Determinants of Cervical Cancer Screening Among HIV Infected Women in Comprehensive Care Centre at Kisii Teaching and Referral Hospital, Kisii County, Kenya

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Abstract— Women infected with HIV are five times more likely to be diagnosed with cervical because HIV infection weakens the immune system thus reducing the body's ability to fight infections that are more likely to lead to cancer. HPV causes cervical cancer more in HIV positive women than those who are not infected. This study aimed at finding out the determinants of uptake of cervical cancer screening among HIV positive women in comprehensive care centers about cervical cancer screening. A cross-sectional survey was conducted at the HIV comprehensive care center (CCC) at Kisii Teaching and Referral Hospital (KTRH), Kenya. A sample size of 255 respondents was identified purposively. A pretested questionnaire was used to obtain information by trained research assistants.

Keywords— Cervical cancer, cancer knowledge, cancer screening, acquired immune deficiency syndrome, human immune deficiency virus, invasive cervical cancer.

I. INTRODUCTION

Globally, cervical cancer is the third most common cancer among women while in Kenya, it is the second most common cancer among women and of significant is that Kenya is among the countries with the highest HIV burden in Kenya (Rositch et al., 2012). Despite the fact that this cancer is preventable, it is estimated that the number of cases will double by 2025 (WHO, 2011). This is partly due to the fact that a majority of the patients presents in the late stages of the disease where the available therapy are ineffective (Ezechi, et al., 2013) or due to co-infection with HIV, that increases the risk of developing cervical cancer or aggressiveness of existing cervical lesions (Rositch et al., 2012). Although studies in high-income countries have shown that cervical cancer can be eliminated by efficient cervical cancer screening programs, screening coverage is still low in developing countries. Data from Western Kenya indicate that cervical cancer screening coverage is still low (Morema *et al* 2014). Therefore, high mortality among cervical cancer patients reported in Kenya may be attributed to low uptake of cervical cancer screening (Gichangi *et al.*, 2002). The morbidity and mortality associated with cervical cancer in Kenya may be further compounded by high incidence of cervical cancer among HIV positive women (Huchko *et al.*, 2011).

Previous studies have shown that integrating cervical cancer prevention with HIV care services is associated with reduction of morbidity and mortality and also improved treatment outcomes in cervical cancer patients. Cervical cancer screening using Pap smear and treatment of pre-cancer lesions or early cancer has been shown to prevent up to 80% of invasive cervical cancer in poor resource settings. But there is still high mortality associated with cervical cancer in Kenya due to low uptake of cervical cancer screening services (Gichangi et al., 2002). Overall these studies indicate the uptake of cervical cancer screening among HIV positive women attending CCC's may be influenced by multiplicity of context specific factors. However, there is still a paucity of data on the predictors of cervical cancer screening knowledge and acceptability among HIV positive Kenyan women.

II. REVIEW OF LITERATURE

The global cancer burden had risen to 14.1 million new cases in 2012 and 8.2 million deaths as compared to 12.7 million and 7.6 million respectively in 2008 (Release, 2013). Cervical cancer is the fifth most common cancer worldwide with highest incidence in Central America followed by East and Southern Africa. Globally, an estimated 529,409 cervical cancer cases occurred with 274,883 deaths resulting from the same in the year 2008 (Kimani, 2012). The Sub-Saharan Africa (SSA) records 34.8 newly diagnosed cases of cervical cancer per 100,000women annually and 22.5 cancer deaths per 100,000 women from the disease (Release, 2013). North America as a comparison has 6.6 newly diagnosed cases of cancer per 100,000 annually and 2.5 deaths per 100,000 women dying from the disease. This drastic difference can be explained by lack of access to effective screening programmes and facilities for early detection and treatment of precancerous lesions (Release, 2013). Cervical cancer is easily detectable and curable in its early stages, unfortunately only about 5% of women in developing countries undergo screening for cervical cancer as compared to over 40% in developed countries (Kimani, 2012). There are 2,454 women diagnosed with cervical cancer annually in Kenya with 1,676 deaths resultant

and in the absence of accelerated interventions for early detection and treatment, the incidence of cervical cancer is projected to rise to 4,261 new cases and 2,955 deaths resulting from the same by the year 2025 (Kimani, 2012).

