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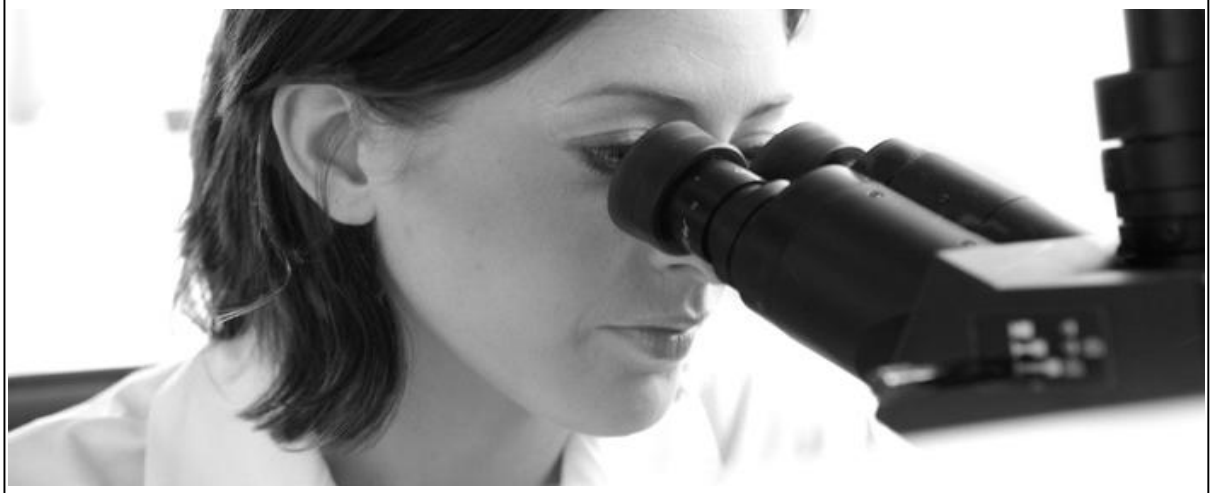

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RESEARCH ARTICLE

AN ASSESSMENT OF KNOWLEDGE LEVELS ABOUT CERVICAL CANCER AMONG WOMEN ACCESSING REPRODUCTIVE HEALTH SERVICES AT THE KENYATTA NATIONAL HOSPITAL, NAIROBI , KENYA

Rhoydah Nyambane[1]., Hellen Mberia[2] and Ndeti Ndati[3]

[1]Department of Communication and Media Studies, The Technical University of Kenya, Nairobi
[2]Department of Communication and Development Studies, Jomo Kenyatta University of Agriculture and Technology (JKUAT), Nairobi, Kenya
[3]School of Journalism and Mass Communication, University of Nairobi

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ABSTRACT

Cancer of the cervix is the second most common cancer among women and the leading killer of women in their reproductive ages. The World Health Organization estimated that 529,409 new cases occurred globally, with 274,883 of the women (52% of cases) dying. Of the total new cases each year, about 86% occur in developing countries, where, unfortunately, 80-90% of cervical cancer-related deaths occur due to, among other things, poverty, cultural beliefs and lack of awareness, myths and misconceptions and wrong information. In the developed world, the situation is different. Due to advanced medical care, policies that ensure that women go for pap smears at least once every year, coupled with media awareness, mortality rates as a result of cervical cancer are low compared to the developing world. The situation is quite different in developing world especially where poverty, lack of awareness, myths, misconceptions and cultural beliefs inhibit the detection, diagnosis, treatment and/or management and prevention of cervical cancer among women in their reproductive age. In Kenya, **c**ervical cancer is the second most frequent cancer among women and the leading cause of cancer deaths in women of reproductive age (WRA) with a rate of 300,000 deaths per year. Data from hospital-based registries in Kenya indicate that cancer of the cervix accounted for 70-80% of all cancers of the genital tract and 8-20% of all cancer cases. These statistics do not reflect the cases that go unreported and especially those in the rural areas. It has been reported that there are 10 to 15 new cases of cervical cancer in Nairobi each week. Despite the grave situation in the country, the media, the government and other relevant stakeholders have not made deliberate efforts towards creating awareness campaigns aimed at the prevention of cervical cancer. This paper is based on PHD study that set out to investigate the knowledge levels about cervical cancer among women accessing reproductive health services at the Kenyatta National Hospital, Nairobi Kenya.

INTRODUCTION

Cancer of the cervix is the second most common cancer among women worldwide and the leading cause of cancer deaths in developing countries. According to (WHO 2010), in 2008, it was estimated that 529,409 new cases occurred globally, with 274,883 of the women (52% of cases) dying. Of the total new cases each year, about 86% occur in developing countries, where, unfortunately, 80-90% of cervical cancer-related deaths occur due to, among other things, poverty, cultural beliefs lack of awareness. With the peak age of cervical cancer being 35-45 years of age, it claims the lives of women in the prime of their life when they may be raising children, caring for the family, and contributing to the social and economic life of their community (Williams *et al.*, 1994; Gatune & Nyamongo, 2005). It has been estimated that the average life years lost due to cancer of the cervix is 25.3 years, (Huchko *et al*., 2011; McKenzie *et al*, 2011). In 2002, an estimated 11 million new cancer cases and 7 million cancer deaths were reported worldwide; nearly 25 million persons were living with cancer, (Tiro, Meissner, Chollette 2007).

According to Parkin, *et al* (2003), cervical cancer in Sub-Saharan Africa accounts for 22.2% of all cancers in women and it is also the most common cause of cancer deaths among them. About 60–75% of women in sub-Saharan Africa who develop cervical cancer live in rural areas. Many of these women go untreated, mostly due to lack of access (financial and geographical) to health care facilities, lack of awareness on its symptoms, prevention and treatment, unlike in the developed

*Corresponding author: **Rhoydah Nyambane**
Department of Communication and Media Studies, The Technical University of Kenya, Nairobi

world where awareness is high, coupled with health policies which are enforced and availability of medical care. Women in sub-Saharan Africa lose more years to cervical cancer than to any other type of cancer. Unfortunately, it affects them at a time of life when they are critical to the social and economic stability of their families (Parkin *et al*., 2003).

