BARRIERS TO EARLY DIAGNOSIS OF INVASIVE CERVICAL CANCER AMONG PATIENTS RECEIVING TREATMENT AT KENYATTA NATIONAL HOSPITAL, NAIROBI KENYA

BY

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OCTOBER 2014
DECLARATION

This thesis is my original work and has not been presented for a degree in any other University.

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DEDICATION

I dedicate this work to my beloved parents Ruth and Joshua Rugutt.

To my family: My husband Eric, children Cynthia, Martin and Natasha Korir.

To my sisters and brothers.

You have all inspired me in different ways: May God bless you.

AND

To all cervical cancer patients; notably those seeking treatment at Kenyatta National Hospital; as you struggle to cater for the high cost of treatment, as you encounter stigma associated with this disease; I urge you to keep up the fight.

I dedicate this work to you.

“I alone cannot change the world, but I can cast a stone across the waters to create many ripples.” Mother Teresa
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This research got clearance from the Ministry of Education, Science and Technology and the KNH Ethics Review Committee and I therefore wish to acknowledge this.

Last but not least I thank my family for all their patience, support and encouragement through this period. Most of all, I thank the almighty God for His protection and gift of life. It is my hope that the findings of this study will help to highlight the barriers to early diagnosis and treatment of cervical cancer in Kenya.

May God bless you all.
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<tr>
<td>AIDS</td>
<td>Acquired Immune Deficiency Syndrome</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence Interval</td>
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<tr>
<td>DNA</td>
<td>Deoxyribonucleic acid</td>
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<td>FIGO</td>
<td>International Federation of Gynecology and Obstetrics</td>
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<td>GPs</td>
<td>General Practitioners</td>
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<td>HBV</td>
<td>Epstein Barr Virus</td>
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<td>HPV</td>
<td>Human Papilloma Virus</td>
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<td>IARC</td>
<td>International Agency for Research on Cancer</td>
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<td>KNBS</td>
<td>Kenya National Bureau of Statistics</td>
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<td>Kenya National Demographic Health Survey</td>
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<td>Kenyatta National Hospital</td>
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<td>NCR</td>
<td>Nairobi Cancer Registry</td>
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<td>PAP smear</td>
<td>Papanicolaou smear</td>
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<td>TB</td>
<td>Tuberculosis</td>
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<td>VIA</td>
<td>Visual Inspection with Acetic Acid</td>
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<td>VILI</td>
<td>Visual Inspection with Lugol's Iodine</td>
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OPERATIONAL DEFINITION OF TERMS

**Attitudes:** This is a disposition or tendency to respond positively or negatively towards something, like idea, object, person or situation. These encompass, or are closely related to, our opinions and beliefs and are based upon our experiences.

**Barriers:** In this context, it refers to factors that contribute to late diagnosis or delayed treatment of cervical cancer.

**Beliefs:** Belief is considered propositional in that it is an assertion, claim or expectation about reality that is presumed to be either true or false (even if this cannot be practically determined, such as a belief in the existence of a particular deity).

**Culture:** Socially learned ideas, beliefs, values and knowledge, which constitute the shared bases of social action.

**Early stage:** This is stages 0, I and II. In stage 0 or *carcinoma in situ*, the cancer is still very superficial and is found only in the layer of cells lining the cervix. In stage I, it has invaded the cervix, but has not spread anywhere else, while stage IIa, the cancer has spread beyond the cervix to the upper part of the vagina but not in the lower third of the vagina. At this early stage, patients have a 5-year survival rate of 80% - 95%. In stage IIb the cancer has spread beyond the cervix to nearby areas, but is still within the pelvic area. Patients diagnosed in this stage have a 5-year survival rate of 75% to 78%.
**Health:** The total well being of an individual and it encompasses the physical, mental and social aspects and not merely the absence of disease or infirmity.

**Health seeking:** refers to what is done, whether individually or collectively, to maintain and/or return to health.

**Late stage:** This is when the cancer has spread beyond the cervix. These include stages III and IV. In stage III the cancer has spread to the lower part of the vagina or the pelvic wall and may be blocking the ureters. In these stages, 5-year survival rate is 47% to 50%. Stage IV is the most advanced stage of cervical cancer, the cancer having spread to nearby organs and other parts of the body. The 5-year survival rate is 20–30%.

**Papanicolaou (PAP’s) test:** This is a method in gynecology that was invented by Georgios Papanikolaou, primarily designed to detect premalignancy and/or malignant processes in the cervical region.

**Perception:** What an individual understands about something such as the signs and symptoms by which an illness is recognized, its presumed causes, recognized treatments, the pathophysiology and its prognosis. In the non-medical field, it is concerned with describing the world as experienced by human beings and relating this world to the physical environment, the structure and physiology of the organism and the impact of prior environmental conditions on the current perceived world.
**Peri-urban:** This is the intervening rural land that is socio-economically connected to the urban core city. Immediate neighbouring districts to the city shall be called peri-urban.

**Rural:** This shall refer to areas far away from the city from where patients shall have been referred to a major hospital.

**Squamous cell carcinomas and adenocarcinomas:** Cervical cancers and cervical precancers are classified by cell of origin. About 80% to 90% of cervical cancers are squamous cell carcinomas, which are composed of cells that resemble the flat, thin cells called squamous cells that cover the surface of the ecto-cervix. Squamous cell carcinomas most often begin where the ecto-cervix joins the endo-cervix. And the remaining 10% to 20% of cervical cancers are adenocarcinomas. Cervical adenocarcinoma develops from the mucus-producing gland cells of the endocervix. In some cases, cervical cancers have features of both squamous cell carcinomas and adenocarcinomas and are referred to as adenosquamous carcinomas (American Cancer Society, 2007).

**Staging:** This is the process of finding out the extent of cancer spread within the body. This information is gathered from examinations and diagnostic tests to determine the size of the tumor, how deeply the tumor has invaded tissues within and around the cervix, and the spread to lymph nodes or distant organs (metastasis). Staging is important since it helps determining the right treatment plan.
Urban: This shall constitute areas with increased density of human created structures developed by the process of urbanization and its immediate neighbourhood.
ABSTRACT

Although cancer still remains a major health problem, early diagnosis and improved therapeutic interventions of cervical cancer in developed countries are quite different from what is observed in the developing countries; Kenya included. In resource constrained environments, limited access to oncology facilities, coupled with the stigma associated with cancer has much influence on the disease reporting and management. While the biological factors associated with early diagnosis and proper management have been documented, there is need to clearly define the role of individual, social, cultural and economic factors as determinants of early diagnosis of cervical cancer. The main objective of the study was to determine the barriers to early diagnosis among cervical cancer patients. Kenyatta National Hospital was chosen because it is the only national referral hospital in Kenya with radiotherapy machine used in treatment of cancer patients. Given that the cost of treatment is lower than the private hospitals, it attracts a large number of patients as referrals from the forty seven counties in the country. This was a descriptive survey using researcher-administered structured questionnaires to obtain data from a sample of 320 cervical cancer patients in Kenyatta National Hospital’s radiotherapy clinic and among in-patients. To corroborate the findings from the patients, key informant schedule was administered to 30 healthcare personnel who interact closely with these patients to seek their views on reasons for late diagnosis. The data was analyzed using SPSS version 16.1 and presented in frequencies, graphs and tables. Chi square was used to test association among variables and significance level was set at 0.05. Individual patient’s attitudes of the disease and health seeking behaviour were analyzed and correlated with the measurable outcomes which include; time lapse to disease diagnosis, age, socio-economic status, cultural factors, health facility-related factors and reaction time by health personnel. The findings have been correlated with time of onset of disease to diagnosis and treatment. The findings of this study established that general lack of knowledge on cervical cancer (75.3%) was significantly associated with late diagnosis (Chi-square=9.27 (1, N= 320; p=0.0023). A preponderance 266 (83.1%) had no knowledge on screening tests prior to diagnosis while only 54 (16.9%) were aware of Pap smear test. Similarly education level ($\chi^2 = 20.62$ (3, N=316, $P<.0001$) was significantly association with late diagnosis of cervical cancer. Logistic regression analyses showed that higher education attainment was associated with 0.58 lower odds of late diagnosis of cervical cancer. Other social factors like age at diagnosis, locality, marital status and religion did not show any significant association with either early or late diagnosis. This study recommends that well organized cancer awareness and screening programmes be established while considering aspects of accessibility and affordability. Strengthening healthcare and referral systems, as well as continuing education of existing healthcare providers is recommended.

Key words: cervical cancer, barriers, staging
CHAPTER ONE: INTRODUCTION

1.1 Background To The Study

Cancer is an increasing public health problem in Africa exacerbated by rising HIV-associated malignancies and exposure to environmental carcinogens. The burden of cancer is expected to increase rapidly in the next few years, largely due to adoption of western type of life styles and an increasing proportion of elderly people. According to the World Health Organization (WHO, 2008), 12.5% of all deaths worldwide are caused by cancer, more than from HIV/AIDS, TB and Malaria combined, yet at least one-third of all new cases of cancer every year can be prevented. A recent World Health Organization report (WHO, 2010) states that 70% of cancer-related deaths occur in the developing world with most of the patient being diagnosed late which lends to the high mortality statistics. The report further states that cancer-related deaths in developing countries could reach as high as 6.7 million by 2015 (WHO, 2010).

Cervical cancer is ranked the third most common cancer in women globally, and the seventh overall, with an estimated 530,000 new cases in 2008. It is a major cause of death in developing countries where more than 85% of the global burden occurs accounting for 13% of all female cancers (Ferlay & Shin, et al., 2010). The incidence of cervical cancer in Africa is highest in eastern and southern Africa (30 – 40 per 100,000 females). The rest of sub-Saharan Africa has a lower incidence (20 – 30 per 100,000 females), and northern Africa has the lowest incidence at 12 per 100,000 females on average (Parkin et.al. 2008). In Uganda, cervical cancer is the most common in women with age standardized rates increasing at an average of 3% a year, currently at 52.4 per 100,000 in
2002 -2006 (Parkin et al., 2010). All these suggest that environmental and demographic characteristics have a bearing on cervical cancer prevalence.

Kenya has a population of 10.32 million women aged 15 years and older who are at risk of developing cervical cancer. GLOBOCAN (2008) estimates indicate that in Kenya 2354 women are diagnosed with cervical cancer and 1676 die from the disease every year. It is ranked as the second most frequent cancer among women and the second most frequent cancer among women between 15 and 44 years of age (Parkin et.al. 2008). This age bracket also coincides with the reproductive age bracket. The graph shown on figure 1.1 is extracted from IARC report (GLOBOCAN, 2008) showing estimated Age-Specific Incidence Rates for cervical cancer in Kenya in comparison with estimates in Eastern Africa and the World.
The etiology of cervical cancer has been largely linked to a virus known as Human Papilloma virus (HPV) which is sexually transmitted. About 38.8% of women in the general population are estimated to harbor cervical HPV infection at a given time, and 60.9% of invasive cervical cancers are attributed to HPVs 16 or 18 (WHO/ICO HPV Information Centre, 2010). The development of vaccines against HPV represents a great success in terms of prevention of major cancers. The implementation of these vaccination programs in low and middle income countries, however, poses a major economic challenge (Sankaranarayanan & Boffetta, 2010). A few countries in Africa have administered the vaccine to a large population. Political will is crucial in implementation of the vaccine. Rwanda and Uganda are some of the countries that have administered the vaccine to a large population targeting young adolescent girls. In Kenya the implementation of these vaccines has been very slow largely due to cost implications.
and lack of awareness on the importance of these vaccines. The fact that the vaccines targets young girls from the age of 9 to 13 years is another challenge given that consent has to be given by the parents or a directive from the government. In private hospitals and clinics the vaccines are available but the cost for the three recommended doses is inhibitive.

Cervical cancer is largely preventable through screening tests such as Pap’s smears, visual inspection with acetic acid (VIA), HPV-DNA tests and treatment of precancerous lesions (Heard, 2009). Although these preventive approaches have been noted to have reduced the burden of cervical cancer in developed countries (Sankaranarayanan, 2005), the disease remains an important public health problem in poor-resource settings because of the inadequate coverage and quality of screening services (Gakidou, Nordhagen & Obermeyer, 2008). World Health Organization (2008) recommends that if Pap’s screening test for cervical cancer is considered in developing countries, it should focus primarily on women between the ages of 35 and 50 years since these women are generally at highest risk of developing the disease or precancerous lesions. The Alliance for Cancer Prevention (2003) further states that once-in-a-lifetime screening between the ages of 35 and 40 can reduce lifetime cervical cancer risk by 25% to 35%. Hence there appears to be several factors that prevent women from accessing screening services as well as diagnostic services once cancer symptoms begin to manifest. While the biological factors associated with early diagnosis and proper management have been well documented, there is need to clearly define the role of individual, social, cultural and
economic factors associated with late diagnosis of cervical cancer. This study therefore intended to establish the nature of these factors.

1.2 Problem Statement

Cervical cancer is the leading cause of death among cancer cases diagnosed in the country. Delayed diagnosis leads to delayed treatment and spread of the diseases to other parts of the body (metastasis). Other than individual patient factors, there are factors associated with the organization of the health care system that may be responsible for late diagnosis of cervical cancer. Level of training of health-care personnel, availability of diagnostic services at the primary health systems and proximity to these facilities are some of the factors that may impact on diagnosis of cancer. Missed or wrong diagnosis by primary doctors and failure to advice on referrals may contribute to delays leading to late diagnosis and treatment of cervical cancer. Early detection greatly improves the chances of successful treatment and prevents cervical cell changes from becoming cancerous. In Africa the treatment outcomes for cervical cancer is still less optimal due to poor living standards (Sankaranarayanan, 2005).

In developed countries like the United States of America, early diagnosis as a result of routine Pap smear screening has led to low mortality rates due to cervical cancer (Sankaranarayanan, 2005). In Kenya, the high incident rates and the late stage presentation may be attributed to lack of screening services at primary health care facilities. This is further compounded by issues of accessibility, affordability and availability of health care services. Nevertheless there is limited information about factors
contributing to late diagnosis and late health seeking among patients. This study sought to investigate and document socio-economic, personal and health care system factors that are associated with late diagnosis of cervical cancer.

1.3 Research Questions

1. What are the patterns and types of cervical cancer diagnosed at Kenyatta National Hospital?
2. What is the role of socio-economic factors associated with late diagnosis of cervical cancer among patients at Kenyatta National Hospital?
3. What is the role of personal and cultural factors in late diagnosis of cervical cancer?
4. What are the factors related to the health care organization that are associated with delayed diagnosis of cervical cancer?

1.4 Research Objectives

The main objective of this study was to determine barriers to early diagnosis of cervical cancer among patients reporting at the radiotherapy clinic and admitted in gynaecology wards of Kenyatta National Hospital.

1.4.1 Specific Objectives

1. To establish the patterns and types of cervical cancer reported at Kenyatta National Hospital.
2. To determine the role of socio-economic factors associated with the diagnosis of cervical cancer among patients at Kenyatta National Hospital.
3. To determine the role of personal and cultural factors in the diagnosis of cervical cancer.

4. To identify factors related to the health care organization that are associated with delayed diagnosis of cervical cancer.

1.5 Justification and Significance of the Study

This study sought to determine socio-economic, individual and health system factors that influence early detection of cervical cancer. Studies have shown that cervical cancer if detected early can be treated, yet this cancer is still one of the most common affecting Kenyan women today. It has been documented that most of the women report to diagnostic facilities late when treatment is not viable. It is of great importance to know what causes these delays and provide recommendations towards ensuring that the diseases can be controlled or prevented. The consequences of late diagnosis include advancement of disease to other organs resulting in more morbidity, reduced survival rate and mortality. It also has cost implications of maintaining long term patients on palliative care. A desired goal for cervical cancer is early diagnosis which leads to early treatment and cure. The most common age affected is 35 to 50 years. These are women who are still highly productive in society. These women have a high chance of survival when the disease is discovered early. Knowledge on the barriers to early detection will complement efforts to prevent the disease.

