 27 questionnaires not returned were those from respondents who opted to not to participate in the study.

4.3 Demographic characteristics of the respondents

The study on the factors influencing demand for cervical cancer screening services in health facilities looked at the female respondent’s characteristics of age group, marital status,
income and education levels to assess whether these had influence on the demand for the stated health services. These themes were discussed in the following sections.

4.3.1 Distribution of women by age

The study was interested in finding out whether age has any influence in demand for the screening services. The respondents were asked their age and were categorized as shown in Table 4.2.

Table 3.2 Distribution of women by age

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 to 35 years</td>
<td>159</td>
<td>46</td>
</tr>
<tr>
<td>36 to 45 years</td>
<td>76</td>
<td>22</td>
</tr>
<tr>
<td>46 to 55 years</td>
<td>112</td>
<td>32</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>347</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

These results show that 46% of the respondents belonged to the 25-35 years category, followed by 22% from 46-55 years, and the last was 22% from the 36-45 years category. The high response rate by 159 (46%) respondents represented by the lower age-group was attributed to the use of the Kish grid (Appendix V) which gave them a higher chance of being interviewed since younger people are more difficult to find at home, so the grid was effective by giving them higher chance of being interviewed.
4.3.2 Distribution of women by marital status

Marital status of the women was sought as it was important form of social support, and to compare who among the subsets was involved in the testing services as shown in table 4.3.

Table 4.3 Distribution of women by marital status

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>201</td>
<td>58</td>
</tr>
<tr>
<td>Divorced</td>
<td>50</td>
<td>14</td>
</tr>
<tr>
<td>Widowed</td>
<td>23</td>
<td>7</td>
</tr>
<tr>
<td>Never married</td>
<td>49</td>
<td>14</td>
</tr>
<tr>
<td>Separated</td>
<td>24</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>347</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The majority of women were married at 201 (58%), followed by the divorced at 50 (14%), widowed at 23 (7%), never married at 49 (14%) and lastly the separated 24 (7%).

4.3.3 Distribution of women by level of education

The women were asked their highest education level attained. This was important as the level of education determines if information sharing can be done with ease. Table 4.4 shows the results.

Table 4.4 Distribution of women by level of education

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>Primary</td>
<td>224</td>
<td>65</td>
</tr>
<tr>
<td>Secondary</td>
<td>63</td>
<td>18</td>
</tr>
<tr>
<td>College/university</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>347</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The study findings on the level of education show that majority of the respondents were primary school 35 (65%), secondary school 63 (18%), none- with no education at all 36 (10%), while had the least representation at college/university 25 (7%).
4.3.4 Income level of the respondents

Respondents were asked of their level of income, in form of employment was as represented in Table 4.5.

Table 6.5 Distribution of women by level of income (employment)

<table>
<thead>
<tr>
<th>Category</th>
<th>Screened (N=37)</th>
<th>Not screened (N=310)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed full-time</td>
<td>11</td>
<td>65</td>
<td>17</td>
</tr>
<tr>
<td>Employed part-time</td>
<td>5</td>
<td>43</td>
<td>12</td>
</tr>
<tr>
<td>Self-employed</td>
<td>10</td>
<td>86</td>
<td>12</td>
</tr>
<tr>
<td>Still studying</td>
<td>9</td>
<td>14</td>
<td>64</td>
</tr>
<tr>
<td>Retired</td>
<td>1</td>
<td>45</td>
<td>2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1</td>
<td>57</td>
<td>2</td>
</tr>
</tbody>
</table>

The study sought to find out employment as a source of income of the respondents. Table 4.5 shows that the self-employed respondents were the majority 96 (28%), followed by employed fulltime 76 (22%), employed part time 48 (14%), retired 46 (13%), unemployed 58 (17%). The retired were 46 (13%), while those still studying were represented the least 23 (7%).

4.4 Awareness level and demand for cervical cancer screening services

Knowledge of what care is available and its potential benefits greatly influences demand for health care and awareness of cervical cancer screening services is key to utilization of these services by women. Table 4.6 shows the details.

Table 7.6 Awareness and demand for cervical cancer screening services

<table>
<thead>
<tr>
<th>Category</th>
<th>Awareness (N=347)</th>
<th>Screening (N=37)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency</td>
<td>Frequency</td>
</tr>
<tr>
<td>Yes</td>
<td>55</td>
<td>7</td>
</tr>
<tr>
<td>No</td>
<td>192</td>
<td>19</td>
</tr>
<tr>
<td>Unsure</td>
<td>100</td>
<td>11</td>
</tr>
</tbody>
</table>
Table 4.6 shows that 55 of the respondents had heard of cervical cancer screening while only 7 of them were screened, indicating that 13% of those who heard of cervical cancer screening took up the test. Further, 192 were unaware but 19 of them took up the test, at the rate 10%. Lastly, those unsure 100, 11 of them had been screened at a rate of 11%. The sources of information on cervical cancer screening were: community health worker being the most popular (48%), media (35%), friends/family members (10%), nurses (5%) and doctors (3%).

### 4.5 Social support and demand for cervical cancer screening services

Social support from male partners, friends and relatives has been proven to increase demand in seeking for health services. Females with partners are said to be more likely to participate in prevention activities like cervical cancer screening, and social networks act as trusted informal sources of health information and encouragement to pursue healthy lifestyles. Table 4.7 gives the details.