According to Arnolu (2007), some of the few women who have access to screening do not get themselves screened because they have wrong beliefs about cervical cancer. He further argues that there are very few cervical cancer screening services in Africa and many of them are based at secondary tertiary health care facilities located in urban centers where majority of women from the rural areas cannot access because of poverty.

Arrosi *et al* (2010) agrees with Arnolu (2007) that screening in most developing countries in Sub-Saharan Africa is characterized by an estimated low coverage, and an absence of quality control procedure makes the problem grave. Policies for cervical cancer screening in most countries vary and in most often non-existent.

In Kenya, **c**ervical cancer is the second most frequent cancer among women and the leading cause of cancer deaths in women of reproductive age (WRA) with a rate of 300,000 deaths per year, (Kenya Ministry of Public Health, 2009). Data from hospital-based registries in Kenya indicate that cancer of the cervix accounted for 70-80% of all cancers of the genital tract and 8-20% of all cancer cases and these statistics do not reflect the cases that go unreported and those in the rural areas. It has been reported that there are 10 to 15 new cases of cervical cancer in Nairobi each week, (Kenya Cancer Registry, 2009).

Despite the magnitude of the problem in Kenya and the world over, and the fact that cancer is easily preventable once detected early when it can be controlled or treated, cervical cancer screening coverage by the media, more so radio and television in Kenya for all women 18 to 69 years of age is only 3.2**%,** (Gichangi *et al*., 2003). Mitchell *et al.,* (2011) further argues that with the recognition that cervical cancer is a major cause of morbidity and mortality among HIV-positive women, there is need for significant efforts in integrating cervical cancer screening as part of the minimum comprehensive care package and also serious advocacy by relevant stakeholders targeted at this deadly disease, coupled with awareness creation, (Mitchell *et al*., 2011).

However, Becker (2010) has stated that in Kenya there are no pap smear programs. As a result, both the frequency and mortality from cervical cancer is high. Most Kenyan women are diagnosed at advanced stages of the cancer compared to North America. This is partly due to disparities in income levels, availability of medical care, awareness creation and policies that make screening for cervical cancer mandatory for the vulnerable ages in developed countries. For instance in the developed countries such as America and England, majority of the cases are diagnosed early, hence making treatment more effective, unlike in the third world, Kenya included, where there is an extreme lack of resources to treat cervix cancer -- both medical equipment and physician experts, coupled with lack of awareness makes, the situation grave, (Becker-Dreps, 2010).

Gichangi *et al* (2003), has pointed out that studies in Kenya report very poor knowledge of cervical cancer among patients. He further regrets that poor knowledge is not limited to patients alone but to health care workers as well and those with knowledge on cervical are few and majority of them have no knowledge about symptoms, presentation, prevention and management of cervical cancer. Mass media awareness and advocacy on the various issues of concern about cervical cancer among women is limited and not proportionate to the gravity of the situation. There are specific gaps in knowledge about risk factors and screening intervals. For instance, it was found that although the relationship between sex and cervical cancer was known, less was known about other risk factors such as their partner's prior sexual experiences and very little was known about the link between HPV and cervical cancer, (Kidanto *et al*., 2002, and Anarlu *et al*., 2004).

Statement of the Problem

Cervical cancer has been a leading killer among women in the recent years after HIV/AIDS-related deaths and maternal mortality rates, (WHO 2010). According to the Kenya Cancer Registry, cervical cancer is the second most frequent cancer among women in Kenya and the leading cause of cancer deaths in women of reproductive age (WRA). Currently, the estimated annual number of cervical cancer cases is 300,000 while the annual number of deaths due to cervical cancer is over 200,000. It is projected that by the year 2025, the number of new cervical cancer cases annually in Kenya will reach over half a million**.** Data from hospital-based registries in Kenya indicate that cancer of the cervix accounted for 70-80% of all cancers of the genital tract and 8-20% of all cancer cases for the 10-year period of 1981 to 1990. It has been reported that there are 10 to 15 new cases of cervical cancer in Nairobi each week, (*Kenya Cancer Registry 2009).*

Statistics on cervical cancer morbidity and mortality rates at the Kenyatta National Hospital paints a grim picture. Between 2009 and 2014, the hospital handled 1425 cases with a mortality of 534 or 38% percent within the same period. For instance, in 2014 alone, there were 259 cases with a mortality of 144 which is a whopping 56%. The figures show a grim picture of the cervical cancer prevalence and unless preventive measures are put in place, cancer of the cervical poses a greater danger to women than any other infectious disease, source: Statistics Unit, Health Information Department KNH 2014).

The media has tremendous power and potential to change people's attitudes, beliefs and behavior therefore can be major source of knowledge levels among women in the reproductive ages. However, the current situation in Kenya paints a grim picture whereby knowledge levels about cervical cancer are very low; leading to high mortality rates among the women due to cervical cancer. Cancer prevention awareness media campaigns are largely missing or minimal in Kenya. Although

we have news coverage of issues surrounding cervical cancer, the efforts are not deliberate and with no specific objective of creating awareness about cervical cancer and have the vulnerable women to make steps towards the prevention of the disease, (Dana M. Casciotti 2012).

This study therefore sought to establish the knowledge levels/gaps about cervical that exist among women accessing reproductive health services at the Kenyatta National Hospital, in Nairobi Kenya, with the aim of making recommendations towards a concerted focused electronic media campaigns aimed at reducing cervical cancer cases in Kenya.

Research question

The study was guided by the following research question:

- What is the role of electronic media in creating awareness about cervical cancer among women?

Justification of the study

Given the severity of cervical cancer, it is expected that the findings of this study will sensitize the electronic media on the need to focus its attention on awareness strategies towards cervical cancer prevention, management and control. The information will give direction on the areas of focus more so on women's vulnerability and other underlying factors that put them at risk of contracting cervical cancer. The findings will also make recommendations to government agencies, health care providers and other relevant stakeholders on the role of the media in cervical cancer prevention and lay a basis for further research and contribute to the level of knowledge.