The findings of this study may serve as evidence that more awareness campaigns on cervical cancer especially in the rural areas is required. Programs may be developed that
should address the identified needs such as decentralizing diagnostic services so that women do not have to travel long distances to get a diagnosis. Health-care personnel require continuous medical training to be aware of the burden of cancer in the country and to be able to refer patients promptly when signs and symptoms of the disease are noted.

Women especially in the rural areas have less access to cancer awareness programmes hence they have limited information on cervical cancer, prevention strategies and importance of screening. Some traditional beliefs and practices such as use of traditional medicine compound to this lack of knowledge. Dissemination of information on cervical cancer at the community level is therefore important as it will encourage women to drop such practices and seek medical advice early. Heightened advocacy in these areas is essential in order to achieve the vision 2030 goal on elimination of preventable diseases. The results of this study will be utilized by the Ministry of Health to plan and prioritize activities geared at reducing cervical cancer in the community especially decentralizing screening services or incorporating in existing Maternal Child Health (MCH) units in district hospitals. The Kenya Cancer Association (KENCASA) is a Non Governmental Organization involved in advocacy, awareness creation and screening of cancer. The results of this study will be presented to KENCASA to utilize in prioritizing of their activities.

1.6 Limitation and Delimitation of the Study

The study was carried out at Kenyatta National Hospital, which is the largest referral hospital in Eastern and Central Africa. The hospital largely caters for persons of lower
and middle socio-economic class as defined in the Kenya National Demographic Health Survey (KNBS and ICF Macro, 2010). Patients receiving treatment at this hospital hail from various parts of the country hence have varied cultures, attitudes and practices.

The study was delimited to cervical cancer patients reporting at the hospital; had been diagnosed not more than two years prior to date of data collection and had a confirmed diagnosis including the stage of the disease. This was to reduce recall bias of their practices prior to diagnosis and to document early and late stages of the disease at diagnosis. Cervical cancer patients seeking treatment in other hospitals including AgaKhan, Cancer Care Centre and Nairobi hospitals were therefore not included in this study. Also patients whose status was not confirmed were excluded. The findings of this study may be generalized to women residing in rural and some urban areas and cervical cancer patients seeking treatment at Kenyatta National Hospital. Given this scenario results may not be generalized to the whole country.

**1.7 Conceptual Framework**

The model described in figure 1.2 shows barriers that are associated with late diagnosis of cervical cancer and how they are interrelated. The independent variables which include demographic factors, socioeconomic, cultural and individual factors are those aspects that are changeable and can determine whether a patient will seek diagnosis early or will seek diagnostic services late when the disease has progressed. The health system factors have been categorized as intervening factors. These are factors relating to proximity and accessibility to diagnostic services, availability of diagnostic tests, personnel training,
cost of diagnostic services and specialized care for cervical cancer patients. These factors may have a negative or positive effect on independent variables and will determine the outcome as well.

The independent factors interact with intervening variables to determine if a patient will seek health care early or late and hence will determine early treatment leading to cure, delayed fatality or complications and even death. Age for instance can influence diagnosis since women who are older e.g. above 60 years are less likely to seek health compared to younger women. Early diagnosis leads to early management and higher survival whereas late diagnosis means late management, lower survival and high mortality. Figure 1.2 demonstrates how all these variables are interrelated.
CONCEPTUAL FRAMEWORK

Independent Variables

Demographic details
- Age
- Marital status
- Residence
- Locality of residence
- Religion

Socio-economic factors
- Education level
- Occupation
- Income level

Cultural factors
- Fear of stigmatization
- Beliefs and practices
- Orientation to alternative medicine

Individual / Personal factors
- Health seeking behavior
- Attitudes and perceptions
- Knowledge / awareness level
- Fear of diagnostic procedure
- Fear of confirmation of diagnosis
- Expectations from interaction of doctor and patient

Intervening Variable

Health System Factors
- Proximity to diagnostic centre
- Access to screening services
- Availability of diagnostic tests
- Duration of diagnostic tests
- Personnel training
- Cost of diagnosis
- Medical insurance
- Specialized care

Outcome

- Early treatment
- Cure/high survival
- Curtailed disease

- Late treatment
- Disease progression
- Low survival
- Mortality

Figure 1.2 Conceptual Framework
CHAPTER TWO: LITERATURE REVIEW

2.1 Prevalence of cervical cancer

The incidence and mortality from cervical cancer have substantially declined worldwide over the past four decades. (Parkin et al. 2008). In spite of this decline, cervical cancer continues to be a leading cause of death among women in developing countries (Parkin et al., 2008). Sub-Saharan Africa has by far the highest burden and mortality associated with cervical cancer in the world. In South Africa, the risk of development of cervical cancer has been estimated to be 1 in 29 (GLOBOCAN 2008). In Nigeria, the estimated incidence rate of cervical cancer is 25 per 100,000 women; with an estimated 8000 new cases of cervical cancer diagnosed in the country each year (Adewole et al. 2005).

Uganda has the highest rates in East Africa at 52.4 per 100,000 (Parkin & Nambooze, 2010) and continues to rise. Similarly in Kenya statistics have shown that cervical cancer is on the rise. A report by Nairobi Cancer Registry indicates that cervical cancer is the second most common cancer accounting for 20% of all female cancers. (Nairobi cancer registry report, 2006).

The estimates published by the International Agency for Research on Cancer have indicated that the incidence of cervical cancer is on the rise and if nothing is done to curtail this increase it is projected that the figures will increase from those estimated in the year 2008 to almost double by 2025 as shown in the figure below. (GLOBOCAN, 2008).
This rise in incidence is escalated by the prevalence of HIV-AIDS. Studies indicate that HIV-positive women are 2–12 times more likely to develop precancerous lesions that can develop into invasive cervical cancer (Chirenje, 2005). According to Heard, et.al (2005), women infected with HIV face an increased risk of persistence and recurrence of human papilloma virus (HPV), which has been attributed to cause more than 60% of invasive cervical cancers (ICC), an AID’s defining malignancy. Given the low levels of awareness of cervical cancer in the country, a large part of the population may be ignorant of these
facts. Integration of cervical cancer education and screening services within the existing HIV, testing and counseling centres is therefore recommended.

The incidence of cervical cancer has also been linked to a considerable extent with the role of cultural factors such as sexual norms and practices of a community (Helman, 2000; Chavez et al. 2001). According to Helman (2000), cervical cancer is often associated with social-economic status and is highest in groups with the least education. Mortality from cervical cancer also varies according to socio-economic indicators. Chavez et al. (2001) argues that the patients in the lower social classes have consistently poorer survival rates than those in the higher social classes and that there are other bottlenecks to effective diagnosis of cervical cancer which include lack of awareness about screening, inappropriate beliefs, misconceptions, limited or poor quality cytology services, poor follow-up or unavailability of diagnostic and treatment services for women with dysplasia.

It has also been noted that cervical cancer is prevalent among women who frequently live within a social context where their human rights are severely restricted, employment is non-existent, malnutrition is rampant and habitable conditions are poor (Sankaranarayanan, 2010). Prevalence among different races has also been documented. For instance Hispanic women have higher rates of cervical cancer compared to non-Hispanics (Watson M, et.al. 2008). Mortality rate from cervical cancer among Latinas is 50% higher than in non-Hispanic Whites (Carrie Kingsley, et.al.2010). The current study underscores the importance of socio-economic characteristics but recognizes that cancer
detection and treatment is also a factor of individual rationalization as well as the structure of the health care system.

Cervical cancer forms in tissues of the cervix. Since there are usually no early symptoms, regular check up is essential for early detection. Screening using Papanicoloou Smear (Pap’s) test or visual inspection with acetic acid and visual inspection with lugors (VIA and VILI) test is important for detecting cervical abnormalities before they become cancerous.

Despite the fact that this disease is preventable, most women in the low and middle income countries do not have access to effective screening programmes (Parkin et al 2008). Okonofua (2007) argues that most invasive cervical cancers (between 60% and 80%) are found in women who have not had a Pap’s test within the past 5 years and further states that half of all women diagnosed with cervical cancer are aged between 35 and 55 with just over 20% being above age 65.

The high rates of incidence and mortality due to cervical cancer is to a large extent attributed to lack of screening programmes in the country (Cancer Facts & Figures, 2009). While Pap smear screening programs have been very successful in reducing incidence of cervical cancer in high income countries (Sankaranarayanan, 2008), they are costly and have not been implemented in most low-income countries. In Kenya just like other sub-Saharan countries, there are limited organized screening programs for cervical cancer especially in rural areas, and whereas some screening services are available in some hospitals, mainly in urban cities and private hospitals they are unaffordable to the
majority of the population. The current study will investigate factors related to late diagnosis and whether these factors apply in both rural and urban localities.

When detected at its earliest stage, cervical cancer has a 5-year survival rate of 92%, but overall, the 5-year survival rate for all stages is about 72%, with variations dependent on disease stage at diagnosis (WHO report, 2008). A report from WHO indicate that while a woman in the United States has a 70% chance of surviving cervical cancer, that chance is reduced to 58% in Thailand, to 42% in India and to only 21% in sub-Saharan Africa (WHO Bulletin, 2006). A study on knowledge, attitudes and practices about cervical cancer and Pap smear testing done in Kenyatta National Hospital showed that only 22% of all patients had undertaken a Pap smear test in the past and that patients aware of cervical cancer were more likely to have had a Pap smear test in the past (Gichangi et al 2003). The study further showed that awareness of cervical cancer was low even amongst women who had been diagnosed with cervical cancer. In another study done among patients who sought various health care services at Tigoni sub-district hospital, Limuru - Kenya, it was found that 40% of the women were aware about cervical cancer though many lacked factual information (Gatune et al. 2005). Both of these studies found low awareness levels and those aware were not utilizing screening services offered at hospitals, despite the fact that awareness promotes early health seeking behaviour. Early detection through screening of populations at risk, increased awareness of signs and symptoms leads to greater chance of successful treatment of cervical cancer. This study seeks to determine socio-economic, cultural and health facility-related factors that are associated with delayed diagnosis of cervical cancer.
The table below summarizes the rates and patterns of cervical cancer in Kenya.

**Table 2.1 Rates of cervical cancer in Kenya**

<table>
<thead>
<tr>
<th>Burden/ rates of cervical cancer in Kenya (estimates for 2012)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Women at risk for cervical cancer (Female population aged &gt;=15 yrs)</td>
<td>12.92M</td>
</tr>
<tr>
<td>Annual number of cervical cancer cases</td>
<td>4802</td>
</tr>
<tr>
<td>Annual number of cervical cancer deaths</td>
<td>2451</td>
</tr>
<tr>
<td>Crude incidence rates per 100,000 population and year</td>
<td>22.4</td>
</tr>
<tr>
<td>Age-standardized incidence rate per 100,000 population</td>
<td>40.1</td>
</tr>
<tr>
<td>Cumulative risk (%) Ages 0 – 74 years</td>
<td>4.4</td>
</tr>
</tbody>
</table>

*Source:*  *IARC GLOBOCAN, 2014*

### 2.2 Diagnosis of Cervical Cancer

Pre-cancerous changes of the cervix may lead to cancer in some women. The process may take several years but sometimes can happen in less than a year. For most women, pre-cancerous cells remain unchanged and are self limiting. Persistent pre-cancers can be treated, thus, effectively preventing cervical cancer. It is for this reason that early detection through screening is crucial. Women suspecting cervical cancer should report to health facilities early, receive prompt screening and appropriate diagnostic process so as to receive appropriate therapy before metastasis or complications occurs. Cervical cancer can be diagnosed through the following methods:

*The Papanicolaou’s smears (Pap Smear) screening test:* The Pap smear is a simple test that can reveal cervical abnormalities long before they progress into cancer. Pap smear and treatment of precancerous lesions can reduce invasive cervical cancer by up to 90%.
**Colposcopy Exam:** This usually follows a positive finding from a Pap’s smear screening test. A colposcopy is an in-office examination that allows the doctor to view the cervix more closely with a colposcope (a lighted instrument that magnifies the cervix).

**Cervical Biopsy and Endocervical Curettage:** This involves removing small amount of cervical tissue to be examined under a microscope. Depending on the findings during the colposcopy, a few areas of the cervix may be biopsied.

**Cone Biopsy and LEEP:** This is done both for diagnosis to remove larger tissue for histological examination and as treatment to remove the pre-cancerous tissue.

**Visual inspection with acetic acid (VIA) and visual inspection with Lugol’s iodine (VILI):** These are other promising screening alternatives to the Pap smear. They require simple vinegar or iodine solutions and the eye of a trained health provider to spot abnormal tissue. Another diagnostic process involves testing women for the presence of HPV on their cervixes.

Cervical cancer screening using Pap smear that have significantly reduced the rates of cervical cancer in high and middle income countries are still very poorly applied in Africa. Okonofua observes that reasons for the low acceptance of secondary prevention services for cervical cancer in Africa include the lack of awareness of cervical cancer and the role of screening, inappropriate health seeking behavior by women, poor organization of health services and low priority accorded to women’s health by policymakers.
The graph below is an extract from WHO-HPV Information Centre report (2010) which shows that cervical cancer screening coverage for women aged 18 and 69 years is less than 5% in all age groups in Kenya.

Figure 31: Estimated coverage of cervical cancer screening in Kenya, by age and study

In the rural areas and at community level in Kenya these services are not only lacking but knowledge and awareness of their importance is also inadequate. In urban areas where screening services are available in hospitals at reduced cost, only limited number of women utilizes them due to low levels of awareness.

Figure 2.2 Estimated coverage of cervical cancer screening in Kenya by age group
Previous research suggests that lack of knowledge about cervical screening is the most significant barrier to screening among women. Similarly, fear of the procedure, embarrassment, fatalism and lack of time are cited as obstacles to cervical screening (Abdullahi et al 2009). Hence the study will seek to determine and highlight some of the barriers associated with late diagnosis of cervical cancer among women in Kenya with a view to recommending strategies to improve early detection and treatment.

2.3 Factors determining diagnosis of cervical cancer

The burden of cervical cancer has been cited in several studies to be higher in lower socio-economic status of a society. Women with low income, low level of education are less likely to visit a health facility for routine medical checkups compared to women of higher socio economic status. Large populations of Kenya are of lower social backgrounds, do not have medical insurance and are faced with other communicable diseases such as malaria, malnutrition, tuberculosis among others. They have no comprehensive health insurance and health care services are costly and inaccessible to many. Organized screening programmes for instance may not reach the rural areas owing to poor road network systems. Such services are usually concentrated in the urban cities.

In a study by O’Malley and colleagues (O’Malley et al. 2006), among the women who were on Medicaid, 51% were diagnosed with late stage disease at the time of initial diagnosis. The report further stated that, for women without medicare coverage, adjusted odds ratios for late-stage diagnosis were 2.8 times higher and 1.3 times higher among
women enrolled or intermittently enrolled in Medicaid at the time of diagnosis respectively.

Socio-economic status is related to healthcare access and coverage which can lead to delayed diagnosis. Low-income and uninsured people in particular are more likely to be diagnosed with cancer at late stages of disease, to receive substandard clinical care and services and to die from the disease (del Carmen and Diaz-Montez, 2009). Poverty has been found to be the biggest predictor of invasive cervical cancer (del Carmen and Diaz-Montez 2009). From the foregoing, studies on factors related to late diagnosis of cervical cancer have been done in settings outside Africa. There is therefore need to investigate if these factors apply in a Kenyan scenario.