#### Table 8.7 Cervical cancer screening by marital status

<table>
<thead>
<tr>
<th>Category</th>
<th>Screened N=37</th>
<th>Not screened N=310</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Married</td>
<td>24</td>
<td>177</td>
<td>14</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>47</td>
<td>6</td>
</tr>
<tr>
<td>Widowed</td>
<td>2</td>
<td>21</td>
<td>10</td>
</tr>
<tr>
<td>Never-married</td>
<td>6</td>
<td>43</td>
<td>14</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>22</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 4.7 shows out of the 177 married women, only 24 (14%) of them took the screening test, followed by the never-married 43, 6 having been screened (14%), from the 21 widows, 2 (10%) had been screened, out the 22 separated, 2 (9%) were screened and lastly, the 47 divorced 3 (6%) were screened.

Social support from male partners, friends and relatives has been proven to be key in seeking for health services. Females with partners are said to be more likely to participate in prevention activities, and social networks act as a trusted informal sources of health information. Table 4.8 gives the details.
Table 9.8 Cervical cancer screening source of information

<table>
<thead>
<tr>
<th>Category</th>
<th>Awareness (N=347)</th>
<th>Screening (N=310)</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctor</td>
<td>1</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>Nurse</td>
<td>1</td>
<td>17</td>
<td>6</td>
</tr>
<tr>
<td>Community health worker</td>
<td>21</td>
<td>144</td>
<td>15</td>
</tr>
<tr>
<td>Media</td>
<td>9</td>
<td>111</td>
<td>8</td>
</tr>
<tr>
<td>Friend/Family Member</td>
<td>5</td>
<td>30</td>
<td>17</td>
</tr>
</tbody>
</table>

Table 4.8 indicates that community health workers were the highest source of information and the most influential source 21 (15%), followed by media 9(8%), then family and friends 5 (17%), then doctors and nurses tying at 1, and (13% and 6%) respectively.

4.6 Women’s income level and demand for cervical cancer screening services

Income is said to have possible effects on screening uptake. It is predicted to have a positive impact on screening uptake, because higher income leads to an increase in demand for time in health. Employment status has been shown to be correlated with the demand for cervical screening and employed women have a higher uptake. Table 4.9 shows the details.

Table 10.9 Cervical cancer screening by level of income

<table>
<thead>
<tr>
<th>Category</th>
<th>Screened N=37</th>
<th>Not screened N=310</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below 5,000</td>
<td>19</td>
<td>120</td>
<td>16</td>
</tr>
<tr>
<td>Between 5,000 and 20,000</td>
<td>7</td>
<td>111</td>
<td>6</td>
</tr>
<tr>
<td>Above 20,000</td>
<td>11</td>
<td>79</td>
<td>14</td>
</tr>
</tbody>
</table>

Table 4.9 shows that 19 (51%) of those earning the least amount compared to the other groups constitutes the highest percentage of those screened, followed by 11 (30%) from the highest earning group.
The cost of screening and other health services is said to be very key to access to these services, as indicated in Table 4.10.

**Table 11.10 Cost of screening procedure**

<table>
<thead>
<tr>
<th>Category</th>
<th>Screened N=37</th>
<th>Not screened N=310</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Expensive</td>
<td>5</td>
<td>251</td>
<td>2</td>
</tr>
<tr>
<td>Expensive</td>
<td>2</td>
<td>58</td>
<td>3</td>
</tr>
<tr>
<td>Fair</td>
<td>17</td>
<td>1</td>
<td>90</td>
</tr>
<tr>
<td>Very cheap</td>
<td>13</td>
<td>0</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 4.10 indicates that majority of the respondents 251 reported that the cost of screening was very high, resulting to only 5 (2%) being screened. 3% of the screened reported the cost to be high. On the other hand, 90% of those reporting the cost to be fair were screened followed by those reporting it as very cheap.

Geographic factors play an important role in access to and use of health services. The major limitation in describing physical access to health services is the assumptions that people use the nearest health services. Table 4.11 shows the details.

**Table 12.11 Distance to the nearest health facility**

<table>
<thead>
<tr>
<th>Category</th>
<th>Screened N=37</th>
<th>Not screened N=310</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 1 Km</td>
<td>6</td>
<td>71</td>
<td>8</td>
</tr>
<tr>
<td>5 Km</td>
<td>2</td>
<td>41</td>
<td>5</td>
</tr>
<tr>
<td>5 to 10km</td>
<td>24</td>
<td>192</td>
<td>13</td>
</tr>
<tr>
<td>More than 10 km</td>
<td>5</td>
<td>6</td>
<td>83</td>
</tr>
</tbody>
</table>

Table 4.11 showed that most of the women screened 24 (13%) are those accessing facilities between 5-10 km away. The women accessing facilities more than 10 km away (83%) had been screened while those accessing facilities less than 5km had been screened at 5% and 8% respectively.
4.7 Women’s education level and demand for cervical cancer screening services

Education is said to enhance the demand for preventative health services by raising awareness of the importance of undertaking regular health check-ups and may also improve the ways in which individuals understand information regarding medical tests, communication with health practitioners, and interpreting results. Table 4.12 gives the details.

**Table 13.12 Cervical cancer screening by level of education**

<table>
<thead>
<tr>
<th>Category</th>
<th>Screened N=37</th>
<th>Not screened N=310</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>2</td>
<td>33</td>
<td>6</td>
</tr>
<tr>
<td>Primary</td>
<td>31</td>
<td>193</td>
<td>16</td>
</tr>
<tr>
<td>Secondary</td>
<td>3</td>
<td>60</td>
<td>5</td>
</tr>
<tr>
<td>College/university</td>
<td>1</td>
<td>24</td>
<td>4</td>
</tr>
</tbody>
</table>

Table 4.12 shows the majority of the women 31 (84%) screened had attained at primary school education, followed by secondary 3 (8%), those with none 2(5%) and lastly college/university 1(3%).