LITERATURE REVIEW

The literature reviewed in the study was related to the study's main objective, which was to establish the knowledge levels among women aged between 18 and 65 accessing reproductive health services at the Kenyatta National Hospital, Nairobi, Kenya. The emphasis was put on the role of electronic media, in particular radio and television, in addressing women's vulnerability to cervical cancer.

The study also analyzed the level of awareness of cervical cancer among women as created by the electronic media and tried to establish the source of the information and whether the information has influenced their behavior change in the effort to address the issues surrounding cervical cancer symptoms, prevention, management and control.

Cervical cancer occurs worldwide but the highest incidence and mortality rates of cervical cancer are in Eastern, Western, and Southern Africa, as well as South-Central Asia and South America. This is a source of great concern considering the fact that cervical cancer is preventable and curable at low cost with currently available methods if detected in its early stages, (Parkin *et al*., (2003). Unfortunately, this is not the case due to low knowledge gaps due to limited awareness levels as a result of lack or minimal media campaigns, misconceptions and cultural beliefs that inhibit screening efforts.

Louie *et al (*2009) also points out that Sub Saharan Africa is the region with the highest incidence of cervical cancer in the world with concomitant high mortality affecting women at their prime age. He states that there are no or minimum screening programs for early detection of precancerous lesions within the countries in this region. Most screening activities are done as pilot or research projects which are discontinued on completion.

The onset of HIV/AIDS epidemic that is highest in the sub region has elevated the problem of cervical cancer to a serious level because many of the HIV positive women have also tested positive to cervical cancer. To compound the problem is the widespread lack of resources and awareness associated with the region. Majority of the women have no knowledge about cervical cancer symptoms, prevention and management. The limited knowledge or lack of it has seen many women present themselves for diagnosis when disease has developed an therefore cannot be managed and cured, leading to high deaths due to cervical cancer, (Louie *et al*.2009).

The region accounts for 22.2% of all cancers in women and it is also the most common cause of cancer death among women, (Parkin *et al*., 2003). Cervical cancer is however the second common cancer among women after cancer of the breast in some areas like Ibadan in Nigeria, (Adebamowo *et al*. 1999). About 60–75% of women in sub-Saharan Africa who develop cervical cancer live in rural areas. Many of these women go untreated, mostly due to lack of access (financial and geographical) to health care and awareness on its symptoms, prevention and management. The electronic media has not particularly focused its attention towards creating awareness about cervical cancer among women. This situation has led to low levels of knowledge about cervical cancer and/or misconceptions leading to very high mortality rates due to cervical cancer as witnessed currently. Women in sub-Saharan Africa therefore lose more years to cervical cancer than to any other type of cancer. Unfortunately, it affects them at a time of life when they are critical to the social and economic stability of their families, (Parkin *et al*., 2002).

Chokunonga *et al*., (2002) further argues that the true incidence of cervical cancer in many African countries is unknown as there is gross under-reporting. The underreporting has led to low knowledge levels, wrong information leading to wrong decisions; for example HIV positive women do not bother going for screening because they assume they will test positive for cervical cancer, hence lose the opportunity to prevent cervical cancer if detected early. Only very few countries have functional cancer registries and where they exist, record keeping is minimal or non-existent in many countries. And to compound the problem, it is only a small fraction of women who access medical facilities while majority cannot access hospital care due to poverty and hence die at home. A mortality rate of 35 per 100,000 is reported in Eastern Africa. The reported mortality rates in developed countries with successful screening programs seldom exceed 5 per 100,000 women. This is due to high knowledge levels, policy enforcement on mandatory screening and hence reducing mortality rates, (Chokunonga *et al*., 2002).

In Kenya, as in most parts of Africa, cancer of the cervix is a very common disease, accounting for 70- 80% of all cancers of the genital tract. Where cancer registries exist, cancer of the cervix represent up to 37% of all histologically proven cancers in women, (Lowe *et al* (1981). Unfortunately, most data available in Africa are derived from central hospitals and this may not reflect the true situation within the country as a whole because many of the cases go unreported. Inadequate and non-accessible health facilities in the rural areas, coupled with taboos and cultural barriers, stigma contribute to the inevitable under- reporting of cases in many African countries, Kenya included. Rural women tend to shy from reporting symptoms related to the genital tract such as vaginal discharge and post-coital bleeding. They are also most reluctant to submit to pelvic examination as a result of fear and stigma. This situation points to lack of correct information, misconception that leads to low levels of knowledge leading to wrong decisions i.e. women go to health facilities when the disease has advanced to late stages where the disease cannot be prevented or cured. The electronic media has a role to play to create awareness about cervical cancer in a bid to reduce cervices cancer deaths but this is yet to be done in acceptable proportions. As a result, cancer of the cervix in Africa is diagnosed at an advanced stage and consequently leading to high rates of mortality, (WHO 1984).

Risk factors

Many of the factors that increase both HPV acquisition and promote the oncogenic effect of the virus are also very widespread in Africa (Schmauz *et al* 1989). These include: early marriage, polygamous marriages and high parity. Polygamy is reported to increase the risk of cervical cancer two-fold and the risk increases with increasing number of wives, (Bayo *et al*., 2002). This is part of the male factor in addition to prostitution that lead to the high prevalence of HPV in Sub Sahara Africa. High parity, which is the norm in some cultures in Africa, is also a recognised, HPV-related co-factor for the development of cervical cancer (Brinton *et al* 1989).

The prevalence of HPV has been shown to be higher in uncircumcised men than in circumcised men. In a study to investigate the association between male circumcision (MC) and high risk human papilloma virus (HR-HPV) prevalence, Auvert and colleagues (2009). So women who have sex with uncircumcised men are at greater risk of being infected with cervical cancer.

Worldwide women of low socio-economic status have a greater risk of having cervical cancer. Cervical cancer is often referred to as a disease of poverty and of poor women. A recent study in Mali in West Africa showed that within a population widely infected with HPV, poor social conditions, high parity and poor hygienic conditions were the main cofactors for cervical cancer (Palacio-Mejia *et al.,* 2003).