Personal and cultural factors such as fear of stigma and discrimination may have an impact on diagnosis of cervical cancer. Most of the African populations have varied beliefs, practices and attitudes that may play a significant role in impacting on cancer diagnosis. Some negative beliefs are that the development of cancer is just ill- luck, or the will of God. Some believe it is caused by trauma during childbirth or during sexual intercourse. Such beliefs have also been cited in a minority group of Hispanics in USA with findings that poverty and cultural beliefs were hindrances to screening tests and that preventive care is viewed as a luxury (Carrie Kingsley et.al. 2010). Similarly, a study done on Somali women living in Camden-London on perceptions and barriers to uptake of screening revealed the importance of religious beliefs in determining the perception of risk of cervical cancer. The study showed that there was lack of understanding of risk
factors and knowledge on screening was similarly low. It was also established that fatalistic attitudes associated with idea of “God’s will” being at play in determining whether a person developed cervical cancer was an overriding factor (Abdullahi et al. 2009). It emerged that among Somalis the dominant Islam religion supports the view that health is typically shaped by a combination of traditional Somali and Islamic beliefs, with most believing that illness and healing occur by the will of God (Abdullahi et al. 2009).

Other personal barriers include discomfort at a doctor's touch, fear of finding cancer or other diseases, embarrassment, and pain (del Carmen et al. 2007).

Ethnicity is thought to be a significant cultural factor in cervical cancer. In order to be effective, cancer control interventions targeting different cultural groups require a thorough understanding of culturally based knowledge, beliefs, and practices (Gatune et al., 2005). It is important that the educational programmes be designed for the culture of the people while observing the myths that tend to be prevalent about cancer. In some cultures men will also need information about diseases that affect women especially on cervical cancer.

Cancer diagnosis at the community level is almost non-existent in Kenya. In district hospitals, where people in the rural areas seek healthcare, they are rarely done due to lack of medical supplies such as reagents and equipment. This is further hampered by lack of adequate trained personnel to perform the diagnostic tests. A study done by Tenge (Tenge et.al 2009) on burden of cancer in Western Kenya, states that most of the healthcare providers are ill prepared to effectively recognize and take appropriate measures when
faced with cancer patients. He further states that this is as a result of inadequate knowledge, poor attitude, lack of appropriate skills and facilities to manage the patients effectively (Tenge et. al. 2009). In another study on downstaging of cervical and other selected cancers in Malaysia, they decided to set up a simple and cost effective program mainly consisting of training for health care staff in the rural areas to improve their skills in early cancer surveillance. This together with increased public education, awareness of importance of early detection led to a drop of cervical cancer late stage (III and IV) from 70% (47/67) in 1993 to 27% (28/105) in 1998 (Devi, Tang, Corbex, 2007). It is therefore important for health care personnel working at the primary level to understand the process of efficient referrals in order to minimize delays in diagnosis of cervical cancer.

However, other factors such as missed diagnosis by doctors can also cause delays. There are times when a patient seeks medical advice at the onset of signs and symptoms, only to be treated for minor infections instead of immediate referral for further check ups. The primary doctors in public, private or mission hospitals, play a major role in diagnosis of cervical cancer. Although they are often faced with challenges such as lack of facilities for laboratory testing and confirmation of diagnosis, it is imperative that they refer the patients promptly for proper diagnosis.
CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

3.1 Introduction

This chapter describes the methodologies used in this study, defines the variables and the study area including the population and study tools. Ethical issues pertaining to the study are also mentioned here and how they were handled.

3.2 Research Design

This was a descriptive survey of cervical cancer patients attending Kenyatta National Hospital. The design was chosen in order to understand the issues surrounding cervical cancer and the reasons for late diagnosis among patients reporting in hospitals. The design was appropriate for this study since it was possible to understand a large population by surveying a small sample and to acquire more information about their current and past experiences, opinions, attitudes, awareness and knowledge on issues surrounding cervical cancer. The Face-to-face interviews were utilized in this study. This was preferred as it provided an enabling environment to establish rapport with the patient. Given that this was a sensitive topic it was paramount to explain to the patient the reasons for the study; take them through informed consent and get signed consent before the interviews.

3.3 Location of Study

This study was conducted at Kenyatta National Hospital (KNH) in Nairobi, Kenya. KNH is the largest national referral and teaching hospital in East Africa with a bed capacity of 2000, average annual outpatient attendances of 600,000 visits and average annual in-
patient attendance of 89,000 patients. Kenyatta National Hospital has a cancer unit that attracts high numbers of referrals from both urban and rural areas in Kenya and East Africa. Kenyatta National Hospital is the only government or public hospital with radiation machines in Kenya. The other referral hospitals including Moi Teaching and Referral Hospital in Eldoret offers chemotherapy treatment but not radiotherapy. Due to high number of patients seeking cancer treatment at KNH patients are given appointments running into several months to access the services.

For cervical cancer treatment a radiation machine that has the ability for both external and internal therapy is required. The Cobalt machines at KNH can only do external where an external machine is directed to cancer cells. For internal radiation, radioactive equipment is put into the tumour or into a body cavity close to the tumour. This requires advanced machines which are available in private hospitals at a high cost. The other government referral hospitals: Moi Teaching and Referral hospital in Eldoret and Jaramogi Oginga Odinga hospital in Kisumu County though they diagnose and offer some treatment including chemotherapy, lack equipment for radiotherapy treatment.

Kenyatta National hospital caters for a large number of patients both from lower and middle class backgrounds given that the cost of treatment is slightly lower compared to other institutions that offer similar services for instance Nairobi, MP Shah and Aga Khan hospitals. For cancer diagnosis and treatment, the personnel are highly qualified ranging from pathologists, medical oncologists, surgeons, radiotherapists, oncology nurses and other fields essential in diagnosis and treatment of cancer. Unfortunately, they are
inadequate owing to the magnitude of patients they have to see. For instance there are only two medical oncologists employed by the hospital, one radio-oncologist, one haematologist and one paediatric oncologist. In addition to shortage of personnel, the equipment for treatment are inadequate, for instance, the unit has only two cobalt machines for radiotherapy treatment. For a population of 40 million people, this is grossly inadequate especially since there are many referrals from other health institutions in the country to Kenyatta National Hospital. It is for this reason that KNH was chosen for this study so as to capture views from women of varied geographical backgrounds and ethnic communities in Kenya.

3.4 Target Population

Since cervical cancer affects only women, the study took as its target population women diagnosed with cervical cancer attending Kenyatta National Hospital for treatment. The study focused on women diagnosed two years prior to fieldwork so as to minimize on recall biases. It also focused on women who were being treated at the radiotherapy clinic or in the wards undergoing chemotherapy. The reason for concentrating on these particular groups is because they had already undergone all diagnostic procedures necessary to make a confirmation of cancer diagnosis. The stage of the disease at diagnosis was also key hence the reason for concentrating on diagnosed cases. The study was also interested in determining the period it takes to make a confirmation of cancer and appointment periods for commencement of treatment. A total of 320 cervical cancer patients from both the radiotherapy clinic and those admitted in the cancer wards were interviewed.
3.5 Inclusion and Exclusion Criteria

All patients attending KNH radiotherapy clinic and medical wards for treatment of cervical cancer. Those included in the study were:

- Patients that were willing to participate in the study (agree to the interview and to access of their medical records)
- To reduce recall bias, the study was limited to those diagnosed two years prior to field work.

Those excluded were:

Patients who were unable to provide information for any reason such as:

- Patient unfamiliar with events that occurred prior to the diagnosis
- Patient who were too sick to communicate.

3.6 Sampling Techniques and Sample Size

Kenyatta National Hospital was purposely selected for this study since it is the main referral hospital in Kenya offering diagnosis, radiotherapy and chemotherapy treatment to cancer patients and mainly serving a large population of patients who are unable to meet treatment costs in private hospitals. Cervical cancer patients attending this hospital are referred from different regions across the country, hence sampling from this group would give a better understanding on some of the barriers to diagnosis of cervical cancer across the country. Considering that the target population was not static, the research employed the formula by Fischer et al (Mugenda, 2003) since it enabled the study to sample the respondents who had been diagnosed with cancer in the last two years.

\[ n = \frac{z^2 pq}{d^2} \]
Where  
\[ z = \text{standard normal deviate usually set at 1.96} \]
\[ n = \text{desired sample size in an infinite population} \]
\[ p = \text{proportion of the characteristic that we are interested in (0.5)} \]
\[ q = (1 - p) = 0.5 \]
\[ d = \text{the degree of accuracy set at 0.05}. \]

Therefore the minimum estimated sample size is

\[
= \frac{1.96 \times 1.96 \times 0.5 \times 0.5}{0.05 \times 0.05} = 384
\]

Since this study has a finite population, an adjustment was done using \[ nf = \frac{n}{1 + (n/N)} \).

Approximately 300 new cases of cervical cancer are seen in Kenyatta National Hospital per month, hence 1800 cases per 6 month period. \[ 384/(1 + (384/1800)) = 316 \). 

### 3.7 Research Instruments

#### 3.7.1 Structured questionnaire:

A structured questionnaire was administered to the participants. The construction of questionnaire used in this study followed review of medical records to determine the stages at diagnosis of cervical cancer patients. The information captured on patient files during their routine visits formed part of the tool. Further questions were formulated from the research questions, specific objectives and conceptual framework designed after the literature review. The questionnaires contained mostly close ended questions, however open ended questions that were probing in nature were designed so as to obtain the more valuable data from the respondents. The open ended questions also allowed for the listing of all possible reasons from the respondents for instance we sought to know
what they would wish the government to do in regards to cervical cancer and they listed several areas that they felt should be addressed by the government. The secondary data for the same patients interviewed were obtained from their files. This was for purposes of documenting morphology as per laboratory test reports in the files, staging of the disease and dates of appointments. The files were obtained from both radiotherapy clinic and the in-patient wards where the patients were going through their treatments. The questionnaire for the patients was administered by the researcher with the help of two research assistants. A unique patient identification number was provided to each patient. The questionnaire, though designed in English was administered in Swahili which was understood well by the participants. Those who were unable to communicate freely in Swahili were allowed to use their native language. The data collection strategy adopted involved utilizing research assistants who understood the language to administer the questionnaire. They interpreted the questions slowly and clearly to the patients in their native language and translated back the responses into English.

3.7.2 Key informant interview schedule:

Key informants were also interviewed to understand their perspective on issues of diagnosis of cervical cancer. They were the healthcare providers attending to these patients, among them were oncologists, radiotherapists, nurses and laboratory technologists.

The schedule was designed following an interview with two key healthcare personnel (a nurse and an oncologist) who interact with cervical cancer patients on regular basis. There was need to capture their views on the subject of this study and to corroborate their
views to those of the patients. Only 30 of the healthcare staff were interviewed and information documented on an interview schedule.

3.8 Variables

The following variables were applicable for this study.

3.8.1 Independent Variables

i. Demographic details: These were age, marital status, religion and residential locality

ii. Socio-economic details: These included education, occupation and occupation

iii. Cultural factors: Fear of stigmatization, beliefs and practices and orientation to alternative medicine

iv. Individual / Personal factors: These included health seeking behavior, attitudes and perceptions, knowledge and awareness level, fear of diagnostic procedure, fear of confirmation of diagnosis and expectations of doctor/patient

v. Health system factors: Availability of diagnostic tests, promptness of referral, proximity to diagnostic centre, accessibility, duration of diagnostic test, cost of diagnosis, medical insurance, personnel training, attitude of staff towards patients

3.8.2 Dependent Variables

i. Early diagnosis

ii. Late diagnosis
3.9 Methods of Data Analysis

Data collected was coded, cleaned and entered into the computer using the Statistical Package for Social Sciences (SPSS), version 16.1. Measures of Central Tendencies were computed and cross tabulations done. The Chi square test was used to measure the level of significance and for the variables that had a value of less than 5, Fisher’s Exact test was used to determine level of significance. Since many factors were interrelated, adjusted odds ratio was used to adjust for known confounding factors. The degree of accuracy was set at 95% confidence interval and p - value of 0.05 or less was considered significant.

Further, the study examined the predictors associated with stage of diagnosis, using logistic regression analysis. The dependent variable was created by recoding the four-stage diagnosis into binary variable coded as ‘1’ = ‘early diagnosis’ and ‘2’ = ‘late diagnosis.’ The independent variables comprised of three sociodemographic and economic variables (marital status, employment status, and educational level). These were employed as control variables for the effects of the knowledge-related factors. The other five independent knowledge-related variables were previous knowledge of cancer, knowledge of signs, knowledge of PAP smear, knowledge on screen type, and appointment waiting period.

3.10 Validity and Reliability

Validity is the strength of our conclusions, inferences or propositions. It is concerned with the success of the study regarding what the researcher set out to measure. Reliability on the other hand is the consistency of the measurement, or the degree to
which an instrument measures the same way each time it is used under the same condition with the same subjects. In short, it is the repeatability of the measurement.

A number of tests were applied to strengthen validity. Pre-testing of questionnaire was done to ensure ambiguous questions were captured and corrected before the study begun. All research assistants were trained on data collection and reporting in order to reduce errors and omissions. This improved on reliability of the data.

3.11 Ethical considerations.

After fulfilling the requirements by the Board of Postgraduate Studies, School of Health Sciences and the Graduate School of Kenyatta University and granted the research letter, clearance for commencement of research work was sought and research permit obtained from the Ministry of Education. The proposal was then submitted to the Board of Kenyatta National Hospital IREC (Institutional Research and Ethics Committee) for ethical approval which was granted. Attached to the questionnaire were consent forms prepared in English but translated in Swahili where necessary. All participants who agreed to participate were required to sign after clearly understanding the role of research work. The research assistants were trained on how to administer the questionnaire and to ensure informed consent documents were read and where possible interpreted to the participants for clarity of information before signing. The study utilized staff of KNH trained in Medical Records and Information as Research assistants since they are familiar with Ethics and Confidentiality of patient information. To further enhance confidentiality, no identifiers like names were documented in the data collection tools and no reference
was made to an individual participant in the reports or presentations derived from this study. Patients who were too ill or in pain were unable to speak hence were excluded from the study.
CHAPTER FOUR: DATA ANALYSIS AND PRESENTATION

4.0 Introduction

This chapter focuses on the results obtained from the study. The study aimed at determining factors correlating with late diagnosis of cervical cancer among patients undergoing treatment at Kenyatta National Hospital. The results are outlined in six main sections: The first two sections describe the profile of respondents which have been grouped under socio-demographic and socio-economic factors. The third section describes the patterns of reporting cervical cancer while the fourth describes the factors surrounding early or late cervical cancer diagnosis. The remaining sections dwell on socio-economic, individual/personal and healthcare organization factors correlating with late diagnosis of cervical cancer.

4.1 Socio-demographic characteristics of cervical cancer patients at KNH

This study involved interviews and review of medical records for 320 cervical cancer patients. The socio-demographic factors include age, marital status, residential locality and religion.

4.1.1 Age of study participants

The study targeted women aged 18 years and above who met the inclusion criteria. The obtained data for age of the patients was grouped into 5-year age-groups during the analysis stage. The youngest patient in the study was aged 22 years while the oldest was aged 89 years hence the range for the study participants was 67 years. The mean age was
48.3 years, mode was 45 years while the median age was 46 years. More specifically there were 8 (2.5%) women below 29 years and 18 (5.5%) women aged above 70 years, indicating there were very few patients on both extreme ends of age. The bulk of the participants 127 (39.7%) were aged between 40-49 years while 70 (21.9%) were aged 50-59 years. Overall, there were older women aged above 40 years (78.7%) than younger women aged below 40 years (21.3%). These results confirm the prevalence of this type of cancer among women in the reproductive age group of 15 to 49 years. The results also corroborate earlier studies where prevalence of cervical cancer is established among women of child bearing age (Parkin DM, Nambooze S. et.al, 2010, Gakidou E, et.al, 2008). Figure 4.1 is a graphic presentation of this scenario.