4.8 Demand for cervical cancer screening services

Demand for cervical cancer screening services is the willingness and/or ability to seek, use and pay for cervical cancer screening services. Table 4.13 shows the number of utilization of the services.

**Table 14.13 Number of women screened for cervical cancer**

<table>
<thead>
<tr>
<th>Screening</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>37</td>
<td>11</td>
</tr>
<tr>
<td>No</td>
<td>305</td>
<td>88</td>
</tr>
<tr>
<td>Unsure</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>347</td>
<td>100</td>
</tr>
</tbody>
</table>

This table clearly shows that demand for cervical cancer screening services was very low; only 37 (11%) with the majority 305 (88%) having not been screened for cervical cancer, while 5 (1%) were not sure of having been screened.
Table 15.14 Logistic Regression Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th>Category</th>
<th>Frequency (Percentage)</th>
<th>Unadjusted odds ratio (95% confidence interval)</th>
<th>p_value</th>
<th>G_pvalue</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Awareness</strong></td>
<td>Attended health talks</td>
<td>14 (18.7)</td>
<td>2.48(1.21 - 5.11)</td>
<td>0.0134</td>
<td>0.0134</td>
</tr>
<tr>
<td></td>
<td>Not attended health talks</td>
<td>23 (8.5)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current marital status</strong></td>
<td>Married</td>
<td>24 (9.2)</td>
<td>1.11(0.25 - 5.03)</td>
<td>0.8884</td>
<td>0.2757</td>
</tr>
<tr>
<td></td>
<td>Divorced</td>
<td>3 (15.8)</td>
<td>2.06(0.31 - 13.81)</td>
<td>0.4556</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Widowed</td>
<td>2 (11.8)</td>
<td>1.47(0.19 - 11.59)</td>
<td>0.7165</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Never-Married</td>
<td>6 (23.1)</td>
<td>3.30(0.60 - 18.27)</td>
<td>0.1713</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Separated</td>
<td>2 (8.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td>Below 5,000</td>
<td>19 (14.2)</td>
<td>1.22(0.55 - 2.69)</td>
<td>0.6289</td>
<td>0.0976</td>
</tr>
<tr>
<td></td>
<td>Between 5,000 and 20,000</td>
<td>7 (5.8)</td>
<td>0.45(0.17 - 1.22)</td>
<td>0.1159</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Above 20,000</td>
<td>11 (12)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cost of screening</strong></td>
<td>Very Expensive</td>
<td>5 (2)</td>
<td>1.73(0.33 - 9.15)</td>
<td>0.5182</td>
<td>0.0000</td>
</tr>
<tr>
<td></td>
<td>Expensive</td>
<td>2 (3.3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fair OR Very Cheap</td>
<td>30 (96.8)</td>
<td>1506.0(170.21 - 13325)</td>
<td>&lt;.0001</td>
<td></td>
</tr>
<tr>
<td><strong>Distance to health facility</strong></td>
<td>Less than 1 Km</td>
<td>6 (8.5)</td>
<td>0.54(0.10 - 2.82)</td>
<td>0.4661</td>
<td>0.4748</td>
</tr>
<tr>
<td></td>
<td>5 Km</td>
<td>2 (4.8)</td>
<td>1.55(0.60 - 3.96)</td>
<td>0.3622</td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 to 10km</td>
<td>24 (12.5)</td>
<td>1.46(0.42 - 5.13)</td>
<td>0.5512</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than 10 km</td>
<td>5 (11.9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Education Level</strong></td>
<td>None</td>
<td>2 (5.7)</td>
<td>2.65(0.61 - 11.61)</td>
<td>0.1958</td>
<td>0.1050</td>
</tr>
<tr>
<td></td>
<td>Primary</td>
<td>31 (13.8)</td>
<td>0.83(0.13 - 5.19)</td>
<td>0.8375</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary</td>
<td>3 (4.8)</td>
<td>0.69(0.06 - 8.03)</td>
<td>0.7651</td>
<td></td>
</tr>
<tr>
<td></td>
<td>College/University</td>
<td>1 (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.14 – Bivariate analysis of factors associated with cervical cancer screening

Table 4.14 above indicates that there was a highly significant relationship (p value = 0.001 < 0.0134) between awareness and demand for cervical cancer screening in health facilities in Kenya. Further, those aware of cervical cancer are 3 times more likely to be screened, compared to the unaware. There is no relationship between marital status and demand for cervical cancer screening in health facilities in Kenya (p value = 0.2757 > 0.05). There was a highly significant relationship (p value = 0.001 < 0.000) between cost of screening demand for cervical cancer screening in health facilities in Kenya. Those living between 5 and 10 km from health facilities were two times more likely to be screened; compared to those within
5km. Lastly, there was no relationship (p value = 0.105 > 0.05) between women’s level of education and demand for cervical cancer screening in health facilities in Kenya. This objective was partially supported because the respondents with primary school education were two times more likely to be screened compared to those without education. This means we accept the 1st research question, reject the 2nd, while the 3rd and 4th research questions were partially supported.
CHAPTER FIVE
SUMMARY OF FINDINGS, DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the summary of findings of the research, discusses the results, draws conclusions and makes recommendations for demand for cervical cancer screening in health facilities in Kenya.