Other factors contributing to high risks of cervical cancer among Kenyan women include multiple pregnancies, early age of first intercourse, hormonal contraceptives, smoking and HIV infection (Williams *et al.,* 1994; Gatune & Nyamongo, 2005). For a woman living with HIV, a Human Papillomavirus (HPV) infection can develop into cervical cancer more quickly than for a woman who is HIV negative, (Yamada *et al.,* 2008). The relatively high incidence of HIV in Kenya is an important consideration when developing a communication strategy against cervical cancer. A Kenyan study conducted from 2007 to 2010 found that in order to target vulnerable populations it is effective to combine cervical cancer screening with HIV testing, (Huchko *et al.,* 2011; McKenzie *et al*., 2011). Coupled with lack of knowledge especially as disseminated by radio and television, which are the mediums that transcend literacy levels, makes the situation very grave.

Myths and misconceptions about cervical cancer

Several myths and misconceptions have greatly hampered the war against cervical cancer. Some of the myths have been discussed by Krishnansu Sujata Tewari, Bradley J. Monk. (2007). According to an articles published in Plus News (May 2010), misconception and negative attitudes have continued to expose women to cervical cancer infection and treatment. For instance HIV-negative women believe cervical cancer only affects those who are HIV-positive and they miss the opportunity for screening because they believe they are not at risk, while HIV-positive women will at times decline screening because they fear they will be found to be positive for the disease, (IRIN/Plus News 2010). And due to these misconceptions, screening levels remain low. According to the UN World Health organization, just 3.2 percent of Kenyan women aged 18-69 are screened for cervical cancer every three years, compared with 70 percent of women in the developed world. The disparity is due to lack of awareness and misconceptions about the disease in Kenya as opposed to the developed world, where facilities are available, coupled with enforced policies and awareness creation which helps to reduce the burden of the disease, (IRIN/Plus News 2010). Other myths that prevent women from going for screening is that they think that when one has no symptoms, it means she does not have cervical cancer and this denies her an opportunity to go for screening.

Women's vulnerability to cervical cancer

Women and girls are particularly vulnerable to sexually transmitted diseases, HIV and cervical cancer included due to a combination of biological factors and gender-based inequalities particularly in cultures that limit women's knowledge about sexually transmitted diseases and their ability to protect themselves and negotiate for safer sex. Violence is an additional significant risk factor to women's sexual and reproductive health and other chronic health problems, (WHO 2009). Lack of access to information and services, social norms and values that undermine their ability to protect themselves is a major hindrance to women's health and cervical cancer prevention, (WHO 2009).

Women's vulnerability may increase during humanitarian crises and emergencies when economic hardships can lead to increased risk of exploitation such as trafficking and increased reproductive health risks related to the exchange of sex for

money and other necessities and sexual abuse, (Women and Health, WHO 2009).

A combination of social and biological factors make women more vulnerable to HIV/AIDS and other sexually transmitted infections and cervical cancer due to having multiple sexual partners coupled with the non-availability of protection. Because the symptoms tend to be less evident in women than men, and because women overall have more limited access to diagnosis and treatment services, women's infections are detected late and thus go longer without treatment. This, coupled with women's greater biological vulnerability to complications from untreated infection, result in women suffering far greater morbidity due to sexually transmitted infections which expose them to the risk of cervical cancer infection. Majority of the cases are reported at an advanced stage when cure cannot be guaranteed and thus leading to multiple deaths that could otherwise have been prevented if the cases were detected early enough, (Women and Health WHO 2009).

Lack of awareness and knowledge of cervical cancer among women

Studies in Kenya report very poor knowledge of the disease in patients. (Gichangi *et al.*, 2003 & Kidanto *et al*.,2002). Poor knowledge is not limited to patients alone but health care workers who are supposed to be better informed do not have good knowledge of the disease either. In Lagos Nigeria, 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 because of late diagnosis and refer women with cervical cancer to a tertiary hospital for management (Anarlu *et al*., 2004).

The suitable radio and television programs that create awareness about cervical cancer

Various radio and television programs can be used to pass information about cervical cancer. Majority of Kenyans own radio especially those in the rural areas; and television in urban areas or both. Majority of women watch news, local dramas, features, advertisements, and documentaries. Information on cervical cancer can be passed as a press release to national and local media especially the vernacular stations. Radio stations can also make announcements in between news or any serious program. Awareness and education that could be accomplished if each state had a story or feature placed in major media venues & radio and television (Solomon, 2014). Message on risk factors, symptoms and treatment of cervical cancer can also aired during the cancer Awareness Month and the importance of early detection., (MCK 2011).

Theoretical framework

The study was guided by one theory of behavior change i.e. Transtheoretical (Stages of Change) Model (Prochaska, J., Johnson, S., & Lee, P. (1998). According to this theory, behavior change is a process of six stages: *Precontemplation* is the stage in which people are not intending to make a change in the near future (often defined as the next 6 months) because of one reason or the other. *Contemplation* is the stage where people intend to change (within the next 6 months) as result of being prompted by some stimuli, say awareness creation. People in this stage are aware of the pros of changing but also can identify the cons and hence leading to a certain action. *Preparation* represents the stage where people have a plan of action and intend to take action in the immediate future (within a month) because of being convinced to take action. *Action* is the stage in which people make the behavior change and *maintenance* represents the stage where people work to prevent relapse.

Finally, *termination* represents that stage where individuals have 100 percent efficacy and will maintain their behavior. This stage is the most difficult to maintain, so many people remain a lifetime in maintenance.

It is essential to match behavior change interventions to people's stages. For example, if an individual is in the pre-contemplation stage it is important to raise their awareness about an issue in order for them to contemplate making a behavior change. Without a planned intervention, people will remain stuck in the early stages due to a lack of motivation to move through the stages. Prochaska, Johnson, and Lee Grizzell, J. (2007, 1/27/2007) suggest a series of activities that have received empirical support, which help individuals progress through the following stages:

- Consciousness-Raising — increasing awareness of the causes (providing educational materials, confrontation, media campaigns, feedback, etc.)
- Dramatic Relief — producing an emotional experience which is followed by a reduced affect if some action can be taken (personal testimonies, media campaigns, drama)
- Self-reevaluation — inviting individuals to make cognitive and emotional assessments of their self image (clarify values; provide healthy models, using imagery).
- Environmental reevaluation — assessments of how the presence or absence of a behavior might impact one's social environment (documentaries, personal stories, family interventions).