Conceptual Framework

Schematic conceptual framework of the determinants of cervical cancer screening among HIV infected women in comprehensive care centre at Kisii Teaching and Referral Hospital, Kisii County, Kenya.
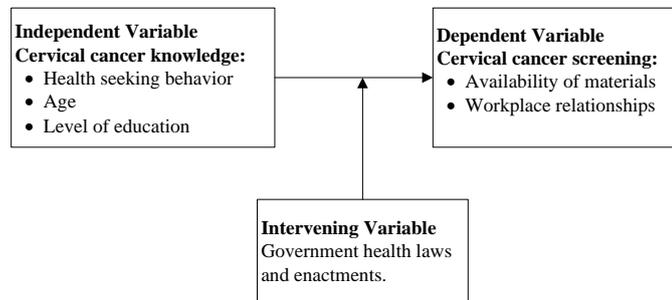
Fig. 1. Schematic conceptual framework.
Source: Researcher (2017)

General Objective

Determinants of cervical cancer screening among HIV infected women in comprehensive care centre at Kisii Teaching and Referral Hospital, Kisii County, Kenya.

Specific Objective

1. To determine the cervical cancer knowledge of HIV positive women aged between 15 to 60 years enrolled at KTRH CCC

Research Question

1. What is the level of knowledge on cervical cancer among HIV positive women aged 15 to 60 years enrolled at KTRH CCC?

Study Limitations

i. Respondents who might treat the researcher with suspicion and withhold some information which may hamper the outcome of the research.

III. RESEARCH METHODOLOGY

Study Design and Setting

Cross sectional study method with both quantitative and qualitative components employed. Questionnaires were developed, pretested and corrected and then administered to sampled HIV positive women enrolled at the CCC for the purpose of collecting snap short information. In-depth interviews using structured questionnaires were conducted with health service providers in management portfolio. Qualitative data was further obtained through two Focus Group Discussions (FGD's) with female patients enrolled at the CCC.

Study Population

The study targeted women aged 18 to 60 years enrolled at KTRH CCC who were seen at the center for their monthly refill, or medical appointment or for registration into HIV care from January 2012 to December 2013.

Study Sample Size Determination

The sample size for the study was determined using Raosoft sample size calculator (http://www.raosoft.com/samplesize.html) (Raosoft, 2004). Based on the hospital records, 753 HIV positive women had been registered at the comprehensive care centers of KTRH, using the most conservative response distribution of 50%, allowing 2.5% margin of error at 95% confidence interval, the required sample size was calculated to be 255 as follows:

$n = Z^2pq/e^2$

Where Z is the statistical constant representing a 95% confidence interval = 1.96.

p is the possibility of success =50%.

q is the possibility of failure that is 1-p=0.5

e is the desired precision level or allowed standard sampling error = 5% or 0.05.

This gives n= [1.96^2 0.5x 0.5] ÷ 0.05^2=384.16

But the target population is below 10,000. Therefore the final sample size (nf) Will be calculated as follows

nf =n ÷ [1+(n/N)] where N = target population=753

nf =384 ÷[1+(384/753)] therefore nf = 255

Sampling Technique

Sampling was done by purposive sampling method in which all women in the sampling frame stood an equal chance of being selected in the study sample. Systematic random sampling was done by selecting subjects at certain intervals from the entire sampling frame of HIV positive women enrolled at the CCC from January 2012 to December 2013 which was 753 females. Those who met the inclusion criteria of being a HIV positive female aged 18-60 years attending CCC at KTRH and accepted to participate and signed an informed consent form were enrolled in the study and the study questionnaires were administered thereafter.

IV. RESEARCH INSTRUMENTS

Structured Questionnaire.