5.2 Summary of findings

Significant findings that arose from the study on factors that influence demand for cervical cancer screening in health facilities were; on the respondents’ demographic factors, the women aged between 25-35 years, 95% (35 out of 37) had been screened while those who had attained primary school education had 84% (31 of the 37) of them screened and on marital status, 65% (24 out 37) of the screened were married women.

On the awareness of cervical cancer screening services, the findings from this study showed that out the 347 respondents only 37 (11%) were screened while the majority at 305 (88%) were not. Further, 43 respondents (12%) aware of cervical cancer screening had attended health talks by community health workers as the major source of information. Doctors and nurses are not using their vantage positions to provide necessary information on cervical cancer, and this can be associated with the low screening rates from the population at 12%.

On social supports’ influence demand for cervical cancer screening, majority of the respondents 201 (58%) were married and 24 (65%) had been screened for cervical cancer; but they reported to get more support from friends and relatives besides their spouses while accessing these services, though the never-married group had the highest odds ratio (3.30) of being screening. This signifies that information on cervical cancer is not largely shared within couples, but there’s an indication community health workers form a significant part in information sharing.
On women’s level of income influencing demand for screening services, monthly income emerged as an important variable where 19 (50%) of the women screened earned below Kenya shillings 5,000 compared to those earning above Kenya shillings 20,000 where only 11 (30%) had been screened. Another significant finding is that 29 (78%) of the women screened accessed health facilities more than 10km away compared to 8 (22%) accessing facilities less than 5km.

The influence of women’s education level on demand for cervical cancer screening had some significant findings in that out the 25 college/university respondents, only 1 (3%) reported to have been screened for cervical cancer.

5.3 Discussions

From the bivariate analysis of factors associated with cervical cancer screening, awareness of cervical cancer screening influences demand for cervical cancer screening in health facilities in Kenya; hence we accept this first research question. Investigation on the influence of social support on demand for cervical cancer screening services in health facilities, there was no significant influence, hence the observation that social support was not significant. On evaluating the influence of women’s education and income levels on demand for cervical cancer screening services in health facilities, there was significant influence, hence we accept that these two factors influence demand for these services.

5.3.1 Awareness and demand for cervical cancer screening services

The study sought to find the factors influencing demand for cervical cancer screening in health facilities in Kenya, and awareness was an important factor in influencing utilization of the services; but screening levels were quite low at 37 (11%), while only 43 (12%) aware of cervical cancer screening, screening age was between 25-45 years. This matches the literature by Maranga IO (2010), which states that awareness of cervical screening procedures was only 126 (35.5%) of patients had heard of a cervical screening. Similarly, only 54 (15.3%) patients had ever had a cervical smear. From the results, the age distribution was 49 (range 21–94 years) with 28.2% of the women aged between 40 and 49 years. Gichogo (2012) in a study to determine the factors influencing utilization of cervical cancer screening services among women between 15-60 years of age seeking, 290 women responded to questions on their
level of education, awareness on issues relating to cervical cancer screening services, family support and accessibility and utilization of cervical cancer screening services. The results showed that utilization was low; at 24.7% despite the fact that the study group consisted of well educated women who had autonomy in decision making and good family support. Only less than 20% of the women knew the importance of cervical cancer testing and majority (80%) of the respondents could only mention one to two risk factors. This was a more urban population compared to this study’s participants but the rate of past screening was, nevertheless, still quite low.

5.3.2 Social support and demand for cervical cancer screening services

Social support from male partners, friends and relatives has been proven to increase demand in seeking for health services. Females with partners are said to be more likely to participate in prevention activities like cervical cancer screening, and social networks act as a trusted informal sources of health information and saw these significant others as sources of encouragement to pursue healthy lifestyles. However, this study’s findings were partially supported by these statements the data shows that married women are engaged in screening services unlike those without.

On social support, results from this study showed that majority of the women screened for cervical cancer at 65% were married, followed by the never-married at 16%. Information sharing and significant especially friends and relatives were reported others as sources of encouragement to pursue healthy lifestyles. This is supported by a qualitative study by Jones, Steeves, and Williams (2009) who discussed the supportive role that family and friends play in assisting African American Men with prostate cancer screening decision making. This study reported that the participants discussed friends and family members in the context of trusted informal sources of health information. Recent research also indicates that social isolation and lacking the social support system of family and friends to discuss health issues was associated with lower levels of screening in African American men (Ye, Williams, & Xu, 2009). Community health workers in Kenya reported that some male partners do not permit their wives to seek screening because they do not want them traveling long distances, which often requires travel at night (PATH, 2002).
5.3.3 Women’s level of income and demand for cervical cancer screening services

On women’s level of income, this study’s findings show that majority of the women (30%) are on fulltime employment, but earning relatively low wages at below Kenya shillings 5,000, to access the screening services which were reported to be high. From this study, it’s noted that women that 79% of the women living more than 10km away from the nearest health facilities have been screened for cervical cancer; and majority reported that the cost of transport and cervical cancer procedures were very expensive.

These findings are confirmed by previous studies on the role of financial support and geographical access to health facilities. Opportunistic costs for forfeiting work and income even for a day prevents majority of them from going to health facilities for essential services (Goldie et al., 2005). In Nayarit, Mexico, and in Western Kenya, women reported that transportation costs and distance played a significant role in screening participation and loss to follow-up (PATH, 2002). Kenyan studies also show that many women must travel anywhere from two to eight hours, at an average cost of a day’s agricultural wage (Abwao et al., 2001).