![Figure 4.1 Age of participants](image-url)
4.1.2 Marital Status of patients

The study also sought to establish the marital status of the study participants. Of the 320 women who participated in this study, 247 (77.2%) were married and 28 (9%) were single; a significant number 37 (12 %) were widowed while 8 (2%) of the women were divorced. Studies show that marital status correlates with health-seeking behavior. Hence the role of marital status in determining stage of cancer diagnosis will be tested at a later stage of this thesis. A graphical presentation of the categories of marital status for the study participants is outlined in figure 4.2.

![Marital Status](image)

*Figure 4.2 Marital status of study participants*

4.1.3 Locality of study participants

Kenyatta National Hospital is the only referral hospital located in Nairobi and its patients are drawn from a wide cross-section of areas. The hospital is also the only one providing full scale diagnosis and treatment equipment for cervical cancer in Kenya. It was
important to establish the locality of the women diagnosed and treated at Kenyatta National Hospital so as to later determine if locality acts as a barrier to early diagnosis. It is worth noting that at the time of collecting and analyzing these data the country was utilizing the geographical boundaries of provinces and so the results for locality have been presented in accordance with the old geographical boundaries.

Broadly, majority 210 (65.6%) of the interviewed patients indicated that they resided in a rural setting. There were 71 (22.2%) patients who resided in areas within or surrounding major towns (urban), while 31 (9.7%) came from a peri-urban locality.

![Figure 4.3 Locality of patients](image)

Locality was also established in terms of the home provinces of the respondents of the study. Evidently, most of the patients were from Central province (34.7%) followed by Eastern Province (20%). This may be attributed to the proximity of some of the areas situated in the two provinces to Kenyatta National hospital. A significant number of patients were from Nyanza province (18.8%). A possible reason for this may be the lack
of specialists and facilities to treat cervical cancer in the Jaramogi Oginga Odinga Referral Hospital. The residential areas of study participants is shown in figure 4.4.

![Number of cases by place of residence]

**Figure 4.4 Residential area of study participants**

### 4.1.4 Religion of study participants

Religious background has been associated with perception and attitude to disease and can play a part in determining health seeking behavior. From the current study, the dominant religion among the study participants was Christian accounting for 96.2% of all the women. Only 6 (1.9%) participants were Muslims and 4 (1.3%) were of Hindu religion. Hence, the study established no much religious variation or diversity among studied
population. Table 4.1 shows the representation of the main religions represented in the study.

### Table 4.1 Religion of study participants

<table>
<thead>
<tr>
<th>Religion</th>
<th>Number (N)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christian</td>
<td>308</td>
<td>96.3</td>
</tr>
<tr>
<td>Muslim</td>
<td>6</td>
<td>1.9</td>
</tr>
<tr>
<td>Hinduism</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>Others</td>
<td>2</td>
<td>0.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>320</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

#### 4.1.5 Treatment for cervical cancer patients at KNH

In view of the fact that the study targeted women who had been diagnosed with cervical cancer, a preponderance of patients 294 (91.9%) were recruited from the radiotherapy unit while a few cases 23 (7.2%) were recruited from the wards where they were undergoing chemotherapy. Most women from the wards were quite ill mostly due to side effects of chemotherapy hence were excluded from the study. This explains the less numbers from the wards. Of the patients undergoing radiotherapy, about 60% of them had already undergone chemotherapy. This indicates that the main mode of treatment provided to the cervical cancer patients in this study was both radiotherapy and chemotherapy. Only a small number of women 3 (0.9%) had been treated through surgery.
4.2 Treatment of cervical cancer cases

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>3 (0.9%)</td>
</tr>
<tr>
<td>Radiation</td>
<td>294 (91.9%)</td>
</tr>
<tr>
<td>Chemotherapy</td>
<td>23 (7.2%)</td>
</tr>
<tr>
<td>Total</td>
<td>320 (100%)</td>
</tr>
</tbody>
</table>

Table 4.2 Treatment of cervical cancer cases

4.2 Socio-economic characteristics of cervical cancer patients at KNH

The study also sought to establish the socio-economic profiles of patients diagnosed and treated for cervical cancer at Kenyatta National Hospital. In this regard, the level of education of the study participants, their occupations and any other source of income were considered.

4.2.1 Level of Education

The findings indicate that majority 162 (50.6%) had attained primary level of education, 66 (20.6%) had attained secondary level education while 14 (4.4%) had college/university level of education. There were 74 (23.1%) women who had never attended school. Hence, nearly half of the respondents had primary education being their highest education level. The role of this factor in determining early or late stage at diagnosis of cervical cancer will be discussed in a later section.
4.2.2 Employment status and occupation

The women were asked to state whether they were formally employed or not. The findings show that majority (75.3%) were unemployed. This group of women who were unemployed were further asked to state their sources of income. Of these women, 58.9% did not have any income while 41.1% had some source of income. In this category 42 (17.4%) stated that they were running businesses like selling of second hand (*mitumba*) clothes, selling fish and vegetables amongst others. A significant number 31 (12.9%), mentioned peasant farming as their source of income. Only 4.2% did farming at a large
scale level. These findings indicate that a lot of the women were underprivileged and may have been vulnerable to various health and welfare risks.

Table 4.3 Socio-economic characteristics of cervical cancer patients at KNH

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number (Frequency)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>79</td>
<td>24.7</td>
</tr>
<tr>
<td>Not Employed</td>
<td>241</td>
<td>75.3</td>
</tr>
<tr>
<td>Total</td>
<td>320</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Income source if unemployed</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large scale Farming</td>
<td>10</td>
<td>4.2</td>
</tr>
<tr>
<td>Peasant farming</td>
<td>31</td>
<td>12.9</td>
</tr>
<tr>
<td>Business</td>
<td>42</td>
<td>17.4</td>
</tr>
<tr>
<td>Fishing</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>House wife</td>
<td>7</td>
<td>2.9</td>
</tr>
<tr>
<td>Others</td>
<td>6</td>
<td>2.5</td>
</tr>
<tr>
<td>No income</td>
<td>142</td>
<td>58.9</td>
</tr>
<tr>
<td>Total</td>
<td>241</td>
<td>100.0</td>
</tr>
</tbody>
</table>

4.2.3 Respondent’s Income

The findings outlined in table 4.3 are further clarified by the respondent’s self reported income status. Nearly 60% of the women indicated having no income while more than 30% reported not having adequate income to meet their needs including health demands. More importantly is the fact that most of the women were in low income earning occupations such as peasant farming and shore fishing. Lack of income was also persistently reported as a factor leading to late presentation to hospital for diagnostic services.
4.3 Patterns of Reporting cervical cancer at Kenyatta National Hospital

The study sought to establish the patterns of reporting cervical cancer at KNH in order to provide a general overview of the types of cancers most frequently reported, the stage at diagnosis, the drivers to diagnosis as well as factors surrounding early or late diagnosis. In order to accurately describe these phenomena, the study relied on self-reporting as well as patient’s records. For every patient interviewed in this study, their records were retrieved and clinical details of cervical cancer abstracted. These include the type of cervical cancer, stage at diagnosis and the treatment the patient had received since diagnosis.

4.3.1 Classification of respondents by type of cancer

Cervical cancers and cervical pre-cancers are classified by how they look under a microscope. There are 2 main types of cervical cancers: squamous cell carcinoma and adenocarcinoma. Squamous Cell Carcinoma (SCC) Not Otherwise Specified (NOS) was the most common histological diagnosis in this study accounting for 280 (89.2%) of the respondents while adenocarcinoma NOS accounted for 6 (1.9%). From the analysis there were very few 3 (0.9%) patients with Squamous cell carcinoma in situ. The rest were SCC Keratinizing 16 (5.1%), SCC large cell keratinizing 8 (2.5%) and carcinoma anaplastic 2 (0.6%). This confirms evidence from other studies (NCR Report, 2006) that about 80% to 90% of cervical cancers are squamous cell carcinomas. Table 4.4 has the details of the morphological types of cervical cancer represented in the study.
Table 4.4 Morphological types of cervical cancer

<table>
<thead>
<tr>
<th>Morphology type</th>
<th>Number</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squamous Cell Carcinoma In Situ</td>
<td>3</td>
<td>0.9%</td>
</tr>
<tr>
<td>Squamous Cell Carcinoma NOS</td>
<td>280</td>
<td>89.2%</td>
</tr>
<tr>
<td>Carcinoma Anaplastic</td>
<td>2</td>
<td>0.6%</td>
</tr>
<tr>
<td>Squamous Cell Carcinoma Keratinising NOS</td>
<td>16</td>
<td>5.1%</td>
</tr>
<tr>
<td>Squamous Cell Carcinoma Large Cell Keratinising</td>
<td>8</td>
<td>2.5%</td>
</tr>
<tr>
<td>Adenocarcinoma NOS</td>
<td>6</td>
<td>1.9%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>320</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Analysis of the locations and progression of the various types of cervical cancer shows that Squamous Cell Carcinomas are from the squamous cells that cover the surface of the exocervix. They most often begin where the exocervix joins the endocervix. Most of the other cervical cancers are adenocarcinomas. Cervical adenocarcinoma develops from the mucus-producing gland cells of the endocervix. Less commonly, cervical cancers have features of both squamous cell carcinomas and adenocarcinomas and are known as adenosquamous carcinomas or mixed carcinomas. The change from cervical pre-cancer to cervical cancer usually takes several years, but it can happen in less than a year. For most women, pre-cancerous cells will go away without any treatment while in some women pre-cancers turn into true (invasive) cancers.

4.3.2 Basis of diagnosis

From the findings of this study, a total of 315 (98.4%) cases were morphologically verified. Of these cases 301 (94%) were confirmed through histology while 14 (1.3%) through cytology. There were 5 (1.6%) cases that were classified under clinical
examination. These cases were indicated by the clinicians as “advanced disease” and so were grouped under stage 4. Interviews with medical officers at Kenyatta National Hospital established that the hospital sends all patients for laboratory investigations where necessary and hence the high number of histological confirmation. The fact that the study focused on cases with confirmed stage also explains the high number of confirmed diagnosis.
4.3.3 Stages at diagnosis of cervical cancer for patients at KNH

Cervical cancer is staged by clinicians mainly through the results of a patient’s physical examination, which includes a complete pelvic (internal) examination of the cervix, uterus, and ovaries. Other procedures and tests are also performed to assess how far the cancer may have spread. The Pap’s smear test is both diagnostic and a screening test and will give a confirmatory result of presence of malignancy and the morphological type. The clinicians after examining the patient, will stage the cancer and classify it from the earliest stage referred to as stage 0 (carcinoma in-situ) to the advanced stage referred to as stage IV. For the purposes of this study, the stages were grouped in five core categories as shown in the graph below (Figure 4.6).

<table>
<thead>
<tr>
<th>Basis of Diagnosis</th>
<th>Number (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clinical investigations</td>
<td>5 (1.6%)</td>
</tr>
<tr>
<td>Cytology</td>
<td>14 (1.3%)</td>
</tr>
<tr>
<td>Histology</td>
<td>301 (94.0%)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>320 (100%)</strong></td>
</tr>
</tbody>
</table>
From the findings there were only 3 (0.9%) women diagnosed when the tumour was still localized at stage 0 (*carcinoma in-situ*). There were 26 (8.1%) women diagnosed at stage I and 126 (39.4%) diagnosed at stage II. The three stages (0, I and II) have been grouped as early stage cancer. A significant number of women 136 (42.5%) were diagnosed at stage III, while 29 (9%) were diagnosed at stage IV or clinically indicated as advanced disease. The two stages III and IV have been grouped as late stage disease. In this study, the early stage cancers (154, 48.3%) were slightly lower than the late stage cancers (169, 52.8%). A study on down-staging of cervical and breast cancer considered similar groupings for early versus late stage disease (Devi, Tang & Corbex, 2007). Early stages of the disease are associated with a favorable prognosis; five-year survival rates for stage I disease are higher than 90%. Women diagnosed with more advanced disease, however, experience a considerably worse prognosis and less than 10% survive stage IV disease (Parkin et al. 2008).
4.3.4 Symptoms experience by participants

Though regular and systematic screening has been found to be the best method of detecting cervical cancer in early stages before they become malignant, it is hardly done in Kenya. Screening services are available in major hospitals at a fee higher than most women can afford. In this study, only 2 (0.6%) women were discovered with cervical cancer during routine screening while the rest were prompted by the symptoms to seek treatment. These included pain and bleeding in absence of sex reported by 127 (39.7%) and pain and bleeding during sex 115 (35.9%). Regular fatigue and pain was reported by 39 (12.2%) women while 36 (11.3%) reported accidental diagnosis while being treated for other ailments. These findings indicate that over 99% of cervical cancer diagnosis is symptom driven.

**Symptomatic drivers of reporting cervical cancer**

![Bar chart showing the distribution of symptomatic drivers.]

**Figure 4.7 Symptomatic drivers of reporting cervical cancer**
4.3.5 Duration of symptoms

The study sought to establish how long respondents had endured symptoms of cervical cancer. Generally, cervical cancer has been described as a disease that brings forth some form of embarrassment to the woman. Given its mode of presentation, women rarely disclose the symptoms to their spouses and may take time to visit the health facility with the complaint. In this study, respondents were asked to indicate the duration they endured the symptoms before visiting the hospital. A significant number 141 (44.1%) reported enduring for 12 to 24 months with the symptoms before seeking healthcare while 90 (28.1%) endured the symptoms for more than 24 months. Those who sought formal health care within 5 to 12 months were 78 (24.4%). Only a small percent went to hospital within the first 5 months of symptom presentation. These findings point to various barriers and considerations patients with this kind of cancer experience. These barriers may also be related to socio-cultural structures and experiences.

Figure 4.8 Duration patient stayed with symptoms before seeking formal healthcare
Further, studies have shown that by the time symptoms of cervical cancer are manifested, the cancer is likely to have advanced from localized stage to invade other areas like the birth canal. It is also worth noting that some of the symptoms suggestive of cervical cancer are also common in other sexually transmitted diseases like *Chlamydia trachomatis* infection. According to Sankaranarayanan (2008), women presenting with these symptoms or with an inflamed cervix which may bleed on contact should be tested for *Chlamydia trachomatis* and treated if appropriate. The fact that cervical cancer symptoms are similar to other sexually transmitted diseases can be an avenue for delay since health personnel are likely to prescribe medication and send the patient home instead of referring them for further investigations.

### 4.4 Factors surrounding cervical cancer diagnosis and treatment

This study was particularly focused on identifying the main factors determining early or late cervical cancer diagnosis and to classify them. Hence, the factors arising from the empirical findings are classified as personal/individual factors, socio-economic factors as well as health organization related factors. This following section presents the personal factors surrounding cervical cancer diagnosis. They include knowledge or awareness of the disease, individual perceptions and belief that hinge on decisions and actions surrounding diagnosis of cervical cancer.

#### 4.4.1 Understanding of cervical cancer among patients at KNH

The study sought to know the level of understanding of the cervical cancer among the women prior to diagnosis. From the findings, majority of the women 73.3% did not know
of the disease while 24.7% had some understanding of the disease. Studies show that knowledge and awareness levels play a part in health-seeking behavior and can determine the kind of action one may take which could either be negative or positive (see among others Gichangi et al., 2003, Gatune and Nyamongo, 2005). The subsequent section will discuss the relationship between knowledge level and stage of disease at diagnosis.