The semi-structured questionnaire was administered for approximately 10 minutes per respondent by an interviewer.

Key Informant Interviews

Key informant interview schedule contained a number of guiding questions for in depth interview with health workers and managers.

Focus Group Discussion

FGD guide contained questions that aimed to explore issues relating to the knowledge. The participants for the FGD were sampled using systematic random sampling method.

V. DATA MANAGEMENT AND ANALYSIS

Data Collection Instruments

The data collection tools and instruments were pre-tested in Keumbu level 4 hospital to check for their reliability and validity. Data collection was done by use of a structured

questionnaire administered to female clients enrolled at CCC, two focus group discussions using an FGD guide and a Key informant interviews schedule to health care providers and managers working at CCC.

Data Analysis

Data collection was carried out for 5 days with the help of trained research assistants. On daily basis, data tools were checked for missing values and mistakes corrected before data entry. All analysis was performed using SAS version 9.2 software (SAS Institute Inc., Cary, North Carolina, USA). Associations were determined using Chi-square test. In addition the association between potential predictors of uptake of cervical cancer screening were determined by univariate regression analyses. Qualitative data was coded then synthesized and grouped into exhaustive categories. The categories were then merged into themes emerging from the FGDs.

Ethical Considerations

Ethical clearance was sought from the University of Eastern Africa, Baraton, Ethical Review Board (REC UEAB/15/11/2015). Written informed consent was sought from the study participants prior to data collection and confidentiality was maintained throughout the study.

VI. EMPIRICAL ANALYSIS RESULTS

Knowledge and Beliefs Regarding Cervical Cancer Screening

The study assessed the knowledge and belief of the respondents regarding cervical cancer screening.
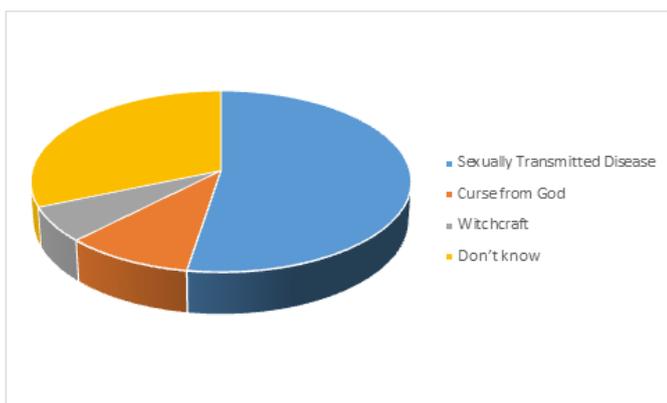
Fig. 2. What is cervical cancer?

A majority (52.55%) of the women believed that cervical cancer is a sexually transmitted disease (STD), 9.80% it is a curse from God, and 6.27% associated it with witchcraft while 31.37% did not know the cause (Figure 2). Out of those who were interviewed, one participant described cervical cancer as *"a very bad disease of the womb that renders women barren."* Another said *"...cancer comes when you sleep with more than three men"* yet another one said *"... disease resulting from lowered body immunity"*
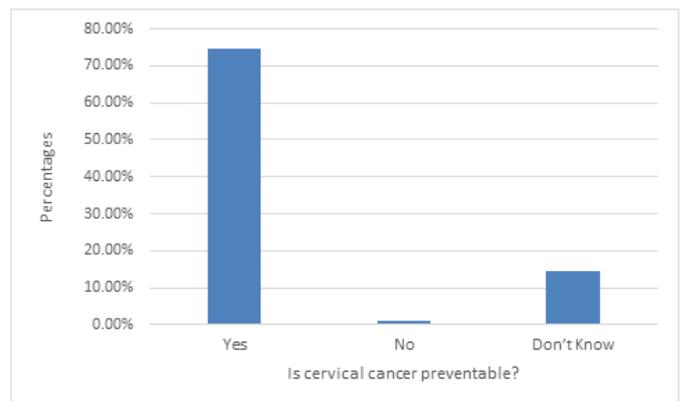
Fig. 3. Whether cervical cancer is preventable.