Geographic factors play an important role in access to and use of health services (Snow et al., 1994). The major limitation in describing physical access to health services are the assumptions that people use the nearest health services and that they travel to it in a straight line. Women interviewed in Kenya reported that it is often problematic for a woman to go to a health clinic to be screened if she is “feeling healthy,” as she must convince her partner to get money for transport when she is not visibly ill. (Abwao et al., 2001).

5.3.4 Women’s level of education and demand for cervical cancer screening services

This study reports findings on the relationship between education and the demand for screening for cervical cancer screening services as a form of preventative health-care activity. From the study population, (95%) of the women had been screened for cervical cancer had at least primary school education and only 5% with not education at all.
Education can enhance the demand for preventative health services by raising awareness of the importance of undertaking regular health check-ups and may also improve the ways in which individuals understand information regarding medical tests, communication with health practitioners, and interpreting results. It also enhances the inclusion of individuals in society, improving self-efficacy and confidence, and all these factors may increase service uptake. Goldman and Smith (2002) examine the role of patient self-management in generating differences in health outcomes by education. Using data from HIV and diabetes patients, educated patients are indeed better at adhering to complex treatment regiments and that this has positive effects of the health.

5.4 Conclusions

It has been demonstrated that the vast majority of women in some countries had not heard of cervical cancer and even more knew nothing about cervical screening. This study had similar results whereby awareness about cervical cancer was 12% among the respondents. This low awareness level could be attributed to the study population being in a rural setting and therefore have little or no access to many forms of information through different avenues. These findings were similar to those from studies in major towns and cities in Nairobi, Mombasa and in other countries like Nigeria and South Africa’s major towns. (Appendix IX).

A person considered trustworthy by the population could have the possibility to effectively reach these people in their community. In this study, results show that the CHW that visited the women of their neighborhoods, were also able to invite a well-defined target group and at least half of the women they visited to attended the screening programme. The visit of the health promoter appeared to motivate women to proactively seek screening.

Even where screening facilities exist, there are individual characteristics that determine whether a woman actually does access the services. Women who accept to screen tend to be younger (aged 30–39), married, have a source of income and are better educated. Women's perceptions of the screening services, awareness of the disease, having financial resources and support from the health care workers are other significant factors in determining use of available facilities.
5.5 Recommendations

The research reported that studies have demonstrated the feasibility of cervical cancer screening and treatment strategies in Kenya. The study also suggests there is a need for:

i. Implementation research to ensure that cervical cancer prevention efforts are widely accepted, and cost-effective to achieve high coverage.

ii. There is a need for training, supervision and follow-up of CHWs activities as they act as the ‘interface’ between the formal health care system and the community; they bridge the gap between health needs and provision.

iii. Cervical cancer screening and treatment is mainly provided by gynecologists and oncologists. This limits accessibility to service provision, which is mainly restricted to tertiary hospitals in the capital cities or major towns due to its reliance on in-patient treatment and has also negative consequences on follow-up.

5.6 Suggestions for Further Research

There are other factors that influence demand for cervical cancer screening that need to be investigated. This study suggests the following research priorities:

i. Understanding individual and community-level barriers to uptake of screening services,

ii. Improving healthcare worker performance by identifying effective methods for training, supporting and supervising community health care workers,

iii. Identifying and evaluating strategies to strengthen the links between screening, diagnosis and treatment; given the number of competing public health priorities facing the rural Kenyan women.

iv. There is also need to find out why women, irrespective of whether they are urban or rural, their awareness, academic and income levels are not heavily involved in preventive health care despite the easy access to free or highly subsidized cervical cancer screening services.
Table 5.1: Contribution to the body of knowledge

<table>
<thead>
<tr>
<th>No.</th>
<th>Objective</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To establish the influence of awareness on demand for cervical cancer screening services in Yatta sub-county</td>
<td>Awareness in itself is not helpful unless women as individuals and as a community have the need and will to utilize cervical cancer screening services. The presence of many and or equipped health facilities in the vicinity without educating the masses on their usefulness is not productive. For demand of health care to shift from being sick/ill to adopting preventive health care, in addition to availability of facilities, women need the knowledge on the importance of cervical cancer screening.</td>
</tr>
<tr>
<td>2</td>
<td>To investigate the influence of social support on demand for cervical cancer screening services in Yatta sub-county</td>
<td>Social support from spouses, family and friends is crucial to adopting healthy lifestyle in regards to cervical cancer screening. More effort is required to strengthen social networks as they play a major role in women’s demand for cervical cancer screening.</td>
</tr>
<tr>
<td>3</td>
<td>To evaluate the influence of women’s income levels on demand for cervical cancer screening services in Yatta sub-county</td>
<td>Financial and geographic access to health care alone do not necessarily influence women’s demand for cervical cancer screening; unless they have health literacy to take advantage of the available resources to promote health.</td>
</tr>
<tr>
<td>4</td>
<td>To assess the extent to which women’s education level influences demand for cervical cancer screening services in Yatta sub-county</td>
<td>Education can enhance the demand for preventative health services by raising awareness of the importance of undertaking regular health check-ups and may also improve the ways in which individuals understand information regarding periodical tests, communicate with the health practitioner, and interpret results. It also enhances the inclusion of individuals in society, improving self-efficacy and confidence. All these factors may increase service uptake if rural areas are targeted in development programs.</td>
</tr>
</tbody>
</table>
REFERENCES