![Knowledge of Cervical Cancer](image)

**Figure 4.9 Knowledge on cancer among women at KNH**

### 4.4.2 Perceptions surrounding cervical cancer diagnosis

The study also sought to document individual perceptions towards cervical cancer with a view of weighting their import on stage at diagnosis. Further, it was established from the respondents that there were varying perceptions by neighbours and the communities in which they lived. Evidently, a good number indicated that communities around them were ignorant of the disease and viewed it as a strange occurrence (62%). It was also established that most communities were ignorant of the nature of cervical cancer and did not discuss much about it. Those among community members who had some information concerning cervical cancer (32%) believed that it was a disease that cannot be treated while others associated it with having many sexual partners (1.3%), curses (2.4%) and HIV/AIDS (1.7%). These findings point to dearth of knowledge among most Kenyan communities on the actual nature of cervical cancer, its causes, diagnosis and treatment.
Table 4.6 Perception surrounding cervical cancer among various communities

<table>
<thead>
<tr>
<th>Perception by neighbours</th>
<th>Cases (n)</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disease that cannot be treated</td>
<td>95</td>
<td>32.0</td>
</tr>
<tr>
<td>Caused by many sexual partners</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>A curse for wrong doing</td>
<td>7</td>
<td>2.4</td>
</tr>
<tr>
<td>A symptom of HIV</td>
<td>5</td>
<td>1.7</td>
</tr>
<tr>
<td>Don’t Know</td>
<td>186</td>
<td>62.6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>297</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

4.4.3 Fears surrounding cervical cancer diagnosis

Due to its nature and spread, cancer is a disease that often instills fear surrounding cost of treatment, side effects arising from the treatment and the perception that it is a death sentence among others.

In this study we sought to establish some of the fears the women experienced around the time of diagnosis of cervical cancer. The financial burden that goes along with cancer was reported as the highest concern by most of the women 132 (45%). Closely related to finances, a significant number of women 83 (28%) reported that their biggest fear was the inability to work and provide for their families once diagnosis had been established. There were 62 (21%) of the women who reported side effects of treatment as their biggest concern while a small number 12 (4%) stated that they were afraid of stigma and discrimination. The implications of these findings is that the financial burden, the treatment procedure and its effects are real concerns for most women seeking diagnosis for symptoms related to cervical cancer.
Figure 4.10 Fears women had around cervical cancer diagnosis

In a qualitative study by Smith et al. (2005), fear of cancer and fear of embarrassment were identified as key factors contributing to delay in patient presentation to a healthcare practitioner for diagnosis and treatment. Another study (Abdullahi et.al 2009) also described fear of pain and denial as common emotions when faced with the prospect of being diagnosed with any life-threatening illness. The last section of this chapter will test the role of fear on late diagnosis of cervical cancer.

4.4.4 Stigma surrounding cervical cancer diagnosis

The study sought to establish if fear of stigma also had a bearing on the testing of cervical cancer. Patients were asked if they had faced any form of stigma or discrimination from members of the family, friends or neighbours in the period surrounding the diagnosis.
Form the findings, 251 (78.4%) responded that they had faced some form of stigma while 69 (21.6%) reported that they had not. Of those who had faced some form of stigma and discrimination, the highest stigma was reported to be from neighbours 98 (30.6%). Stigma from husbands was reported by 73 (22.8%) women, from friends 51 (15.9%) and from family members 30 (9.4%). Only 4 (1.2%) women reported having faced stigma from the church. This coupled with the community’s perception of cervical cancer as incurable may have profound implications in the way individuals report symptoms or seek treatment for cervical cancer.
Table 4.7 Stigma faced by cervical cancer patients at KNH

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highest source of stigma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neighbours</td>
<td>98</td>
<td>38.3</td>
</tr>
<tr>
<td>Husband</td>
<td>73</td>
<td>28.5</td>
</tr>
<tr>
<td>Friends</td>
<td>51</td>
<td>19.9</td>
</tr>
<tr>
<td>Family members</td>
<td>30</td>
<td>11.7</td>
</tr>
<tr>
<td>The church</td>
<td>4</td>
<td>1.6</td>
</tr>
<tr>
<td>Total (N)</td>
<td>256</td>
<td>100.0</td>
</tr>
<tr>
<td>Highest source of support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family members</td>
<td>146</td>
<td>45.6</td>
</tr>
<tr>
<td>The church</td>
<td>83</td>
<td>25.9</td>
</tr>
<tr>
<td>Husband</td>
<td>51</td>
<td>15.9</td>
</tr>
<tr>
<td>Friends</td>
<td>30</td>
<td>9.4</td>
</tr>
<tr>
<td>Neighbours</td>
<td>10</td>
<td>3.1</td>
</tr>
<tr>
<td>Total (N)</td>
<td>320</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Being diagnosed with cancer can be very traumatizing and one needs support both moral and financial. The participants in this study were asked to say from whom they received the most support and results showed that 146 (45.6%) of the women reported that they received the highest support from family members. There were 83 (25.9%) women who reported that their highest form of support was from the church, from their husbands 51 (15.9%), from friends 30 (9.4%) and from their neighbours 10 (3.1%).
4.4.5 Perception of quality of medical care

According to the Health Belief Model, perceptions around the quality of medical care by a patient might impinge seeking for medical help. The study investigated this personal factor and established that majority of the women 136 (42.5%) were optimistic of the available treatment for cervical cancer and believed they would be cured just like any other illness. Most of them 119 (37.2%) however, reported not knowing what to expect of the treatment. They indicated that this being their first time to be treated of the disease, they had no information on treatment outcome. About 30 (9.4%) of the women believed there was no cure for the disease when they were diagnosed, while 15 (4.7%) knew that treatment was very expensive. There were also women who were in shock following the diagnosis 15 (4.7%) and did not know what to expect while some were afraid of side effects from treatment 5 (1.6%).

![Figure 4.12 Perception of medical care available](image-url)
4.4.6 Propelling factors for early cancer diagnosis

This study sought to determine factors associated with the late diagnosis of cervical cancer in order to make recommendations towards ensuring early diagnosis of the disease. It was thus important to establish factors that propelled early diagnosis. It will be recalled that (48%) of all respondents were classified as having been diagnosis early for cervical cancer. Women who were classified as being diagnosed early (Stage 0, I and II) were asked to give their views on early diagnosis and 44.2% attributed early diagnosis to early referral by a health care worker in their district/provincial or private hospital that they first visited. Further, 25% of the respondents reported having been ‘pushed’ by family or friends to go for further medical checkups indicating the important of social networks in an African setting,. About 23% of the patients sought medical attention as soon as they experienced some symptoms. However, as noted before, relying on symptoms for diagnosis should not be recommended owing to the fact that studies have shown that by the time symptoms manifest, the disease is well past the stage of in-situ (most early stage).

4.4.7 Propelling factors for late diagnosis

Factors responsible for late diagnosis of cervical cancer were also investigated. Hence the categories of women diagnosed late were targeted in this case. Those who were diagnosed at advanced stage gave various reasons for late diagnosis. The most being lack of finances to meet the cost of cancer diagnosis 57 (50%). A significant number blamed misdiagnosis 42 (36%) in that health workers gave them medication for reported symptoms instead of referring them for further investigations. There were some women
who blamed visits to the herbalist or use of traditional medicine for their late diagnosis (5%) and those that based it on fear of outcome (4%).

![Reasons given for late diagnosis](image)

**Figure 4.13 Propelling factors for late diagnosis among women diagnosed late**

### 4.4.8 Health seeking behaviour

There are several factors that prevent women from seeking formal health care services even when they have symptoms of disease and as earlier described patients cited finances as the major contributor 57 (50%). Other factors included misdiagnosis from healthcare personnel when they first visited the hospital or being given medication before further investigations are done to ascertain the problem. Use of traditional medicine is still a factor in most parts of the country and this was also cited as contributor to late formal health seeking by some of the patients interviewed.
4.5 Socio-economic correlates of late diagnosis of cervical cancer

This section sought to statistically test the role of different factors that emerged as having a bearing on either early or late diagnosis of cervical cancer. The factors were classified along three lines including socio-economic, individual and health care organization factors. The socio-economic factors considered for further analysis included level of education, income and employment status. The individual factors included previous knowledge of cervical cancer, previous knowledge and experience on screening, previous knowledge on risk factors for cervical cancer, on association of cervical cancer and HPV and on symptoms of cervical cancer. The Health care organization factors included availability of equipment at health facility during first visit, number of visits made to a health facility by a patient, waiting period before treatment commenced and cost of treatment.

The socio-economic factors were therefore subjected to further tests to see the association with stage at diagnosis using the two sub-samples classified on the basis of stage of diagnosis. The chi square test of association and significance was used and results were interpreted as statistically significant if the 95% confidence level was achieved.

4.5.1 Level of education

Education level was cross tabulated with stage of cervical cancer at diagnosis. A Chi-Square ($\chi^2$) = 20.62 (3, N=316, P<.0001) was obtained indicating that education level is significantly associated with stage at diagnosis. A further examination of the results (table 4.8), showed that there were more patients in late stage cervical cancer with lower levels of education than those with higher educational level. According to Helman
cervical cancer is associated with social-economic status and is highest in groups with the least education. Other studies point to the importance of education in influencing regular medical checkup, correct interpretation of symptoms and compliance to treatment regimes. Several studies (Kalyango et.al, 2008, Barnes et.al, 2004) have highlighted the correlation between socioeconomic factors such as education and health seeking behaviour.

**Table 4.8 Education level among cervical cancer patients at KNH**

<table>
<thead>
<tr>
<th>Education levels</th>
<th>Early n (%)</th>
<th>Late n (%)</th>
<th>Total N (%)</th>
<th>( \chi^2 = 20.62 ) (df 3, ( N=316 ), ( P&lt;0.0001 ))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never attended</td>
<td>20 (6.3)</td>
<td>54 (17.1)</td>
<td>74 (23.4)</td>
<td></td>
</tr>
<tr>
<td>Primary level only</td>
<td>83 (26.3)</td>
<td>79 (25.0)</td>
<td>162 (51.3)</td>
<td></td>
</tr>
<tr>
<td>Secondary level only</td>
<td>42 (13.3)</td>
<td>24 (7.6)</td>
<td>66 (20.9)</td>
<td></td>
</tr>
<tr>
<td>College &amp; University level</td>
<td>8 (2.5)</td>
<td>6 (1.9)</td>
<td>14 (4.4)</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>153 (48.4)</strong></td>
<td><strong>163 (51.6)</strong></td>
<td><strong>316 (100)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**4.5.2 Income**

Earlier on, it was reported that most women in the study lacked a steady source of income to rely on and even those with income earned meager amounts. Lack of finances may relate to inability to visit a health facility as reported by majority of women as the main reason for late diagnosis of the disease. The women described their experiences and the difficulties they were faced with after being diagnosed with cancer. These challenges include rejection by family members or spouses as they are seen to be a burden.
4.5.3 Employment status

Unemployment was found to be high among studied cervical cancer patients with 75.3% having no formal employment or any form of employment. Those informally employed were farmers, peasant farmers, business women while others engaged in fishing for livelihood.

4.6 Individual/personal factors correlating with late diagnosis

The study compared selected personal or individual factors with late diagnosis of cervical cancer to establish if there was any significant association.

4.6.1 Previous knowledge of cancer

The results obtained after comparing previous knowledge of cervical cancer with stage of diagnosis show that having some knowledge was key in early diagnosis. There were more 50 (15.6%) with some knowledge on cancer diagnosed at early stage than those diagnosed at late stage 29 (9.1%). Among the women with no knowledge of cervical cancer majority 136 (42.5%) were in the late stage compared to 105 (32.8%) in early stage. Bivariate analysis showed that having no knowledge on cervical cancer was significantly associated with late diagnosis of cervical cancer (Chi-square=9.27 (1, N=320; p=0.0023) as shown on table 4.9.
Table 4.9 Knowledge of cancer versus stage at diagnosis

<table>
<thead>
<tr>
<th>Knowledge on cancer</th>
<th>Early n (%)</th>
<th>Late n (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some knowledge</td>
<td>50 (15.6)</td>
<td>29 (9.1)</td>
<td>79 (24.7)</td>
</tr>
<tr>
<td>No knowledge</td>
<td>105 (32.8)</td>
<td>136 (42.5)</td>
<td>241 (75.3)</td>
</tr>
<tr>
<td>Total</td>
<td>155 (48.4)</td>
<td>165 (51.6)</td>
<td>320 (100)</td>
</tr>
</tbody>
</table>

\[ \chi^2 = 9.27 \quad (df 1) \]

P < 0.0023

These findings are further corroborated by a study conducted to assess knowledge, attitudes, and assumption of cervical cancer by women living in Maroua, Cameroon which showed that most women with chronic cervical cancer had very low prior knowledge on cervical cancer. In this study, only 48 (28%) of 171 women had prior knowledge of cervical cancer compared with 123 (72%) who were uninformed about cervical cancer (Tebeu, Major, Rapiti & Petignat et. al., 2008). The study also showed that knowledge and awareness of the disease is quite low especially in the rural areas.

4.6.2 Previous knowledge and experience on screening

The relationship between stage of diagnosis and knowledge of screening for cervical cancer was also tested. Pap’s smear screening procedure can detect changes in the cervix before cancer develops. It can also find cervical cancer early in its most curable stage. In this study women were asked whether they knew about the screening test prior to diagnosis and a preponderance 266 (83.1%) had no knowledge of the test while only 54 (16.9%) were aware of Pap’s test.
### Table 4.10 Knowledge on screening by stage at diagnosis

<table>
<thead>
<tr>
<th>Knowledge on PAP’s smear test</th>
<th>Early</th>
<th>Late</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n (%)</td>
<td>n (%)</td>
<td>N (%)</td>
</tr>
<tr>
<td>Some knowledge</td>
<td>39 (12.1)</td>
<td>15 (4.7)</td>
<td>54 (16.9)</td>
</tr>
<tr>
<td>No knowledge</td>
<td>116 (36.3)</td>
<td>150 (46.9)</td>
<td>266 (83.1)</td>
</tr>
<tr>
<td>Total</td>
<td>155 (48.4)</td>
<td>165 (51.6)</td>
<td>320 (100.0)</td>
</tr>
</tbody>
</table>

The cross-tabulation outlined on table 4.10 show that of those who had some knowledge on Pap’s smear test, majority were in the early stage category 39 (12.1%) while 15 (4.7%) were in the late stage group. Among those who had no knowledge majority 150 (46.9%) were in the late stage group, while 116 (36.3%) were in the early group. Bivariate analysis showed some significant association between lack of knowledge on screening and stage at diagnosis of cervical cancer (Chi square ($\chi^2$) = 14.71(df 1; p<0.0001)).