Application of the theory to the study

Any theories of behavior aim at achieving certain steps being taken to arrive at a certain desired behavior change. Any steps towards awareness creation must go through the six stages as proposed by the Transtheoretical (Stages of Change) Model. The main assumption of the study is that women are dying of cervical cancer because of inadequate information and lack of awareness or misconceptions about cervical cancer. The electronic media has the role to communicate the right information about cervical cancer which will lead to behavior change. Majority of the targeted women could be at any of the six stages as pointed out in the Transtheoretical theory e.g. precontemplation, contemplation, preparation, action, maintenance and termination. In the first stage, the women are not taking any step towards going for screening because of inadequate information, misinformation, fear, stigma, cultural beliefs and so on. So the status quo remains the same.

In the second stage (contemplation), the women are contemplating going for screening within six months or so because awareness on the pros and cons has been created by radio and television. The next stage is preparation whereby the women are getting ready to perform behavior within a very short time as a result of being convinced by radio and television messages about symptoms, prevention, management and control. The next stage is preparation where the women plan to go for screening within a short period, say, one month because proper information has been communicated which has convinced them on the need to go screening and lastly maintenance whereby they will agree to go for routine screening periodically as a result adequate provision of information by radio and television. Lastly is termination whereby the women will reach 100 percent efficacy and will maintain behavior i.e. go for routine screening in an effort to prevent cervical cancer. The theory therefore will help establish the stages at which the women are in their health behavior and provide relevant information to help them make appropriate steps towards the prevention of cervical cancer.

METHODOLOGY

A cross-sectional survey design was used to conduct the study among women aged between 18 and 65 at the Reproductive Realth Department at the Kenyatta National Hospital, Nairobi. Sample size for proportion was given by n = p (1-p) (z/E) 2, A single population proportion formula, n = p (1-p) (z/E) 2, was used to estimate the sample size of women to be interviewed with a margin of error of 0.5 which gave a total sample size of 295 women. Systematic random sampling was used to pick the respondents who were aged between 18 and 65 years. A structured questionnaire was used as a tool to collect quantitative from the respondents. The principal investigator and four research assistants were involved in the data collection process. They made frequent checks on the data collection process to ensure the completeness and consistency of the gathered information.

The data were entered and analyzed using SPSS version 15 statistical package. Data cleaning was performed to check for accuracy, consistency and missed values. Frequencies, proportions and summary statistics were used to describe the study population in relation to relevant variables. The impact of selected socio demographic and other characteristics on knowledge of cervical cancer was investigated using both the bivariate method and the multivariate logistic regression technique. Finally, explanatory variables with p value of less than 0.2 in the bivariate analysis were included in the multiple logistic regressions. Odds ratio and 95% confidence interval were also used to identify the presence and strength of association.

Data analysis

Data was analyzed according to the study objective which was to establish knowledge levels about cervical cancer among women accessing reproductive health services at clinics 18 and 66 at the Kenyatta National Hospital, Nairobi, Kenya.

Demographic characteristics

A total of 295 women aged between 18 and 65 were included in the study making the response rate 100%. Of the participants, 121 (42.2%) were aged between 18-28 years; 29-39 were 121 (42.2%), 40-59 were 44 (14.6%); and 60-69 were 3 (1%).

Frequency Table l Distribution by age (%)

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-28 yrs	121	41.0	42.2	42.2
	29-39 yrs	121	41.0	42.2	84.3
	40-59 yrs	42	14.2	14.6	99.0
	60-69 yrs	3	1.0	1.0	100.0
	Total	287	97.3	100.0	
Missing	System	8	2.7		
Total		295	100.0		

Table 2 Marital status (%)

Marital status		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Married	230	78.0	80.4	80.4
	Single	45	15.3	15.7	96.2
	Widowed	8	2.7	2.8	99.0
	Separated	3	1.0	1.0	100.0
	Total	286	96.9	100.0	
Missing	System	9	3.1		
Total		295	100.0		

On marital status, majority of the respondents were married at 230 (80.4%), more than half of the respondents. Those who were single comprised of 45 (15.3%), widowed, 8(2.8%) and separated at 3(1%).

Number of children		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	78	26.4	42.4	42.4
	2	60	20.3	32.6	75.0
	3	28	9.5	15.2	90.2
	4	12	4.1	6.5	96.7
	5	3	1.0	1.6	98.4
	7	2	.7	1.1	99.5
	10	1	.3	.5	100.0
	Total	184	62.4	100.0	
Missing	System	111	37.6		
Total		295	100.0		

On the number of children, nearly half of the respondents 166 (56.33%) had more than one child with majority 78 (42.4%) having one, 60 (32.6%) had two, 28 (15.2%) had three children, 12 (6.5%) had four children, 3 (1.0%) had five children, while 2 (1.1%) had seven children and 190.3%) respondent had 10 children.

Table 3 Education levels (%)

Level of education		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Primary and below	31	10.5	11.0	11.0
	Secondary	92	31.2	32.6	43.6
	College/University	153	51.9	54.3	97.9
	Postgraduate	6	2.0	2.1	100.0
	Total	282	95.6	100.0	
Missing	System	13	4.4		
Total		295	100.0		

On the education levels, the study findings were as follows: 31(11.0%) of the respondents attended primary school level and below. 92 (31.2%) at least high school, while majority at 153 (54.3%) had college or /university education. Only 6(2.1%) had attained post graduate training.

Table 5 Distribution by employment

Are you employed					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	161	54.6	57.3	57.3
	Yes	120	40.7	42.7	100.0
	Total	281	95.3	100.0	
Missing	System	14	4.7		
Total		295	100.0		

According to the study findings, more than of half of the respondents 161 (57.3%) were not in any gainful employment as shown in the distribution table above and only 120 (42.7%) were gainfully employed. The places of employment were diverse, with majority being in casual labor and low income levels such as clerical and administrative duties in public and private sector.

