

Individual-level Determinants of Cervical Cancer Screening Uptake among Women in Kirinyaga County in Kenya.

Authors

Monica W. WAMBUGU⁽¹⁾; Anthony K. WANYORO⁽²⁾; Margaret N. KERAKA⁽³⁾

⁽²⁾ *Kenyatta University, Kenya (wanyoro.anthony@ku.ac.ke).*

⁽³⁾ *Kenyatta University, Kenya (keraka.margaret@ku.ac.ke).*

^(1,2,3) *Obstetrics and Gynaecology Department, Kenyatta University, Kenya.*

Main author email: wambugumonicah480@gmail.com

Abstract

This study aimed to assess the determinants of uptake of cervical cancer screening among women in Kirinyaga County, Kenya. The study adopted a randomised control trial study design with a sample size of 206 women aged between 25- 69 years. Respondents were randomised into control and intervention arms. Both qualitative and quantitative data was collected. Analysis was done using thematic content for qualitative data; descriptive statistics were used to summarise categorical variables. Bivariate analysis using the Fisher exact and Chi-square was also applied. Factors with a $p < 0.05$ were further analysed in multivariate analysis. Respondents who had a high perception of being susceptible to cervical cancer were 4.26 times most likely to attend cervical cancer screening than those who did not. Respondents who had a high perception of cervical cancer as a serious disease were 3.46 times more likely to stick to cervical cancer screening than those who did not. This study concluded that it was essential to ensure that the girls were educated to a higher level and increase the knowledge of cervical cancer screening in the communities. In addition, an increase in formal employment and household income would lead to increased uptake of cervical cancer screening. This study recommends that Kirinyaga County and Kerugoya County Referral Hospital's management provide health education through mobile phone technology to bring positive perceptions on the importance of cervical cancer screening.

Key Terms: cervical cancer screening, perception, provider-initiated calls.

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1.0 INTRODUCTION

Every day many women die from cervical cancer in the world with an estimated annual incidence of over 570,000 and an annual mortality of over 311,000 (50%) globally (Ferlay et al., 2018). 90 per cent of the deaths occur in developing countries (GLOBOCAN, 2017). The World Health Organization has recommended organised screening for cervical cancer as a preventive measure for adult women. Organised screening increases the chances of early detection of cervical abnormalities. However, many women continue to appear in the health facilities when cancer has advanced, making it difficult to treat (Bruni et al., 2018). This has been accredited to the lack of an organised and effective screening system, among other factors within the populations at risk. For a cervical cancer screening program to be termed as effective, at least 70 per cent of the women at risk should have been enrolled into a regular screening cycle that is comprised of an effective recall mechanism for scheduled screening (WHO, 2014).

2.0 LITERATURE REVIEW

Cervical cancer is the second most frequent malignancy affecting women worldwide (Diana *et al.*, 2020). It is a malignant condition affecting the cervix; the lower most part of the uterus. It is asymptomatic in the early stages and may present with abnormal vaginal bleeding in the advanced stages alongside other symptoms. It is the leading genital tract cancer in the less developed nations and a major contributor to cancer deaths in these countries (Solomon *et al.*, 2019). Cervical cancer is of Public Health concern because it interferes with the infected woman's quality life years and causes many deaths, despite it being preventable (Finocchiaro-Kessler *et al.*, 2016). Cervical cancer is a malignant tumor that occurs within the cells of the cervix- the lowermost part of the uterus that connects to the vagina (birth canal).

The primary cause of pre-cancerous and cancerous lesions is the Human Papillomavirus types 16 and 18 (high-risk or oncogenic) that cause 70% of the cancer. Pre-disposing factors for cervical cancer are: multiple sexual partners, multi-parity, early sexual debut, other sexually transmitted infections (STIs), a weak immune system and smoking. Cervical cancer can be classified according to stages of progress. These are: Stage 0: Carcinoma in situ. Abnormal cells in the innermost lining of the cervix, Stage I: Invasive carcinoma of the cervix, Stage II: Local-regional spread of the cancer beyond the uterus but not to the pelvic sidewall, or the lower third of the vagina, Stage III: Cancerous spread to the pelvic sidewall or the lower third of the vagina, and/or hydronephrosis or a non-functioning kidney that is incident to invasion of the ureter. Stage IV: Cancerous spread beyond the true pelvis or into the mucosa of the bladder or rectum (WHO, 2014). Cervical cancer is slow progressing and has no symptoms in the initial phases, but in the final stages, symptoms may include vaginal bleeding, pelvic pain and pain during sexual intercourse (WHO, 2014)