Further, with regard to the kind of test undertaken, it was established that those who had ever undergone Pap smear prior to diagnosis were a minority 29 (9.2%) compared to the high number 287 (90.8%) who had not. The patients who had had a Pap smear test were found to be more likely to have been diagnosed early 19 (12.4%) than late 10 (6.1%). Table 4.11 has the details.
Table 4.11 Whether patient had ever done Pap’s Smear test

<table>
<thead>
<tr>
<th>Ever undergone a Pap’s smear test?</th>
<th>Early n (%)</th>
<th>Late n (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>19 (12.4)</td>
<td>10 (6.1)</td>
<td>29 (9.2)</td>
</tr>
<tr>
<td></td>
<td>134 (87.6)</td>
<td>153 (93.9)</td>
<td>287 (90.8)</td>
</tr>
<tr>
<td>Total</td>
<td>153 (100.0)</td>
<td>163 (100.0)</td>
<td>316 (100.0)</td>
</tr>
</tbody>
</table>

Previous studies suggest that lack of knowledge about cervical cancer screening is one of the significant barriers to screening (Abdulahi et al., 2009). About 60% to 80% of all invasive cervical cancers are found in women who have not had a Pap’s smear test within the past 5 years (American Cancer Society, 2007). Studies have shown that African women have very little knowledge or awareness about cervical cancer (Ngoma, 2010) and few understand the role of Pap smear test in preventing the disease. One such study conducted in a semi-rural community in Uganda to determine uptake of reproductive health services in Nsangi community and their implications for cervical cancer screening, found out that most of the women did not know about cervical cancer, what causes it, nor its symptoms and that over 80% of women diagnosed or referred with cervical cancer in Mulago National Referral and Teaching Hospital have advanced disease (Mutyaba et al. 2007). Those who knew about its existence did not seem to understand the causes and hence attributed it to the use of contraceptives and having sex during menstrual period as the cause (Mutyaba et al. 2007).
Cultural notions and attitudes towards screening coupled with lack of awareness may also inhibit uptake of screening. In a survey of attitudes about Papanicolaou testing among Kenyan women, Gatune et.al (2005) pointed that participants did not recognize the rationale for early detection, opining, “if you are not in pain, why [do] you need a test?” and that “even if we went for such a test, we do not want to be told that we have cancer.” The benefits of screening have been highlighted in a study done by Huchko et al (2011) in Kisumu-Kenya that involved screening of women receiving HIV care where several women with precancerous lesions were detected early and treated.

4.6.3 Previous knowledge on risk factors associated with cervical cancer

There are several risk factors for cervical cancer that have been documented, notable among them being Human Papilloma Virus (HPV) infection that is sexually transmitted and is known to cause about 80% of cervical carcinomas. Other risk factors include tobacco and alcohol consumption. In this study, patients were asked to name any one risk factor to cervical cancer that they knew. Table 4.12 on risk factors section indicate that very few had some ideas on some of the known risk factors for cervical cancer. Responses included infections 11 (3.6%), multiple sexual partners 5 (1.6%) and tobacco use (1.3%). A significant number 279 (91.5%) had no information on risk factors for cervical cancer and 7 (2.3%) believed witchcraft was the cause. A comparison between knowledge of risk factors and stage of cervical cancer diagnosis did not yield a significant relationship. However, knowledge on risk factors to cervical cancer is important in supporting preventive mechanisms for this type of cancer.
4.6.4 Previous knowledge on HPV virus and its association with cervical cancer

The women were asked if they had ever heard of Human Papilloma Virus (HPV) which is a known cause of cervical cancer. The findings showed a high number 313 (97.8%) of the participants had never heard of HPV and only 7 (2.2%) patients had heard of the virus. Out of the 7 patients that knew HPV, 5 (71.4%) associated it with cancer while 2 (28.6%) did not have factual information about the virus. There was no statistical significance between knowledge of HPV and stage at diagnosis.

The association between human papilloma virus (HPV), especially 16 and 18 sub-types and Invasive Cervical Cancer (ICC) is now well established (IARC, 2007). Invasive Cervical Cancer has been recognized for a long time as being associated with HIV infection and has been classified as AIDS-defining malignancy (defines the onset of AIDS in HIV-positive individuals). Women infected with HIV have an increased risk of also being HPV-infected and consequently are at higher risk for cervical cancer (Schultz, Boshoff, Weiss, 1996). However, this study did not study the association of cervical cancer with HIV/AIDS as it was more concerned with factors of early and late diagnosis rather than causative factors of this kind of cancer.

4.6.5 Previous knowledge on symptoms

The study also tested the relationship between knowledge on symptoms and time of diagnosis of cervical cancer. It had been established that a high number 223 (72.4%) of women were not aware of signs and symptoms of cervical cancer prior to diagnosis (table
4.12). The chi square test of the association between knowledge of symptoms and stage at diagnosis shows that there was no significant association between the two factors.

Other studies point to a positive and sometimes inverse relationship between understanding the symptoms of a disease and reporting to a health facility for testing. A study by Wringe et.al (2008) on uptake of Voluntary Counseling and Testing shows that most people upon experiencing symptoms akin to HIV infection live with them for long periods before seeking a HIV test due to the interpretation of what a positive test would entail and the false belief that HIV infection is a death sentence.

The table below shows the level of knowledge on some of the commonly known cervical cancer symptoms.
Table 4.12 Awareness of Risk factors for cervical cancer

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Stage at Diagnosis</th>
<th>Overall n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Early n (%)</td>
<td>Late n (%)</td>
</tr>
<tr>
<td>Awareness of Risk factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn’t know</td>
<td>131 (90.3)</td>
<td>148 (92.5)</td>
</tr>
<tr>
<td>Witchcraft</td>
<td>3 (2.1)</td>
<td>4 (2.5)</td>
</tr>
<tr>
<td>Multiple sexual partners</td>
<td>3 (2.1)</td>
<td>2 (1.3)</td>
</tr>
<tr>
<td>Tobacco intake</td>
<td>2 (1.4)</td>
<td>1 (0.6)</td>
</tr>
<tr>
<td>Infections /HIV</td>
<td>6 (4.1)</td>
<td>5 (3.1)</td>
</tr>
<tr>
<td><strong>Total N (%)</strong></td>
<td><strong>145 (100.0)</strong></td>
<td><strong>160 (100.0)</strong></td>
</tr>
<tr>
<td>Awareness of HPV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (2.6)</td>
<td>3 (1.8)</td>
</tr>
<tr>
<td>No</td>
<td>151 (97.4)</td>
<td>162 (98.2)</td>
</tr>
<tr>
<td><strong>Total N (%)</strong></td>
<td><strong>155 (100.0)</strong></td>
<td><strong>165 (100.0)</strong></td>
</tr>
<tr>
<td>Awareness of Symptoms of Cervical cancer</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Didn’t know</td>
<td>102 (69.4)</td>
<td>121 (75.2)</td>
</tr>
<tr>
<td>Pain during sex</td>
<td>11 (7.5)</td>
<td>11 (6.8)</td>
</tr>
<tr>
<td>Bleeding after sex (Post coital bleeding)</td>
<td>9 (6.1)</td>
<td>6 (3.7)</td>
</tr>
<tr>
<td>Discharge from the vagina</td>
<td>19 (12.9)</td>
<td>20 (12.4)</td>
</tr>
<tr>
<td>Others</td>
<td>6 (4.1)</td>
<td>3 (1.9)</td>
</tr>
<tr>
<td><strong>Total N (%)</strong></td>
<td><strong>147 (100.0)</strong></td>
<td><strong>161 (100.0)</strong></td>
</tr>
</tbody>
</table>
4.7 Health care organization factors associated with late diagnosis

The study was also particularly interested in investigating health care organization factors leading to early or late diagnosis of cervical cancer. The following section draws mainly from interviews undertaken with health care providers and from opinions expressed by patients on the structure health facilities to diagnose and treat cervical cancer. The section is mainly descriptive with a few instances of chi square testing.

4.7.1 Facilities where patient first sought health care services

The study investigated the type of health facility where patients first sought healthcare services when they experienced symptoms of cervical cancer. This was for purposes of understanding the availability of services offered to cancer patients and their implications on early or late diagnosis. From figure 4.16, it was established that most of the facilities where patients first sought medical attention may not have been sufficiently equipped to test or diagnose cervical cancer.

The KNH is the only hospital with the combination of equipment to make a clear diagnosis for this type of cancer. The findings point to at least 72% of the respondents having sought help from the local district/provincial hospital. Usually, before cases are referred to KNH, it may be that a patient has visit the district hospital for a number of times and this may lead to delay in the detection of an illness at the referral hospital. A further 36% of the patients first sought help at a private clinic near home area or a local dispensary. Most of such facilities may not have the equipment or qualified personnel to detect cervical cancer yet they may not immediately refer the patient to KNH thus
delaying the timely diagnosis of the disease. Thus, a large number of the cervical cancer patients that visited Kenyatta National Hospital were referrals and hence could explain the possible reasons for the advancement of disease.

It is noted that a further 4% of the women sought help from herbalist who are mostly ill equipped to detect or treat such complicated ailments. Herbalists and practitioners of alternative complementary medicine are also known to discourage utilization of mainstream health care further delaying the correct diagnosis of a patient. A study by Davis et.al (2006) on use of alternative complementary medicine in the United States showed that there was significant delay in cancer treatment that was associated with use of complementary medicine.

![Facility where patient first visited](image)

*Figure 4.14 Facilities where patient made first visits*

**4.7.2 Number of visits made to the health facilities before referral**

Cancer is a disease that invades into the organs of the body causing damage and in the end become difficult to treat. It therefore requires urgent attention for effective
management. The delay to diagnose cancer early leads to the disease progressing to late stage. This delay can also occur when the health facility is unable to diagnose cancer on the first visit or refer the patient to a more equipped hospital.

![Number of times patient visited health facilities before referral](image)

**Figure 4.15 Number of times patient visited health facility before referral**

In order to establish the actual patterns of seeking help before the final diagnosis of cervical cancer, patients were asked to state the number of times they visited a medical centre before referral to KNH. From the findings, most of the women visited the health facility twice before referral to Kenyatta National Hospital. 51 (16.4%) of them visited the health facility once and 70 (22.5%) made three to four visits. A small number 15 (4.8%) visited more than five times. This further show that even in facilities that do not have the equipment or the personnel to detect cervical cancer, most patients still spend some amount of time seeking help causing a delay in their correct diagnosis. In Lagos, delay by primary health care providers in referring cases of cervical cancer was found to be an important cause of women presenting with late-stage disease (Anorlu et.al, 2004). It took a mean of 9.35 ± 12.9 months for primary health care providers to diagnose and refer women with cervical cancer to a tertiary hospital for management (Anorlu RI et.al.
A review by Mitchell et al. (2008) showed that healthcare provider delay related to initial misdiagnosis and insufficient examination by the practitioner, was the most common factor associated with delay in referral.

The challenges expressed by the patients in regard to health system caused delays in the diagnosis of cervical cancer were corroborated by the key informants in this study mainly drawn from the KNH. The key informants confirmed that many of the patients who are referred to the hospital present when the disease is at advanced stages and when not much success can be achieved from treatment. Further, from interviews with the 30 health care personnel working within the cancer units and wards, it was established that patients reported late for diagnosis due to lack of diagnostic facilities in the district hospitals (73.7%), lack of screening programs (52.6%) and poor referral systems in the district hospitals (36.8%).

![Figure 4.16 Key informants’ opinions on reasons for late presentation](image-url)
4.7.3 Waiting period at KNH before commencement of treatment

The study also sought to document if there were any further delay on diagnosis once patients were received and attended to at KNH. Given that KNH is the only government hospital with radiotherapy equipment, it receives many referrals from all over the country. It was established by way of interviews with the health care providers at the hospital that when patients visit the hospital whether by referral or not, they are first seen by the clinicians (doctors). The clinicians/doctors then send them to the laboratory section where several tests are carried out. If cancer is suspected, a specimen is taken for either cytology or histology. At this point, they may also be required to do imaging (x-rays) tests depending on assessment by the doctors. Not all the patients however take up these tests on the first visit as some go back home to look for finances. The results from the laboratory take a period of two to three weeks and may be repeated once or three times depending on their clarity and consistence with reported symptoms prolonging this period to more than a month.

With the results out, cancer patients are referred to the radiotherapy unit to begin treatment and some are sent to the wards and admitted for chemotherapy (treatment using different drugs administered through the vein). Owing to the large number of patients and the limitation of the facility, scheduling of appointments is done for commencement of treatment according to stage of the cancer, severity of symptoms and on first come first treated basis. We asked our participants how long their appointment periods were. Only 8 (2%) were scheduled to begin treatment within two weeks after diagnosis and 75 (23%) were scheduled for treatment within one month. The findings showed that 127 (40)
waited up to two months to begin treatment and 110 (35%) waited up to four months (see figure 4.19).

![Waiting period before commencement of treatment at the referral hospital](image)

**Figure 4.17 The waiting period before commencement of treatment at KNH**

The study subjected appointment period to further tests which showed statistically significant relationship between the appointment period and stage at cancer diagnosis as shown in table 4.13 ($P = 0.0115$).
Table 4.13 Appointment period and stage at diagnosis of cancer

<table>
<thead>
<tr>
<th>Appointment period</th>
<th>Early n (%)</th>
<th>Late n (%)</th>
<th>Total N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>One to Two weeks</td>
<td>3 (0.9)</td>
<td>5 (1.6)</td>
<td>8 (2.5)</td>
</tr>
<tr>
<td>Three weeks to One month</td>
<td>37 (11.6)</td>
<td>38 (11.9)</td>
<td>75 (23.4)</td>
</tr>
<tr>
<td>One month to Two months</td>
<td>74 (23.1)</td>
<td>53 (16.6)</td>
<td>127 (39.7)</td>
</tr>
<tr>
<td>Three months to Four months</td>
<td>41 (12.8)</td>
<td>69 (21.6)</td>
<td>110 (34.4)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>155 (48.4)</strong></td>
<td><strong>165 (51.6)</strong></td>
<td><strong>320 (100.0)</strong></td>
</tr>
</tbody>
</table>

Fisher's Exact Test

<table>
<thead>
<tr>
<th>Table Probability (P)</th>
<th>1.400E-05</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pr &lt;= P</td>
<td>0.0115</td>
</tr>
</tbody>
</table>

Sample Size = 320

These findings imply that delay in diagnosis can also occur at KNH due to long appointment periods. The resources available for instance equipment, personnel are obviously not enough to cater promptly for all those seeking diagnostics and treatment services at the hospital.

Other factors that may complicate the diagnosis and treatment of cervical cancer have to do with logistic arrangements that patients have to make. After reporting on the appointment date the patient is expected to pay for the treatment (radiation therapy) and to find a place for accommodation given that this is often an out-patient service. Those who do not have family members or friends to accommodate them often face many difficulties. Some spend the nights on the corridors at the hospital. If chemotherapy treatment is recommended, then the patient has to be admitted as this is given only to in-patients. Before admission, the patient is required to buy the drugs prescribed by the
doctor, which may be a combination of different drugs and for several doses. These drugs are expensive and hence some patients do not go back for this treatment.

### 4.7.4 Cost of treatment

To establish if cost was a critical factor for diagnosis and treatment, patients were asked to state their opinion on the amounts charged for these two services. The findings show that cost of treatment can be an impending factor to individuals seeking healthcare and this was expressed by 93% of the women who thought the treatment of cancer was very expensive even at the KNH.

![Cost of treatment for cervical cancer](image)

*Figure 4.18 Cost of treatment for cervical cancer*

More specifically, for women who were diagnosed late, the factors attributed for this included financial burden as the single most important factor. The fact that women lacked knowledge on the disease was also cited as a contributor to late diagnosis.
4.8 A summary of factors associated with late diagnosis of cervical cancer among patients at KNH

The socio-demographic factors were subjected to further tests to determine if they were associated with early or late diagnosis. The age at diagnosis was found not to be a significant determinant to early or late stage diagnosis $\chi^2 = 0.285$.

On residential area the study attempted to find out if living in a rural or urban locality had an impact on stage. The chi square value on locality ($\chi^2 = 0.85$) did not show any relation with stage at diagnosis. Similarly other demographic factors like marital status and religion were found not to be significantly associated with early or late stage diagnosis. This is similar to findings in the colorectal study which found little evidence that age, gender or socio-economic status had an effect on patient delay (Mitchell et al 2008).

On socio-economic factors, education level was found to be significantly associated with stage at diagnosis $\chi^2 = 0.058$ indicating that there were more patients in late stage with lower levels of education than those with higher educational level. There was no relation between employment and stage at diagnosis, $\chi^2 = 0.346$ hence it did not matter whether the patient was employed or not.