According to figure 3, majority of the women (74.51%) reported that cervical cancer is preventable relative to 10.98% who reported that it was not. Further, respondents felt that cancer is preventable if detected early before it has spread to other parts of the body.
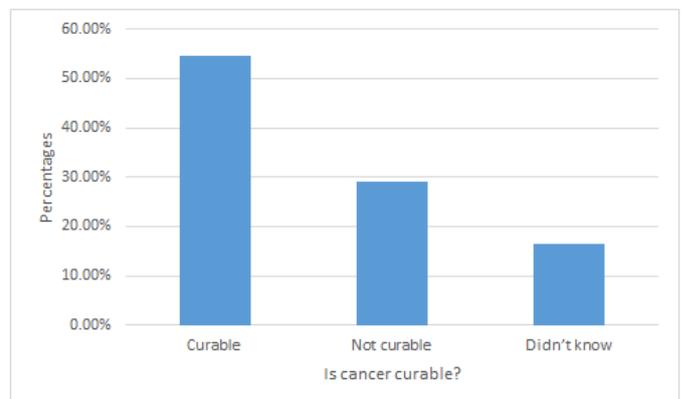
Fig. 4. Whether cervical cancer is curable.

Moreover, majority (54.51%) of the women reported that cervical cancer is curable, 29.02% it's not curable while 16.47% didn't know (Figure 4). Participants were of mixed opinions others said cervical cancer has a cure others said it does not have a cure.
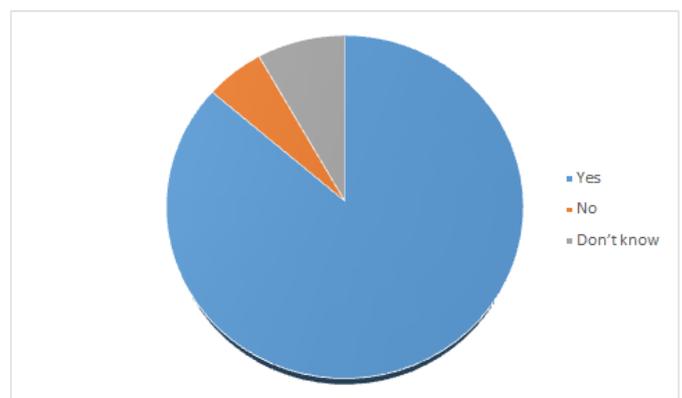
VII. Discussions

In determining the cervical cancer knowledge among the target population, the study revealed that a majority 81.18 %, 74.51% and 54.51% of the women reported knew that it is important to undergo cervical cancer screening; cervical cancer is preventable and curable respectively. But despite the fact that a majority of women were knowledgeable about the importance of cervical cancer screening only 36.08% reported to have undergone cervical cancer screening. The study through the FGD confirmed that clients understand the importance of cervical cancer screening. Although this is below the national target of 75% (MOH, 2005; (Morema et al., 2014) it was still higher than the previous level of uptake reported in Kenya and Ethiopia (Morema et al., 2014). This may be due to the fact that these studies looked at the general population and not HIV infected women attending comprehensive care centers. Studies have revealed that knowledge about cervical cancer and its risk factors is high among women in sub-Saharan Africa. Indeed studies have shown that improved awareness through education greatly improve health seeking behavior and uptake of cervical cancer screening (Ezechi et al., 2013). The Kenyan Ministry of Health developed national guidelines for antiretroviral therapy in 2011 that also integrated cervical cancer screening and management (MOH, 2014) that has not only expanded screening services but also increased cervical cancer screening awareness.

VIII. Conclusions

The study shows that HIV positive women in comprehensive care centers are Knowledgeable of cervical cancer in that they know it is preventable and is curable. In terms of practice, the women are willing to undergo cervical cancer screening hence integrating cervical cancer services with HIV care will greatly improve will strengthen HIV and cervical cancer services.

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