Over the past decade, a review of hospital records from hospitals in Nairobi, Kenya, has shown the trend of cervical cancer accounting for up to 70-80 per cent of all cancers affecting the female reproductive system, with 10-15 new cases weekly (Korir et al., 2015). Kenya is ranked among the top twenty countries in

the world with high fatalities of cervical cases (Were et al., 2010). Screening of cervical cancer uptake in Kenya is low at an average of 3.2 per cent for all women, 4.0 per cent in the urban areas and 2.6 per cent in the rural areas (Bruni et al., 2018). Most (92%) cervical cancer patients in Kirinyaga County seek treatment when the disease is in the final stages, making it difficult to treat (Ng'ang'a et al, 2018). This can be attributed to the fact that the county follows the guidelines set up by the National Cervical Cancer Screening Strategy, where most of the screening is concentrated on women attending reproductive health clinics and HIV care. This leaves the larger population of women at risk within the communities who ideally should be on a regular screening schedule but only seek medical attention when they have signs and symptoms when the cancer is fully blown.

3.0 METHODS

The study adopted a randomised control trial study design with a sample size of 206 women aged between 25- 69 years. Respondents were randomised into control and intervention arms. Both qualitative and quantitative data was collected. Analysis was done using thematic content for qualitative data; descriptive statistics were used to summarise categorical variables. Bivariate analysis using the Fisher exact and Chi-square was also applied. Factors with a $p < 0.05$ were further analysed in multivariate analysis. Respondents who had a high perception of being susceptible to cervical cancer were 4.26 times most likely to attend cervical cancer screening than those who did not. Respondents who had a high perception of cervical cancer as a serious disease were 3.46 times more likely to stick to cervical cancer screening than those who did not.

4.0 RESULTS AND DISCUSSION

Cervical cancer screening as a prevention measure for cervical cancer involves enrolling into a regular system of screening starting from the age of 25 years. Unfortunately, the level of uptake of cervical cancer in very few women (14.6%) was found to have been screened for cervical cancer before and only (6.04%) indicated to be on a regular screening schedule. Figure 1 shows the uptake of cervical cancer screening.

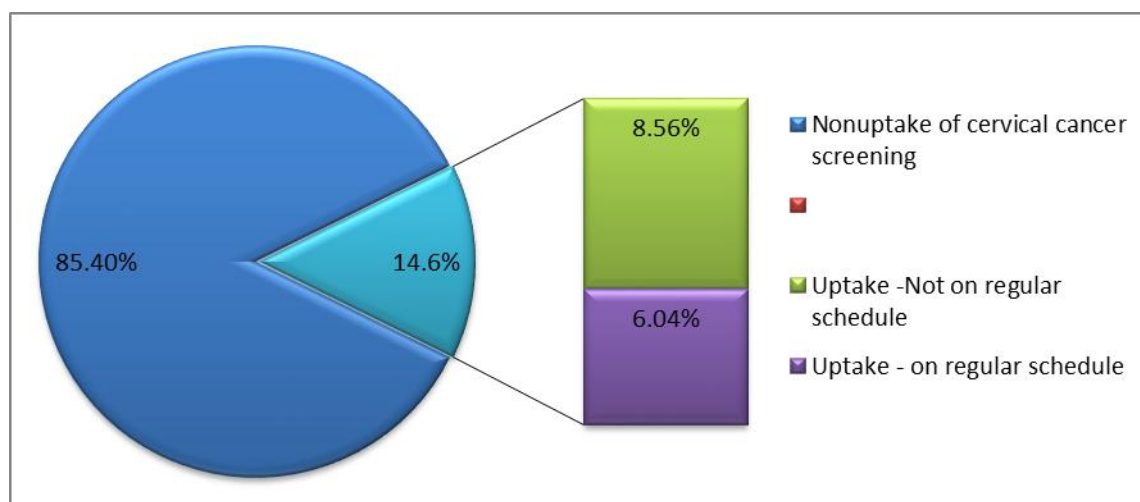


Figure 1: Uptake of Cervical Cancer Screening

Factors associated with uptake of cervical cancer screening.

Women aged 25 years and below were associated with the least (5%) uptake of cervical cancer screening compared to women aged 35-39 years (69%). Education level had a significant association with the uptake of cervical cancer screening, where women with secondary education and above had a higher uptake (73%) than those with a lower education level. Being married was associated with higher uptake (57%) of cervical cancer screening compared to those who were not married during the study. Being employed and having a high household income was associated with a higher uptake of cervical cancer (89% and 75%), respectively. Finally, having previous knowledge of cervical cancer was associated with higher uptake (90%) of cervical cancer screening in comparison to those who lacked have previous knowledge of cervical cancer screening. Table 1 shows factors associated with uptake of cervical cancer screening.