The number of times the patient visited the hospital was found to have an association with stage at diagnosis $\chi^2 = 0.027$. Having insurance had an association with stage of disease $\chi^2 = 0.014$. The patients with insurance were more likely to report early hence were more likely to be diagnosed at an early stage. Stigma and discrimination from family was found to be significantly associated with stage at diagnosis $\chi^2 = 0.0002$. 
4.9 Multivariate analyses of predictors of late diagnoses of cervical cancer

In the preceding sections, univariate and bivariate analyses were employed to test the associations related to cervical cancer late diagnosis. This section employs logistic regression analyses to examine which among the socio-economic, demographic, and knowledge factors are associated with late diagnosis. The findings of the logistic regression analyses are shown on Table 4.14.

**Table 4.14 Logit Model for predictors of late diagnosis of cervical cancer**

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Parameter Estimates</th>
<th>Std. Error</th>
<th>( \chi^2 )</th>
<th>DF</th>
<th>p-value</th>
<th>Odds Ratio</th>
<th>95 % CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>-2.222</td>
<td>1.363</td>
<td>2.655</td>
<td>1</td>
<td>0.103</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Marital status</td>
<td>0.014</td>
<td>0.177</td>
<td>0.006</td>
<td>1</td>
<td>0.935</td>
<td>1.014</td>
<td>0.717 1.435</td>
</tr>
<tr>
<td>Employment status</td>
<td>-0.074</td>
<td>0.333</td>
<td>0.049</td>
<td>1</td>
<td>0.823</td>
<td>0.928</td>
<td>0.483 1.784</td>
</tr>
<tr>
<td>Education level</td>
<td>-0.540</td>
<td>0.198</td>
<td>7.454</td>
<td>1</td>
<td>0.006**</td>
<td>0.583</td>
<td>0.396 0.859</td>
</tr>
<tr>
<td>Previous Knowledge of Cancer</td>
<td>0.680</td>
<td>0.298</td>
<td>5.222</td>
<td>1</td>
<td>0.0223*</td>
<td>1.974</td>
<td>1.102 3.538</td>
</tr>
<tr>
<td>Knowledge of signs</td>
<td>0.081</td>
<td>0.112</td>
<td>0.527</td>
<td>1</td>
<td>0.4677</td>
<td>1.085</td>
<td>0.871 1.352</td>
</tr>
<tr>
<td>Heard about PAP Smear</td>
<td>1.074</td>
<td>0.385</td>
<td>7.772</td>
<td>1</td>
<td>0.0053**</td>
<td>2.926</td>
<td>1.376 6.226</td>
</tr>
<tr>
<td>Knowledge on screening</td>
<td>0.351</td>
<td>0.273</td>
<td>1.652</td>
<td>1</td>
<td>0.198</td>
<td>1.421</td>
<td>0.832 2.429</td>
</tr>
<tr>
<td>Appointment Period</td>
<td>-0.073</td>
<td>0.179</td>
<td>0.168</td>
<td>1</td>
<td>0.682</td>
<td>0.929</td>
<td>0.654 1.320</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Chi-sq.</th>
<th>DF</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Likelihood Ratio</td>
<td>30.1713</td>
<td>8</td>
<td>0.0002***</td>
</tr>
<tr>
<td>Wald</td>
<td>25.9449</td>
<td>8</td>
<td>0.0011**</td>
</tr>
</tbody>
</table>

*p<.05, **p<.01, ***p<.001

Logistic regression model shows a number of significant predictors that explain reasons for late diagnosis of cervical cancer. Among the explanatory variables were three socio-economic and demographic variables which were employed as control variables and five knowledge factors. The analysis shows that three variables were statistically significant. These are educational level, previous knowledge of cancer and previous knowledge on Pap smear test. Results from the logit model show that higher education attainment was
associated with 0.58 lower odds of late diagnosis of cervical cancer. In addition, having no previous knowledge of cancer was associated with 1.97 higher odds of late diagnosis among the respondents. Those respondents who had not heard about PAP smear had 2.93 lower odds of late diagnosis of cervical cancer. These results corroborate with findings from other studies that showed that high level of illiteracy among women is responsible for late diagnosis of cervical cancer (Ngoma, 2010, Gyenwali et.al 2012). As seen in previous studies having no knowledge on cervical cancer screening means that one has lower chances of utilizing the screening tests even when available which is a contributor to late diagnosis of cervical cancer (Abdulahi et al., 2009).
CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions and Implications of the Study

Cervical cancer is still a major public health problem in Kenya. Women play a major role in society. This disease is higher in women at their prime age when they are still very productive in society. This descriptive survey of cervical cancer patients illustrated the impediments to early diagnosis of cervical cancer in Kenya. Cervical cancer patients were interviewed to have an understanding of barriers to early diagnosis. Key informants provided their views on reasons for late diagnosis. This method yielded barriers that coalesced around two core categories: The patient delays which primarily consisted of socio-cultural and socio-economic factors, individual factors, knowledge or awareness of cervical cancer and health system factors. This study explored the level of knowledge on screening for cervical cancer among patients before they were diagnosed of the condition and also its signs and symptoms.

Knowledge on cancer in Africa is very scanty (Ngoma, 2006). In this study knowledge was seen as a prominent factor in late diagnosis of cancer. A high percentage of women (75.3%) did not know about cervical cancer prior to diagnosis. On risk factors for cervical cancer 91.5% were not aware of key risk factors and 72.4% were not aware of signs and symptoms of cervical cancer while 87.5% believed it was not treatable. On screening for cervical cancer, 83.1% had never heard of Pap smear while 90.8% had never done a Pap’s test in their lifetime. The fact that most of the women came from rural areas could have been one of the reasons why there was a high number that didn’t
know about cervical cancer. The Kenya Demographic Health Survey (Kenya National Bureau of Statistics & ICF Macro, 2010) showed that about twice as many women and men in rural areas have no education at all compared with those in urban areas. The findings further demonstrated that education is a key determinant of the lifestyle and status an individual enjoys in a society. Glenngard and Maina (2007), argues that resources for health are scarce, and the disease burden is high in the country, just as in other countries in the region.

Several studies have consistently shown that educational attainment has a strong effect on health behaviours and attitudes. A study carried out in Kenya on knowledge of cervical cancer by health professionals showed that only 52% of women knew about cervical cancer and 32% knew about Pap smear testing (Gichangi et.al 2003). It is unfortunate that there is lack of awareness about this disease despite having several channels such as the media and women groups where information can be channeled to provide adequate education. This study showed that there was generally lack of awareness of the disease among the women. Previous studies have shown that screening and treatment of precancerous lesions can considerably control the increase in incidence of cervical cancer (Kanavos, 2006) and that lack of awareness about screening is among the bottlenecks to effective diagnosis of cervical cancer. A report on cervical cancer screening suggests that about 60% to 80% of all invasive cervical cancers are found in women who have not had a Pap test within the past 5 years (American Cancer Society, 2007). The key to early diagnosis therefore is increased awareness of the disease and screening.
The manner in which individuals interpret signs and symptoms of a disease has been shown to influence health-seeking behaviour in a wide range of illnesses including cancer. It has been suggested that symptom recognition accounts for at least 60% of the total delay in cancer treatment in women with breast and gynaecological cancers (American Cancer Society, 2007). Symptom misattribution is another factor that contributes to delayed diagnosis. People who do not identify their symptoms as possible symptoms of cancer are more likely to delay going to the doctor.

Socio demographic variables such as age, place of residence were not seen to be closely related to stage at diagnosis of cervical cancer. A study on colorectal cancer found little evidence that age, gender or socio-economic status had an effect on patient delay (Mitchell et al 2008). However, lack of education was found to be associated with late diagnosis of cervical cancer and as education level of the woman increases, there was likelihood that the cancer would be diagnosed early. Similar findings were reported by Helman (2000) that concluded that cervical cancer is often associated with social-economic status and is highest in groups with the least education. Also, unemployment was found to be high among the cervical cancer patients with 75.3% having no formal employment or any form of regular income. Those unemployed were large scale farmers, peasant farmers, business women or in fishing industry. Poverty has been reported to be a factor in cervical cancer diagnosis, with financial challenges being the main reason for delay in seeking health care.
Cancer is a disease that is known to be painful, devastating and can lead to fatality if not carefully and timely addressed. It is associated with pain, suffering and death. Several studies have shown that fear and anxiety can impact on patient delay (Brouha et al.2005). When faced with signs and symptoms of the disease some women may take time to visit a health facility due to fear. Family and friends play a significant role in provision of healthcare services to a sick individual and in as much as they can motivate one to seek treatment, they can also be a source of stigma and discrimination during advanced stages of cancer. Stigma and discrimination was reported as one of the fears after diagnosis among women.

Factors relating to health systems are often ignored with most studies focusing mainly on patient delay. Health system delays arise from accessibility and availability of appropriate health care services such as diagnostic and treatment services. The level five hospitals that are closer to the people lack appropriate equipment and materials for both diagnosis and treatment of cancer. This is compounded by personnel issues. In Kenya there are currently less than 15 medical and radio-oncologists in the country; the specialty responsible for cancer treatment and all are stationed in the capital city, Nairobi. This therefore calls for the need to train more specialists and establish regional treatment cancer centres.

The delays arising from failure to refer patients immediately for further diagnostic tests, the waiting period for tests to be done at the referral hospital and the appointment period for commencement of treatment after a diagnosis is made, are some of the factors that can
cause delay in diagnosis of cervical cancer. Many patients first seek health care at the nearest hospital due to lack of resources to travel long distances. It is unfortunate that these facilities are not well equipped to undertake effective laboratory diagnostics such as cytology, histology or radiological services like imaging. In this study, 71.8% of patients sought treatment first at the nearest district or provincial hospital while only 20.1% and 5.2% sought treatment at private and local dispensary respectively. In their study, Mitchell (Mitchelle et.al 2008) found out that healthcare provider delay related to initial misdiagnosis and insufficient examination by the practitioner.

Failure to refer patient early for further investigation was found to significantly influence delay in several studies. A study of women diagnosed with ovarian cancer reported that general practitioners (GPs) did not investigate their symptoms thoroughly or alternatively attributed their symptoms to a non-cancer cause and treated it accordingly (Evans et.al 2007). In another study of 132 women with ovarian cancer, over 60% experienced difficulties with diagnosis and over a third visited their GP with symptoms between three and five times. Almost two-thirds of the women expressed a concern that the GPs had not taken their issues seriously. (Target study, 2009 www.targetovarian.org.uk).

In the referral hospital where facilities for cancer diagnosis and treatment are inadequate, delays were noted at the period of laboratory investigations and at appointment period for commencement of treatment. All patients are subjected to testing processes for confirmation of malignancy before management of the disease begins. The time taken from when the specimens are collected to the time results are availed was another avenue
for delay. In some instances the results were not clear hence a repeat of the test had to be done generating even more delays.

Of the healthcare personnel interviewed in this study, 73.7% blamed the lack of diagnostic facilities at the district hospitals to late presentation among cervical cancer patients. 52.6% of them described the lack of screening facilities as major cause of late presentation while poor referral system in the district hospitals was cited by 36.8% of the health personnel.

Despite the many barriers to early diagnosis, cervical cancer can be controlled or prevented by applying low cost methods which studies have shown to have been effective in other countries. Relatively simple technologies can be used by healthcare providers to screen women for precancerous conditions and administer treatment early. The visual inspection with acetic acid (VIA) and lugors test are the most appropriate to overcome issues of access and have been proposed as an alternative to Pap smear screening in developing countries (Perkins, Langrish et.al. 2010). Feature like low cost, simple administration, immediate availability of results and accuracy are the characteristics of VIA test hence women are able to undertake the test, get the results and even treatment if available on the same day. These approaches have the potential to save more lives at lower cost than traditional approaches using Pap smears.

Public education therefore would lead to increased awareness of cervical cancer. Combined with screening and availability of treatment for early stages of cervical cancer,
it can have a positive effect in reducing morbidity and mortality from the disease. Health care professionals working in primary level must be involved in education process since they play a key role in ensuring that women are referred early for further investigations and treatment. It is also essential to have proper mechanisms for communication and feedback between the primary and secondary levels of care, thus track if a patient has presented for and received care.

Early diagnosis of cervical cancer impacts significantly on treatment. As with all cancers, the best way to improve the survival rate is early diagnosis and treatment. Although there are several factors likely to be implicated in cancer patients’ survival rate, late or missed diagnosis is a major contributor. The fact that there are no organized screening facilities at the community level, poor health system facilities, lack of awareness both for patient and health care staff, contributes largely to this. It is therefore important to know the factors of late presentation and diagnosis with the hope that these factors once identified could be corrected towards early diagnosis. Identification of patient socio-economic/socio-demographics and health behaviors associated with delay may help healthcare professionals and policy makers to design interventions that effectively target at-risk populations.

This study found out that the level of awareness on the screening methods and more specifically the PAP’s smear was very low. Higher awareness on screening methods of cervical cancer is a factor that influences early presentation. In addition, few women were
aware of the risk factors for cervical cancer such as HPV hence contributing to late presentation.

The perception of the community on cervical cancer is that it cannot be treated and few associate the disease with many casual sex partners. Stigma and discrimination of the people diagnosed with cervical cancer was found not to be a significant challenge and does not excite fears after diagnosis. The main fears of the patients after diagnosis were found to be side effects of treatment and the cost of treatment. Other studies have however sited higher levels of stigmatization of women with cervical cancer hence discussion about the disease remains limited. Furthermore most women do not discuss this disease with their spouses and only talk to a health professional about it. In this study some women reported situations where their spouses left them because of the disease. Not only do women need education, men too need to be educated about cervical cancer so that they may provide the necessary support to their wives if faced with the disease.

Traditional African beliefs and attitudes towards health may also prevent women from seeking screening services. Women tend to visit hospitals only when they are very sick and unable to carry on with their daily chores. Finances are a major factor and so paying for screening services is considered a luxury rather than a necessity.
5.2 Recommendations Arising from the Study

This study reveals a generally late diagnosis of cervical cancer among women hence the likelihood that intervention is being done when the cancer is already advanced. The level of education of the women was found to influence the decision to present early in the hospital for diagnosis of cancer. Knowledge on screening methods like Pap smear test were also seen to influence early diagnosis of cervical. Supporting health education for women has been shown to increase the likelihood of early presentation. To reduce late stage presentation of cervical cancer efforts must be increased to promote early detection within our communities. With heightened education, outreach, and screening services for cervical cancer, Kenyan women will gain the necessary information and resources to make positive decisions for their health.

This study recommends that well organized screening programmes be established within each county especially in the rural areas. The programme may be integrated with ongoing services. The programme should take into consideration issues of accessibility, affordability, availability and accountability. Barriers to access of care include physical location or distance travelled and access to information so as to make informed decisions. The government must ensure equitable access and affordable comprehensive cervical cancer prevention so as to reduce the high incidence and mortality in the country.

Training of health care workers will be essential in terms of technical skills and also provision of information to patients given that the tests are sensitive to our cultural backgrounds and require adequate information to be provided to the patient to make them
comfortable. Availability of treatment for precancerous lesions and effective referral systems will be very essential.

Approaches to improving access to care include such diverse issues as strengthening health systems, as well as continuing education of existing healthcare providers in a broad variety of professions. It is important for the country to have at least one focal point for comprehensive cancer control – i.e. a cancer center – which takes responsibility for the development and conduct of training programs as well as the organization of cancer services in the context of the overall health service structure, including the implementation of early diagnosis, treatment and palliative care. An act of parliament that stipulates establishment of a National Cancer Institute is now in place. It is envisaged that the institute will provide services from educational awareness, diagnosis and treatment to palliative care while focusing on decentralization so that these services are more accessible and affordable. If the Ministry of Health ensures implementation of this act it would be a good initiative towards combating the cancer burden in Kenya.