Table 6 Distribution by salary range (%)

Other					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		290	98.3	98.3	98.3
	4000	1	.3	.3	98.6
	Business lady	1	.3	.3	99.0
	Farmer	1	.3	.3	99.3
	Less than 5000	1	.3	.3	99.7
	Over 100,000	1	.3	.3	100.0
	Total	295	100.0	100.0	

More than half of the respondents 65 (53.7%) earned a salary of between Kshs 10,000 and Kshs 20,000. Less than half 33 (26.8%) earned between Kshs 30,000 and Kshs 40,000. 17 (13.8) earned between Kshs. 50,000 and 60,000/=. A very small percentage 4(3.3%) earned between Kshs. 70,000 and Kshs 80,000 per month and only 3 (2.4%) of the respondents earned a salary at between Kshs. 90,000 and Kshs. 100,000. This is a demonstration that majority of the respondents came are socio-economic status.

Less than 7 (10%) respondents had other sources of income apart from salaried employment in personal businesses and farming whose income was less than Kshs 5,000 per month and only 1 (3%) earned over Kshs 100,000 per month. This corroborates with (Palacio-Meja *et al*, 2003)'s assertion that worldwide, women of low socio-economic status have a greater risk of having cervical cancer. He further argues that cervical cancer is often referred to as a disease of poverty and of poor women. In a study that was conducted in Mali in West Africa showed that within a population widely infected with PHV, poor social conditions, high and poor hygienic conditions were the main cofactors for cervical cancer.

Knowledge levels and awareness on cervical cancer

A series of questions regarding what cervical cancer is, what HPV is, risk factors causes of cervical cancer, main symptoms, treatment options and prevention and early detection measures of cervical cancer were asked to evaluate the respondents' knowledge levels about cervical cancer and the following were the answers which were computed to establish the knkowledgfe levels:

When asked about what cervical cancer is, the study findings showed that, of the 225 women who responded to the question, only about 102 (34.6%) had an idea of what cervical cancer while (35%) did not know what cervical cancer was by responding "I don't know". Another 43 (14.5) gave wrong answers. From the responses, it can be demonstrated that majority of the respondents do not know what cervical cancer is. On top of that, the right knowledge is largely missing. For instance, it is only 2.2% who knew that HPV is the main cause of cervical while over 98.2% had not heard of HPV. This corroborates with the literature that knowledge levels about cervical cancer is very low among the population. This corresponds with Louie (2009) that majority of the women have no knowledge about cervical cancer symptoms, prevention and management. This leads to many women present themselves for diagnosis late when the disease has developed and cannot therefore be cured, leading to high deaths as a result of cervical cancer, (Louie *et al* 2009).

Ever heard of HVP virus					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	171	58.0	63.1	63.1
	Yes	100	33.9	36.9	100.0
	Total	271	91.9	100.0	
Missing	System	24	8.1		
Total		295	100.0		
Total		295	100.0		

When asked about what HPV is, very few had an idea of what it is yet HPV is the main cause of cervical cancer. According to (Bosch F. *et al*, 1995), HPVs, which are transmitted sexually is the main cause of cervical cancer worldwide. The table above demonstrates that right information about cervical cancer is missing. For instance, more than half of the respondents 171 (63.1%) said that they have never heard of HPV (Human Papilloma Virus), which is the main cause of cervical cancer and only 100 (36.9%) had heard of HPV. However, even those that have heard about it, is not known what they have done with that information, because a large percentage has never done a pap smear as demonstrated in the table below:

Table 10 Ever done a pap smear?

Ever done a pap smear					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	193	65.4	68.2	68.2
	Yes	90	30.5	31.8	100.0
	Total	283	95.9	100.0	
Missing	System	12	4.1		
Total		295	100.0		

Most of the respondents have not taken the right steps towards the prevention of cervical cancer. When asked whether they have ever done a pap smear a more than half 193 (68.2%) of the respondents said they have never done a pap smear and only 90 (31.8%) reported to have done a pap smear. The study findings indicate that information on the causes of cervical cancer is largely lacking among the respondents. For instance when asked whether cervical cancer is a sexually transmitted disease, more than 185 (70.1%) of the respondents responded in the negative; meaning that they are likely not to take steps

towards the prevention of the disease. Even for the 76 (29.9%) it is not certain that the knowledge will make them take positive behavior change.

About 174 (66.9%) did not agree that cervical cancer is a hereditary disease while only 86 (73.1%) agreed that cervical cancer is a hereditary disease.

Table10 causes of cervical cancer

[DataSet7] J:\client2014\nyambane\data.sav

Table 1

	False		True		Total	
	Count	%	Count	%	Count	%
Cervical cancer is a sexually transmitted disease	185	70.1	79	29.9	264	100.0
HPV virus is the main cause of cervical cancer	74	34.1	143	65.9	217	100.0
HPV virus is sexually transmitted just like HIV/AIDS	152	67.6	73	32.4	225	100.0
If you are HIV positive then you also have cervical cancer	222	85.7	37	14.3	259	100.0
Having multiple sexual partners can cause one to get cervical cancer	109	41.3	155	58.7	264	100.0
Cervical cancer is caused by witchcraft	256	92.8	20	7.2	276	100.0
Anyone who is sexually active can get cervical cancer even if you had sex with only one partner	120	44.6	149	55.4	269	100.0
All women are potentially at risk of developing cervical cancer at one time in their life	80	28.9	197	71.1	277	100.0
Early age of first intercourse may cause cervical cancer	132	51.2	126	48.8	258	100.0
Having a weekend immune system may cause one to have cervical cancer	143	58.4	102	41.6	245	100.0
Women who have reached menopause can also get cervical cancer	66	24.6	202	75.4	268	100.0
Cervical cancer is a hereditary disease	174	66.9	86	33.1	260	100.0
Prolonged use of contraceptives can cause cervical cancer	134	51.7	125	48.3	259	100.0
Having many children can cause one to have cervical cancer	228	86.4	36	13.6	264	100.0
History of sexually transmitted infections can cause cervical cancer	97	37.5	162	62.5	259	100.0
Cigarette smoking can cause cervical cancer	139	53.9	119	46.1	258	100.0
Long term oral contraceptives can cause cervical cancer	145	57.3	108	42.7	253	100.0
Low carotene or low vitamin C intake can cause cervical cancer	169	72.8	63	27.2	232	100.0
I can get cervical cancer if I don't go for routine screening	12	4.4	258	95.6	270	100.0

Other risk factors such as low vitamin C is not known by a whole 169 (72.8) respondents, making cervical cancer a disease of the poor population. This corresponds with Agarwal *et al* (1993) who states that low vitamin C intake is a major contributor to cervical cancer infection. This means that most of the vulnerable women will stay ignorant and as such fail to take steps towards the prevention of cervical cancer, say, going for screening.