American Cancer Society (2009); http://www.cancer.org/docroot/SPC/content/SPC_1_Minority_Cancer_Unequal_Burden.asp on 7/29/09


Ombech Elizabeth, Muigai Anne, Wanzala Peter; *African Journal of Health Sciences*, Volume 21, Number 2 April-June 2012


Recent evidence on cervical cancer screening in Low Resource Settings – ACCP May 2011


Dear Respondent,

RE: FACTORS INFLUENCING DEMAND FOR CERVICAL CANCER SERVICES
IN HEALTH FACILITIES IN KENYA: A CASE OF YATTA SUB-COUNTY

I am a post graduate student at the University of Nairobi carrying out a research project on the factors influencing cervical cancer screening services in health facilities in Yatta sub-county. As part of my course, I am required to carry out a research on the above topic.

I will be grateful if you could spare sometime from your busy schedule and fill in the questionnaire. All the information provided will be purely used for academic purposes and your identity will be treated with utmost confidentiality.

Thank you for your cooperation.

Kindly do not write your name anywhere on the questionnaire.

Yours faithfully,
Mutie Mwikali Jacinta
APPENDIX II: QUESTIONNAIRE

CERVICAL CANCER SCREENING QUESTIONNAIRE

Read to respondent: “I would like to ask you some questions about yourself” Do not read out answers unless stated. Allow for unprompted responses and circle the corresponding to the answer.

SECTION 1: DEMOGRAPHIC CHARACTERISTICS

1. What is your age? a) 25-35 years b) 36-45 years c) 46-55 years

2. What is your marital status?
   a) Married b) Divorced c) Widowed d) Never-Married e) Separated

SECTION 2: AWARENESS LEVELS

3. Have you ever heard of cervical cancer? a) Yes b) No c) Unsure

4. Have you ever heard of cervical cancer screening (may be referred to as a Pap smear or VIA/VILI test)? a) Yes b) No c) Unsure

5. Have you ever attended a health talk on cervical cancer screening? a) Yes b) No

6. Who talked to you about cervical cancer screening?
   a) Doctor b) Nurse c) Community health worker d) Media e) Friend/Family Member f) Other (Specify): _____________________

7. Do you feel you get enough information to make decisions about cervical cancer screening? a) Yes b) No

8. Have you ever been screened for cervical cancer? a) Yes b) No c) Unsure

9. When dealing with health care workers, do you get an opportunity to ask questions and clarify your doubts? a) Yes b) No
SECTION 3: SOCIAL SUPPORT

10. During the past one year, did you and your partner discuss cervical cancer screening?
   a) Yes                             b) No                           c) Unsure/Don’t Know
11. Does your partner support you on matters related to cervical cancer screening?
   a) Yes                                b) No
12. Have you ever talked with your mother, daughter, or friend about cervical cancer screening?
   a) Yes                             b) No

SECTION 4: LEVEL OF INCOME

13. Are you currently?
   a) Employed full-time  b) Employed part-time  c) Self-employed
   d) Still studying       e) Retired       f) Unemployed
14. How much is your monthly level of income? (In Kenya shillings)
   a) Below 5,000                  b) Between 5,000 and 20,000   c) Above 20,000
15. What is the main occupation of the male head/spouse?
   a) Employed full-time  b) Employed part-time  c) Self-employed
   d) Still studying       e) Retired       f) Unemployed
   g) No male head/spouse
16. How much did the cervical cancer screening cost you? (In Kenya shillings)
   a) Free     b) Below 1000/-     c) Above 1,500/-     d) Never been screened
17. What would you say about cost of cervical cancer screening services in health facilities?
   a) Very Expensive      b) Expensive      c) Fair Cheap     d) Very Cheap
18. How far is the nearest health facility from your home?
   a) Less than 1 Km           b) 5 Km                c) 5 to 10km           d) More than 10 km
19. What would you say about the cost of transport to the health facility?
   a) Very Expensive       b) Expensive       c) Fair         d) Very Cheap
SECTION 5: LEVEL OF EDUCATION

20. What is the highest level of education you have completed?
   a) None               b) Primary                 c) Secondary                     d) College/University

21. Chances of curing cancer are better when the disease is discovered at an early stage.
   a) True               b) False                                           c) Unsure/Don’t Know

22. If you were offered a free cervical cancer screening, would you be willing to be screened?
   a) Yes               b) No               c) Unsure/Don’t Know

SECTION 6: FACTORS INFLUENCING DEMAND FOR CERVICAL CANCER SCREENING SERVICES

23. To what extent do you think the following are key factors that influence the demand for cervical cancer screening services in health facilities? Please rank between 1-5 (5 being the highest priority)

<table>
<thead>
<tr>
<th></th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Uncertain</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social support</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24. How long ago was the most recent time you were screened for cervical cancer?
   a) Less than 1 year  b) 1 year   c) 2 years   d) More than 3 years  e) Not Applicable

25. Where were you screened for cervical cancer?
   a) Government hospital               b) Private hospital                   c) Outreach clinic

26. Which of the following is the most preferred channel of getting cervical cancer screening information?
   a) Media               b) Community health workers       c) Community outreach programs
   d) Doctors             e) Nurses
27. Which of the following would you consider as the most hindering factor to cervical cancer screening?
   a) Awareness of screening services       b) Availability of screening services
   c) The procedure is too expensive       d) The procedure is to embarrassing
   e) Fear of testing positive for cervical cancer
   f) Health care workers are too busy and don’t allow you to ask questions and clarifications