5.3 Further Research in the Area

This study was delimited to women who had already been diagnosed with cancer. It will be important to undertake a KAP (Knowledge Attitudes and Practices) study at the community level targeting all women and not necessarily those diagnosed with the disease. There is need to understand the reasons why most women do not go for regular checkups. Further research should also be done to understand why some women seek alternative medical care.
Further studies should include men to understand their awareness of the disease and understanding of HPV virus as a cause of cervical cancer. In addition, men provide the much needed support to their spouses when diagnosed with the disease.

There is also need for a detailed study on treatment regimes and response to treatment among women with cervical cancer. Such a study will go a long way in revealing if the same factors impeding diagnosis apply in impeding treatment. Further, there is need to carry out studies targeting diagnosis and treatment of other types of cancers such as breast, ovarian and uterine which mostly affect women.

Finally, the potential for integrating cervical cancer education and screening services within the existing HIV Testing and Counseling Centres (HTCs) should be investigated with a view to establish how feasible it would be.
REFERENCES


APPENDICES

Appendix 1 PATIENT CONSENT

Dear participant,

This is an academic research done for the award of a master’s degree in Public Health of Kenyatta University. This study is being done not only for this award but also because cervical cancer is one of the major cancers affecting women in our country today. The study is on perceptions and attitudes influencing early diagnosis and management of cervical cancer. Kindly answer the questions honestly. Your name will not be written on this document. The information you give us will be treated with strict confidentiality. We will use the results to inform the public on some of the factors attributed to late diagnosis and also advice the management on the recommendations made by this study.

You will not be coerced to participate on this study, it should be voluntary. If you refuse to participate it is your right and you will not be denied the standard of care. If you accept to participate, I ask you to kindly sign on this document. I will conduct an interview with you which will take about 20 minutes.

I have read and understood the information on this consent document. The decision to participate is voluntary.

Participants signature …………………………………………………………………..
Appendix 2 LOCATION OF STUDY SITE

Map of Kenya showing the position of Nairobi and the Kenyatta National Hospital.

Map of Kenya

Appendix 3 ETHICAL CLEARANCE

KENYATTA NATIONAL HOSPITAL
Hospital Rd. along, Ngong Rd.
P.O. Box 20723, Nairobi.
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP*, Nairobi.
Email: KNHplan@KenHealthnet.org
12th November 2008

Ref: KNH/UON-ERC/ A/108

Anne Rugutt-Korir
Dept. of Public Health
Kenyatta University

Dear Anne

Research Proposal: “Barriers to Early Diagnosis of Cervical Cancer among patients presenting at Kenyatta National Hospital” (P230/8/2008)

This is to inform you that the Kenyatta National Hospital Ethics and Research Committee has approved your above revised research proposal for the period 12th November 2008 –11th November 2009.

You will be required to request for a renewal of the approval if you intend to continue with the study beyond the deadline given. Clearance for export of biological specimen must also be obtained from KNH-ERC for each batch.

On behalf of the Committee, I wish you fruitful research and look forward to receiving a summary of the research findings upon completion of the study.

This information will form part of database that will be consulted in future when processing related research study so as to minimize chances of study duplication.

Yours sincerely

PROF. A N GUANTAI
SECRETARY, KNH/UON-ERC

cc. Prof. K.M. Bhatt, Chairperson, KNH-ERC
The Deputy Director CS, KNH
Supervisors: Dr. Okello-Agina, Dept. of Public Health
Dr. Lucy Malina, Dept. of sociology
Prof. N. A. O. Abinya, Dept. of Med. UON
Appendix 4 STRUCTURED QUESTIONNAIRE

i. Patient

Barriers To Early Diagnosis Of Cervical Cancer Among Patients Presenting At Kenyatta National Hospital, Nairobi Kenya

Respondent’s ID No.------------------ Date ---------------------------------

A. DEMOGRAPHIC DETAILS:

Please note that names are not necessary for this survey.

<table>
<thead>
<tr>
<th>1. Date of Birth:</th>
<th>2. Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Month</td>
</tr>
</tbody>
</table>

3. Marital Status
   1. Single   |   |
   2. Married  |   |
   3. Divorced/Separated   |   |
   4. Widowed |   |

4. If single, how many sexual partners? ..............................................................
   1. None
   2. One
   3. Two
   4. Three and more
   5. Others specify

5. How many sexual partners does your partner/husband have?
   1. I don’t know |   |
   2. 1 regular partner |   |
   3. Multiple |   |
   4. Other specify..........................................................................

6. Place of Residence (where you are currently living)?.............................
   1. Urban   |   |
   2. Peri-urban |   |
   3. Rural   |   |
6.2 Place of Residence (where you currently live)
   1. Name of village……………………………………………………………………..
   2. Division .................................................................................................
   3. District .................................................................................................

7. If urban,
   1. Slum [___]
   2. Up market [___]

8. Place of Birth (Where you were born)…………………………………………
   1. Village [___]
   2. District [___]

9. Religion
   1. Christian [___]
   2. Muslim [___]
   3. Others (please specify)..............................................................................

10. Date of diagnosis (Incidence date) |___|___| / |___|___| / |___|___|___|___|

11. Morphology of cancer ..............................................................................

12. Stage of cancer
   1. In situ [___]
   2. stage I [___]
   3. Stage II [___]
   4. Stage III [___]
   5. Stage IV [___]
   6. Other specify .........................................................................................

13. Cancer grading
   1. Well differentiated [___]
   2. Moderately differentiated [___]
   3. Poorly differentiated [___]
   4. Undifferentiated/Anaplastic [___]
   5. Unknown grade [___]

14. Basis of diagnosis
   1. Clinical only [___]
   2. Clinical investigations/ultrasound [___]
   3. Cytology [___]
   4. Histology [___]
   5. Other specify .........................................................................................
15. Treatment patient has undergone (If combination treatment tick both)
   1. Surgery  [___]
   2. Radiation [___]
   3. Chemotherapy [___]
   4. Hormone therapy [___]
   5. Symptomatic [___]
   6. Other specify ........................................................................

16. If late in 12 above; what are your reasons for late diagnosis?
   1. Doctors told me there was nothing serious [___]
   2. Doctors gave me drugs and told to go home [___]
   3. I was afraid to go to hospital when I saw the signs (fear of outcome) [___]
   4. I went to a traditional herbalist [___]
   5. I dint have money to go to hospital [___]
   6. Others specify ........................................................................

17. If early in 12 above; what are your reasons for early diagnosis?
   1. I went to hospital immediately I saw the signs [___]
   2. The doctor I saw referred me immediately for further tests [___]
   3. Family/friends told me to get immediate treatment [___]
   4. Others specify .................................................................

B. EDUCATIONAL LEVEL

18. What is your highest educational level?
   1. Never attended [___]
   2. Primary level only [___]
   3. Secondary level only [___]
   4. College [___]
   5. University [___]
   6. Other specify ........................................................................

19. What is your occupation?
   1. Unemployed [___]
   2. Employed (office) [___]
   3. Fishing [___]
   4. Mining [___]
   5. Jua Kali sector [___]
   6. Others (specify) ....................................................................

C. LIFESTYLE AND AWARENESS ASPECT

20. Age at first menses?
   1. Less than 9 years [___]
   2. 10 – 14 years [___]
<p>| | |</p>
<table>
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<tbody>
<tr>
<td>3. 15 – 19 years</td>
<td></td>
</tr>
<tr>
<td>4. More than 20 years</td>
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</tbody>
</table>

21. Age at first sexual contact?
- 1. Less than 9 years
- 2. 10 – 14 years
- 3. 15 – 19 years
- 4. 20 - 24 years
- 5. 25 – 29 years
- 6. More than 30 yrs.

22. Parity (Number of children)?
- 1. Nulliparous
- 2. 1 – 3
- 3. 4 – 6
- 4. More than 7

23. How many sexual partners other than your regular partner do you have?
- 1. None
- 2. 1 – 2
- 3. 3 – 4
- 4. 5 and above

24. How often do you do douching?
- 1. Never before
- 2. Daily
- 3. Weekly
- 4. Monthly
- 5. Others specify

25. Have you ever used hormonal contraceptive?
- 1. Never used before
- 2. Used but stopped (specify when)
- 3. Currently using (specify type)

26. If using, for how long have you used them?
- 1. 1 – 5 years
- 2. 5 – 10 years
- 3. 10 – 15 years
- 4. More than 20 years

27. Which screening type for cervical cancer do you know?
- 1. I don’t know
- 2. PAP smear
- 3. X-ray
- 4. blood test
5. Other specify

28. Have you ever heard about PAP smear?
1. Yes [___]
2. No [___]

29. Have you ever undergone a Pap smear test?
1. Yes [___]
2. No [___]

30. If Yes, at what age were you when you had your first test? [___][___]

31. How often do you do PAP smear test?
1. Yearly [___]
2. Every two years [___]
3. Three to Five years[___]
4. Others specify……………………………………

32. Have you heard of HPV?
1. Yes [___]
2. No [___]

33. If yes, what do you associate it with?
………………………………………………………………………………………………………………
………………………………………………………………………………………………………………

34. Alcohol consumption?
1. Never before [___]
2. Stopped (specify when) [___]
3. Takes occasionally [___]
4. Heavy drinker [___]
5. Others specify…………………………………………………………

35. Tobacco consumption?
1. Never before [___]
2. Stopped (specify when) [___]
3. Takes occasionally [___]
4. Heavy smoker [___]
5. Others specify…………………………………………………………

36. Is there a family history of cervical cancer?
1. YES [___]
2. NO [___]
3. Don’t Know [___]
4. Other specify ……………………………………………………………
37. If yes in 36 above, who in the family had cervical cancer

D. KNOWLEDGE

38. Before you were diagnosed what did you know as the signs and symptoms of cervical cancer?
   1. Don’t know
   2. Pain during sex
   3. Bleeding after and during sex
   4. Discharge from the vagina
   5. Swelling (tumour)
   6. Others specify

39. Before you were diagnosed what did you know as risk factors for cervical cancer?
   1. Don’t Know
   2. Witchcraft
   3. Multiple sexual partners
   4. Tobacco intake
   5. Microorganisms (specify)
   6. Others specify

40. Before you were diagnosed, did you know of cervical cancer?
   1. Yes
   2. No

41. If yes, did you know if cervical cancer is treatable and by what treatment?  
   1. Drugs given through the vein at intervals for several weeks or months (chemotherapy)
   2. Radiation with x-rays using special machines
   3. Combination of a and b
   4. Taking herbs
   5. Prayers
   6. Others specify

E. PERCEPTIONS, BELIEFS & PRACTICES

42. In your neighborhood what do other people perceive of cervical cancer? (Tick all stated by respondent)
   1. Disease that cannot be treated
   2. Caused by many sexual partners
   3. They belief it’s a curse
   4. They associate it with HIV/AIDS
   5. Others please specify
43. Are there women who have had a similar disease in your area who have faced some stigma and discriminations from family, friends and neighbors?
   1. Yes  
   2. No

44. If yes, why have they been treated that way? (list all given by respondent)
   ......................................................................................................................................................
   ......................................................................................................................................................

45. What were some of your fears when you were diagnosed with cervical cancer?
   1. Stigma and discrimination by family/friends
   2. Side effects of chemo and radiotherapy
   3. Finances for treatment
   4. That I would not work and provide for my family
   5. Others please specify......................................................................................................................

F. HEALTH SEEKING

46. Where did you first seek the treatment?
   1. Private clinic near my home area
   2. District hospital
   3. Local dispensary
   4. Went to a herbalist/traditional healer
   5. Others specify..............................................................................................................................

47. How many times did you attend to the health institutions before it was discovered that you had cervical cancer?
   1. Once
   2. Twice
   3. Three – Four times
   4. More than 5 times
   5. Others specify..............................................................................................................................

48. What was the duration like between the first time you went to the first health facility and the time you begun treatment?
   1. Less than 1 month
   2. One to two months
   3. Two to three months
   4. More than Five months

49. How long had you stayed with the symptoms of cervical cancer before you sought treatment?
   1. Less than 5 months
<p>| | |</p>
<table>
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<tr>
<td>2. 5 to 12 months</td>
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<td>3. 12 to 24 months</td>
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</tr>
<tr>
<td>4. More than 24 months</td>
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</table>

50. What perception did you have of the medical care given when you sought treatment
........................................................................................................................................................
........................................................................................................................................................
........................................................................................................................................................

51. In your own view what are some of the reasons why you sought treatment late?
........................................................................................................................................................
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........................................................................................................................................................

52. What would you wish for the government to do as far as cervical cancer is concerned?
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Thank you for your time
ii. Health Care Provider

Barriers To Early Diagnosis Of Cervical Cancer Among Patients Presenting At Kenyatta National Hospital, Nairobi Kenya

Respondent’s ID No.------------------------- Date -------------------------------

A. DEMOGRAPHIC DETAILS:

Please note that names are not necessary for this survey.

1. Date of Birth: |___|___| / |___|___| / |___|___|___|___| 2. Age |___|___|

3. Sex |M| | F|

4. Marital Status
   1. Single |___|
   2. Married |___|
   3. Divorced/Separated |___|
   4. Widowed |___|

5. Cadre
   1. Nurse |___|
   2. Clinical officer |___|
   3. Registrars |___|
   4. Gynaecologist |___|
   5. Radiologist |___|
   6. Radiotherapist |___|
   7. Oncologist |___|
   8. Other specify ………………………………………………………

6. You attend to many cervical cancer patients, what is your observation in regards to stage of the disease at diagnosis?
   1. Early |___|
   2. Late |___|
   3. Other specify……………………………………………………

7. If late in 6 above, what are some of the reasons that make them present with late stage diseases? (List all possible reasons)
   1. There were no diagnostic facilities in the district hospital |___|
   2. Lack of screening programmes |___|
   3. The health worker did not recommend |___|
   4. Others specify ………………………………………………………
      …………………………………………………………………
      …………………………………………………………………
8. Why, in your opinion do cervical cancer patients present to hospital late?
   1. Referral system [___]
   2. Personnel not well trained to suspect cancer [___]
   3. Lack of awareness [___]
   4. Others specify ………………………………………………………………………
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………

9. What is the average time period between time of diagnosis and commencement of treatment?
   ……………………………………………………………………………………………

10. In your opinion does the waiting period have any impact on progression of disease?
    ……………………………………………………………………………………………

11. What are the reasons for delay in treatment of cervical cancer?
   ……………………………………………………………………………………………

12. In a scale of 0 -100%, how do you prioritize the following factors being reasons for late diagnosis and management of cervical cancer? (List any other in the space provided below)

<table>
<thead>
<tr>
<th>Factors</th>
<th>&lt;25%</th>
<th>25 – 50%</th>
<th>50 – 75%</th>
<th>75 – 100%</th>
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<tbody>
<tr>
<td>a. Lack of awareness of the disease</td>
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<tr>
<td>b. Lack of screening programmes</td>
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<tr>
<td>c. Cultural aspects (stigma, discrimination)</td>
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<tr>
<td>d. Community perceptions and beliefs</td>
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<tr>
<td>e. Lack of diagnostic facilities</td>
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<td>f. Expensive treatment/drugs</td>
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<tr>
<td>g. Personnel not well trained in district level</td>
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<tr>
<td>h. Proximity to diagnostic facilities</td>
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</table>

Others please specify
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………
   ……………………………………………………………………………………………
13. What would you wish for the government to do as far as cervical cancer is concerned?

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Thank you for your time