HPV is the main cause of cervical cancer but again that is transmitted sexually just like HIV/AIDS and a big percentage 152 (67.6%) did not have his information from the study findings.

According to (Bosch F. *et al,* 1995), HPVs, which are transmitted sexually is the main cause of cervical cancer worldwide. Women who are HIV positive are also likely to test positive for cervical cancer but according to the study findings, most of the respondents 222 (85.7%) did not know and only 73 (32.4%) knew that cervical cancer is a sexually transmitted disease. On whether sexual promiscuity can cause cervical cancer, 109 (41.3%) did not think so while 155 (58.7%) agreed that having many sexual partners can cause one to get cervical cancer.

Eight (28.9%) did not believe that all women are potentially at risk of developing cervical cancer at any one time in their lives while most 197 (71.1%) agreed that all women are at risk of contracting cervical cancer; but again even if they knew, the fact that they have not done a pap smear is an indication of low knowledge levels or knowledge but which is not helpful to them because they are not taking the right steps towards the prevention of cervical cancer.

Other risk factors such as early marriage, polygamous marriage, multiple sexual partners, cigarette smoking contribute to the invasion of cervical cancer as pointed out by Bayo, *et al* (2002), and Brinton *et al* (1989), but again, this is not known by majority of the respondents as shown in the study findings.

Symptoms of cervical cancer

Table 1

	False %	True %	Total %
Abnormal vaginal discharge may suggest that one has cervical cancer	33.6	66.4	100.0
Any abnormal bleeding means one may have cervical cancer	52.9	47.1	100.0
If you bleed after periods then you have cervical cancer	82.0	18.0	100.0
Bleeding between periods may mean you have cervical cancer	74.0	26.0	100.0
Discomfort during intercourse may mean you have cervical cancer	58.4	41.6	100.0
If you have reached menopause and you start bleeding it means you have cervical cancer	68.5	31.5	100.0
A woman can have cervical cancer even when they don't have any symptoms	32.1	67.9	100.0

Questions regarding knowledge of risk factors, symptoms, such as abnormal bleeding, painful sexual intercourse and postmenopausal symptoms were asked. Measures for cervical cancer were scored and pulled together and the mean score was computed to determine the overall knowledge of respondents on symptoms of cervical cancer. Respondents scored average and above were considered as knowledgeable otherwise not. Of those who responded, only cumulative 199.1% knew about the symptoms of cervical cancer while majority at 300.9% did not know about the symptoms.

Severity of cervical cancer

Tables Severity of cervical cancer (%) [DataSet7] J:\client2014\nyambane\data.sav

Table 1

	False %	True %	Total %
Cervical cancer is a dangerous disease	7.3	92.7	100.0
All women are at risk of getting cervical cancer	11.8	88.2	100.0
A woman can have cervical cancer even when they don't have any symptoms	24.7	75.3	100.0
The cervical cancer vaccine can cause barrenness among young women	57.0	43.0	100.0
If you do not go screening for cancer, you are at risk of dying of cervical cancer	31.4	68.6	100.0
Cervical cancer has no cure when detected at late stages	24.0	76.0	100.0
Cervical cancer has no cure if detected late	25.8	74.2	100.0
If i go for cervical cancer screening people will think i am immoral	79.0	21.0	100.0
Going for cervical pap smear is very shameful	76.9	23.1	100.0
If you are diagnosed with cervical cancer, then you will die	80.5	19.5	100.0
Screening for cervical cancer is very painful	70.2	29.8	100.0
If my mother died or sister got cervical cancer, i am also at risk of contracting cervical cancer	70.7	29.3	100.0

Respondents were asked about what they thought about severity and danger of cervical cancer. The information was meant to establish the severity of cervical cancer and whether that information would prompt them to take steps towards cervical cancer prevention. The information is outlined in the Health Belief Model by (Rosenstock, 1966; 1974, and Becker MH (ed) 1974) which has been used in this study. The model hypothesizes that a health-related action will depend on the realization of severity of a health problem and get a cue to action towards the eradication of the problem based on its severity. Of the respondents, cumulative percentage of 559.3% did not think cervical cancer was a dangerous disease while 640.7% thought cervical cancer is very a dangerous disease. For instance only 7.3% of the respondents did not think the disease is dangerous while a big number 92% thought the disease is dangerous. But as to whether that realization has lead them to take action remains to be seen because cervical cancer is a leading killer in women of reproductive ages in Kenya, (Kenya Ministry of Public Health, 2009). The issues of stigmatization come into play in the way the respondents answered the questions. For instance, 74% know that cervical cancer has no cure when detected late and 68.6% stated that failure to go for cervical cancer screening puts one at risk of death. Yet another cumulative percentage of 73.9% who think going for screening is very shameful or people will think one is immoral or is very painful. So this may cause women to shy away from going for screening and hence putting their lives at risk of cervical cancer infection.

Estimates of the percentage of women who do not attend for colposcopy varies widely, between around 12% and 50%,, depending on centre and patient population. There are two likely explanations of this non-compliance, (Lesman G. Miller SM Scarborough *et al* 1991, Paskett ED, White E, Carter WB, Chu J 1990). First, as compliance is related to the patient's perception of the severity of the disorder or the risk of possible infection, women may not consider the receipt of an abnormal smear as sufficiently serious to comply with health advice. Alternatively, women may be too distressed to attend, (Becker MH, Maiman LA 1980). Support for the latter explanation comes from studies that examine women's understandings of, and reactions to, an abnormal cervical smear result. Many women believe they have cancer and the fear of cancer remains high throughout subsequent investigations. Indeed, those women who do not attend for colposcopy show higher levels of anxiety and greater impairment in daily activities than women who do attend (Wardley, Pernet A, Stephens O 1995, Zaisker H, Mayer Hofer K, Joura EA *et al* 1997).