Thank you for participating in this study
APPENDIX III: CERVICAL CANCER INCIDENCE RATES

Figure 2 Cervical Cancer incidence rates in different regions and age-groups
### APPENDIX IV: KREJCIE AND MORGAN TABLE

Table for Determining Sample Size for a Given Population

<table>
<thead>
<tr>
<th>N</th>
<th>S</th>
<th>N</th>
<th>S</th>
<th>N</th>
<th>S</th>
<th>N</th>
<th>S</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>10</td>
<td>100</td>
<td>80</td>
<td>280</td>
<td>162</td>
<td>800</td>
<td>260</td>
</tr>
<tr>
<td>15</td>
<td>14</td>
<td>110</td>
<td>86</td>
<td>290</td>
<td>165</td>
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<td>265</td>
</tr>
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<td>20</td>
<td>19</td>
<td>120</td>
<td>92</td>
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<td>169</td>
<td>900</td>
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</tr>
<tr>
<td>25</td>
<td>24</td>
<td>130</td>
<td>97</td>
<td>320</td>
<td>175</td>
<td>950</td>
<td>274</td>
</tr>
<tr>
<td>30</td>
<td>28</td>
<td>140</td>
<td>103</td>
<td>340</td>
<td>181</td>
<td>1000</td>
<td>278</td>
</tr>
<tr>
<td>35</td>
<td>32</td>
<td>150</td>
<td>108</td>
<td>360</td>
<td>186</td>
<td>1100</td>
<td>285</td>
</tr>
<tr>
<td>40</td>
<td>36</td>
<td>160</td>
<td>113</td>
<td>380</td>
<td>191</td>
<td>1200</td>
<td>291</td>
</tr>
<tr>
<td>45</td>
<td>40</td>
<td>180</td>
<td>118</td>
<td>400</td>
<td>196</td>
<td>1300</td>
<td>297</td>
</tr>
<tr>
<td>50</td>
<td>44</td>
<td>190</td>
<td>123</td>
<td>420</td>
<td>201</td>
<td>1400</td>
<td>302</td>
</tr>
<tr>
<td>55</td>
<td>48</td>
<td>200</td>
<td>127</td>
<td>440</td>
<td>205</td>
<td>1500</td>
<td>306</td>
</tr>
<tr>
<td>60</td>
<td>52</td>
<td>210</td>
<td>132</td>
<td>460</td>
<td>210</td>
<td>1600</td>
<td>310</td>
</tr>
<tr>
<td>65</td>
<td>56</td>
<td>220</td>
<td>136</td>
<td>480</td>
<td>214</td>
<td>1700</td>
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<td>70</td>
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<td>230</td>
<td>140</td>
<td>500</td>
<td>217</td>
<td>1800</td>
<td>317</td>
</tr>
<tr>
<td>75</td>
<td>63</td>
<td>240</td>
<td>144</td>
<td>550</td>
<td>225</td>
<td>1900</td>
<td>320</td>
</tr>
<tr>
<td>80</td>
<td>66</td>
<td>250</td>
<td>148</td>
<td>600</td>
<td>234</td>
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<td>322</td>
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<tr>
<td>85</td>
<td>70</td>
<td>260</td>
<td>152</td>
<td>650</td>
<td>242</td>
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<td>90</td>
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<td>76</td>
<td>270</td>
<td>159</td>
<td>750</td>
<td>256</td>
<td>2600</td>
<td>335</td>
</tr>
</tbody>
</table>

Note: "N" is population size
"S" is sample size.

Source: Krejcie & Morgan, 1970
APPENDIX V: THE KISH GRID

Instructions for using Kish Grid

1. Find out how many people living in the household are eligible to be interviewed. Include people who sleep there, but are not there when you visit.
2. The youngest is number 1; the second youngest is number 2, and so on.
3. The first household where you do an interview is household 1; the second is household 2, and so on, up to household 8 - the last in the cluster.
4. Look up the column for the household number, and the row for the number of eligible people. The number in the cell where the column and row meet is the person to interview. For example, if household 2 has 3 adults, interview the 2nd youngest (shown in bold type).

<table>
<thead>
<tr>
<th>Eligible people</th>
<th>Household</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 1 1 1 1 1 1 1</td>
</tr>
<tr>
<td>2</td>
<td>1 2 1 2 1 2 1 2</td>
</tr>
<tr>
<td>3</td>
<td>1 2 3 1 2 3 1 2</td>
</tr>
<tr>
<td>4</td>
<td>1 2 3 4 1 2 3 4</td>
</tr>
<tr>
<td>5</td>
<td>1 2 3 4 5 3 4 5</td>
</tr>
<tr>
<td>6</td>
<td>1 2 3 4 5 6 3 6</td>
</tr>
<tr>
<td>7</td>
<td>1 2 3 4 5 6 7 4</td>
</tr>
<tr>
<td>8</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>9</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
<tr>
<td>10 or more</td>
<td>1 2 3 4 5 6 7 8</td>
</tr>
</tbody>
</table>

The reason for numbering the household members from the youngest upwards (instead of the seemingly more obvious oldest downwards) is that younger people are more difficult to find at home, so the above grid gives young people a slightly higher chance of being interviewed.
APPENDIX VI: RESEARCH PERMIT

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

Ref: No. Date:

NACOSTI/P/14/8803/3657 22nd October, 2014

Mutie Mwikali Jacinta
University of Nairobi
P.O. Box 30197-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on “Factors influencing demand for cervical cancer screening services in Health Facilities in Kenya: A case Yatta Sub-County,” I am pleased to inform you that you have been authorized to undertake research in Machakos County for a period ending 17th December, 2014.