Tables Prevention and treatment of cervical cancer (%) [DataSet7] J:\client2014\nyambane\data.sav

Table 1

	False %	True %	Total %
Routine screening can help prevent cervical cancer	10.2	89.8	100.0
Having protected sex can help prevent cervical cancer	38.8	61.2	100.0
Sufficient knowledge can help women start going for routine screening	10.8	89.2	100.0
Awareness can help prevent cervical cancer	10.2	89.8	100.0
Cervical cancer can be cured if detected early	5.9	94.1	100.0
If you are HIV positive, then you need to go for cervical cancer screening	31.6	68.4	100.0
If your blood relative has died of cervical cancer, then you need to go for cervical cancer screening	47.4	52.6	100.0
If you avoid multiple sexual partners, you can prevent cervical cancer	32.5	67.5	100.0
I don't know how cervical cancer can be controlled	49.2	50.8	100.0
Cervical cancer has no cure	71.6	28.4	100.0
Traditional medicine can cure cancer	74.1	25.9	100.0
Cervical cancer is treated by doctor's medicine	33.2	66.8	100.0
Cervical cancer is treated by chemotherapy	23.4	76.6	100.0
Cervical cancer is treated by radiotherapy	37.8	62.2	100.0

Questions regarding knowledge of risk factors, symptoms, such as abnormal bleeding, painful sexual intercourse and postmenopausal symptoms were asked. Measures for cervical cancer were scored and pulled together and the mean score was computed to determine the overall knowledge of respondents on symptoms of cervical cancer. Respondents scored average and above were considered as knowledgeable otherwise not. Of those who responded, only cumulative 199.1% knew about the symptoms of cervical cancer while majority at 300.9% did not know about the symptoms.

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Going for cervical pap smear is very shameful	76.9	23.1	100.0
If you are diagnosed with cervical cancer, then you will die	80.5	19.5	100.0
Screening for cervical cancer is very painful	70.2	29.8	100.0
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Of the total number of respondents interviewed, cumulative percentage of 476.7% did not know preventive measures of cervical cancer while 923.3% knew preventive measures of cervical cancer. For instance a big percentage, 66.8% know that cervical cancer has no cure. Another 76.6% know that cervical cancer can be treated by chemotherapy while another 62.2% reported to know that cervical cancer is treated by radiotherapy. However, the knowledge of the treatment of cervical cancer does not necessarily translate to positive behavior change like going for screening because a big percentage 64.7% reported not to have ever done a pap smear. So what the women do with the information they have is an issue of concern bearing in mind that cervical cancer is the second most common cancer among women,(WHO 2010) and the most common cause of cancer deaths among women in Africa, (Parkin *et al* 2003). It is important to note that but the big numbers of mortality as a result of cervical cancer is an issue of concern. What the women do with the knowledge they have remains an issue that this study sort to explore and which can form a basis of future research.

A study carried out by Were (2011) found out that major common barriers to screening included fear of abnormal results, wrong information, stigma, limited or misinformation and lack of finances, (Were, 2011). This is what forms this study, i.e. to investigate awareness levels, type of information and the consequences of that information among the vulnerable women.

It is of particular importance to determine ethnicity-related reasons for non-participation in the screening programme. Fear, stigma, anxiety, cultural norms and beliefs may hinder women's participation in screening although they may have some knowledge on cervical cancer prevention. Although compliance decreases when cultural norms contradict health advice, this can be countered if health care providers are aware, and show understanding, of possible health care and cultural conflicts, (Ley P. 1989, Parazzini K, Lavecchia C, Negri E *et al* 1989).

A majority of cervical cancer cases are detected at an advanced and symptomatic stage, at which time the possibilities of cure are very low. While lack of services is an important determinant of continually high rates of cervical cancer, another important aspect is the apparent lack of knowledge and awareness about the disease. Myths and misconceptions surrounding the disease can lead to poor utilization of screening services wherever they exist, (Mcfarland MD, 2003).

On the source of information on all aspects of the study that were being measured, radio and television scored low as sources of information about cervical cancer. They stand at an average of 17.0% on each question asked while other sources stand at an average of over 60.0%. Those that did not indicate the source of their information stood at 33.4%. So this confirms the hypothesis of the study that the electronic media has not played a major role in creating awareness about cervical cancer. The study findings further demonstrated that knowledge levels about cervical cancer especially as created by electronic media are very low. This state of affairs leads to majority of women presenting with symptoms when the disease has advanced, making treatment and cure very difficult; hence they high mortality rate as a result of cervical cancer in Kenya, and that is what informed the study.

CONCLUSION

Cervical cancer is still a problem in sub Sahara Africa, making it a leading killer among women of reproductive age. Concerted and focused efforts by relevant stakeholders need to be put in place towards the reduction of the burden of the disease is urgently needed.

Preventive messages by the electronic media need to be tailored towards the specific issues at which women are vulnerable such as fear, stigma, cultural beliefs, gender stereotyping and poverty, myths and misconceptions while being careful to give factual information about cervical cancer. However, as things stand, efforts by the electronic media to come up with messages specifically targeted at women's vulnerability to cervical cancer are largely lacking. Most messages are general and not formulated to address a specific audience with their unique socio-demographic and cultural characteristics. There are no documented cancer reduction and screening services based on awareness created by the electronic media.

There is also need for concerted efforts between the media, health professionals and policy makers to come up with comprehensive messages that address causes, symptoms, preventive and care of cervical cancer. Issues of cultural beliefs about cervical cancer also need to be addressed by the media. There is need to sensitize the government and policy makers, NGOs and other stakeholders to address this deadly disease which has now becoming worse killer than HIV/AIDs and maternal mortality rates. Media professionals and other stakeholders need to involve interpersonal communication and group discussions to come up with best preventive messages that can address the issues at which women are vulnerable to cervical cancer.

There is also the need to address some of the conditions that predispose to practices that favor the development and spread of the disease. These conditions include poverty, illiteracy, political instability and widespread underdevelopment. If advocacy can be directed at afore-mentions issues, then there can be a ray of hope in as far as prevention of cervical cancer in concerned.

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