You are advised to report to the County Commissioner and the County Director of Education, Machakos County before embarking on the research project.

On completion of the research, you are expected to submit two hard copies and one soft copy in pdf of the research report/thesis to our office.

DR. S. K. LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Machakos County.
### APPENDIX VII: CERVICAL CANCER IN SELECTED AFRICAN COUNTRIES

#### Table 5.1 Problems identified in the East and Southern Africa Region (1998)

<table>
<thead>
<tr>
<th>COUNTRY</th>
<th>PROBLEMS IDENTIFIED</th>
</tr>
</thead>
<tbody>
<tr>
<td>Botswana</td>
<td>Staff shortages (lack of trained health personnel)</td>
</tr>
<tr>
<td></td>
<td>Lack of cervical cancer protocols</td>
</tr>
<tr>
<td>Eritrea</td>
<td>No policy regarding cervical cancer</td>
</tr>
<tr>
<td></td>
<td>Lack of trained cytotechnologists</td>
</tr>
<tr>
<td></td>
<td>Lack of public awareness regarding prevention</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>No policy nor guidelines</td>
</tr>
<tr>
<td></td>
<td>Weak infrastructure</td>
</tr>
<tr>
<td>Kenya</td>
<td>Screening limited to more urban areas</td>
</tr>
<tr>
<td></td>
<td>Follow-up of abnormal results</td>
</tr>
<tr>
<td></td>
<td>Low public awareness</td>
</tr>
<tr>
<td></td>
<td>Shortages of equipment and supplies</td>
</tr>
<tr>
<td></td>
<td>Lack of trained personnel</td>
</tr>
<tr>
<td></td>
<td>Few diagnostic centres with long waiting lists</td>
</tr>
<tr>
<td>Lesotho</td>
<td>Follow-up erratic</td>
</tr>
<tr>
<td></td>
<td>Staff shortages</td>
</tr>
<tr>
<td></td>
<td>No treatment facilities</td>
</tr>
<tr>
<td>Malawi</td>
<td>Problem not incorporated into the National Health Programme</td>
</tr>
<tr>
<td></td>
<td>No screening performed on a widespread basis</td>
</tr>
<tr>
<td></td>
<td>Surgery only mode of treatment available</td>
</tr>
<tr>
<td></td>
<td>Lack of knowledge of population</td>
</tr>
<tr>
<td>Mozambique</td>
<td>No nationwide cervical cancer screening programme</td>
</tr>
<tr>
<td></td>
<td>Current services only available to middle-and upper-class women</td>
</tr>
<tr>
<td>Rwanda</td>
<td>No cervical cancer screening programme</td>
</tr>
<tr>
<td></td>
<td>Pap smears only in one referral hospital</td>
</tr>
<tr>
<td></td>
<td>Limited access to health care</td>
</tr>
<tr>
<td>South Africa</td>
<td>Human resource disparities between rural/urban and public/private</td>
</tr>
<tr>
<td></td>
<td>Underutilization of resources associated with opportunistic screening</td>
</tr>
<tr>
<td></td>
<td>Cost and availability of transport</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Opportunistic screening</td>
</tr>
<tr>
<td></td>
<td>No colposcopy services</td>
</tr>
<tr>
<td></td>
<td>Only few patients can be treated (present with late stage of disease)</td>
</tr>
<tr>
<td>Uganda</td>
<td>Lack of policy guidelines</td>
</tr>
<tr>
<td></td>
<td>Screening inadequate at all levels of health care</td>
</tr>
<tr>
<td></td>
<td>70% of public health care facilities are equipped for Pap smears, but they are not being performed</td>
</tr>
<tr>
<td></td>
<td>Lack of trained personnel</td>
</tr>
<tr>
<td>Zambia</td>
<td>Lack of trained cytologists and pathologists</td>
</tr>
<tr>
<td></td>
<td>Lack of diagnostic and treatment options for SIL</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Pap smears only for a small number of urban women</td>
</tr>
<tr>
<td></td>
<td>Women present with late-stage cancer</td>
</tr>
</tbody>
</table>

APPENDIX IX: INTRODUCTORY LETTER FOR DATA COLLECTION
UNIVERSITY OF NAIROBI
COLLEGE OF EDUCATION AND EXTERNAL STUDIES
SCHOOL OF CONTINUING AND DISTANCE EDUCATION
DEPARTMENT OF EXTRA-MURAL STUDIES
NAIROBI EXTRA MURAL CENTRE

Your Ref: 

Our Ref: 

Telephone: 318262 Ext. 129

Main Campus 
Gandhi Wing, Ground Floor 
P.O. Box 30187 
NAIROBI

10th September, 2011

REF: UON/CEES/NEMC/19/163

TO WHOM IT MAY CONCERN

REF: MUTIE JACINTA MWIKALI REG. NO L50/618501/2013

This is to confirm that the above named is a student at the University of Nairobi College of Education and External Studies, School of Continuing and Distance Education, Department of Extra-Mural Studies pursuing Masters in Project Planning and Management.

She is proceeding for research entitled "factors influencing demand for cervical cancer screening services in health facilities in Kenya": A case of Yatta Sub-County.

Any assistance given to her will be highly appreciated.

CAROL MWILLY
CENTRE ORGANIZER
NAIROBI EXTRA MURAL CENTRE