Determinants of Cervical Cancer Screening Uptake

A factor was deemed a determinant of cervical cancer screening uptake if $P < 0.05$ on logistic regression. The likelihood that a woman will uptake cervical cancer screening is increased approximately 5 times if they had secondary education (Odds Ratio= 4.9). Women who are married were two times more likely to uptake cervical cancer screening (Odds Ratio=2.1). Having formal employment increased the chances of attending screening by approximately 6 times (Odds Ratio= 5.7), while women aged between 44-49 years were likely to uptake screening by up to 3 times.

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Table 1 Influence of Social Demographic Factors on Uptake of Cervical Cancer Screening

Marital Status	Odds Ratio	95% CI	p-value
Single (ref.)	1.00		
Married	2.10	0.30-1.60	0.566
Divorced	0.50	0.10-2.50	0.340
Widowed	0.80	0.20-3.50	0.812
Age			
25-29 (ref.)	1.00		
30-34	1.67	0.72-3.46	0.126
35-39	2.22	1.08-3.48	0.035
40-44	3.24	0.82-4.76	0.046
44-49	1.73	0.79-4.36	0.203
50 <	1.02	0.57-3.45	0.104
Education			
Primary (ref)	1.00		
Secondary	4.91	0.46-1.06	0.138
Tertiary	1.06	0.46-1.06	0.107
No formal	2.29	0.57-1.04	0.126
Employment			
Formally employed	5.73	0.70-8.90	0.200
Self-employed (ref)	1.00		
Casual	1.30	0.30-0.40	0.100
Unemployed	2.20	0.30- 6.30	0.418

Influence of Individual Factors on Uptake of Cervical Cancer Screening

Participants who had knowledge of cervical cancer and cervical cancer screening were likely to adhere to cervical cancer screening (OR 3.05 CI 4.79-9.63 P<0.001) and (OR 4.06 CI 3.68-7.52 P<0.001). The other factors lacked significant influence on the uptake of cervical cancer screening.

Table 2 Influence of Individual Factors on Uptake of Cervical Cancer Screening

Individual factors	Odds Ratio	95% CI	p-value
Age of sexual debut			
<18 yrs (ref)			
18-23yrs	0.30	0.35-6.45	0.061
24-29 yrs	0.90	0.40-1.80	0.677
>30 yrs	1.40	0.79-3.37	0.101
Take Alcohol			
Yes	1.75	0.82-3.71	0.150
No (ref)			
Ever smoked cigarettes			
Yes	1.06	0.40-1.05	0.138
No (ref)			
Knowledge of cervical cancer			
Yes	3.05	4.79-9.63	0.000
No (ref)			
Knowledge of cervical cancer screening			
Yes	4.06	3.68- 7.52	0.000
No (ref)			

This study contributes to understanding determinants of cervical cancer screening in Kirinyaga County, where the prevalence of this screening remains low. The cervical cancer screening regular schedule provides a platform for the women and the health care providers to interact. Its aim is to increase the early detection and treatment of cervical abnormalities. It was, therefore, important to determine the factors that influence its uptake. Education level was found to be a determinant of uptake of cervical cancer screening. Education has previously been found to be one of the factors that influence the utilisation of health services. Women with higher education of up to secondary level were more likely to uptake cervical cancer screening. In addition, education is associated with the appreciation of the importance of cervical cancer screening. These findings are consistent with other studies that suggest that a community can increase healthcare services

utilisation, including cervical cancer screening in places where educated women are highly concentrated (Bayu et al., 2016).

The type of employment and income was found to positively influence the uptake of cervical cancer screening. Women who were formally employed were more likely to enrol for cervical cancer screening. Screening uptake was also influenced by high household income. This concurs with previous studies that have found that employed women and household wealth have a positive association with cervical cancer screening (Gichoho et al., 2018). Thus, the households and individuals economic status is a determinant of the uptake of health services. The women marital status was found to have a positive association with the uptake of cervical cancer screening. Married women were seen to be more likely to enrol for cervical cancer screening compared to unmarried women. These findings did not concur with studies conducted elsewhere that showed that the marital status of a woman did not influence her influence of uptake of cervical cancer screening (Suzanne et al., 2020).

Women with previous knowledge of cervical cancer screening were more likely to uptake cervical cancer screening than those without previous knowledge. This concurs with previous studies conducted in Nigeria, where an intervention increased the level of knowledge and awareness of cervical cancer and screening, increasing the uptake of cervical cancer screening (Adedokun & Ayodapo, 2018).

5.0 CONCLUSIONS AND RECOMMENDATIONS

Conclusion: This research has shown that cervical cancer uptake is low at 14.6 per cent, with only 6.4 per cent on the recommended regular cervical cancer screening. The main aim of the study was to elucidate the determinants of cervical cancer screening uptake. This study concluded that it was essential to ensure that the girls were educated to a higher level and increase the knowledge of cervical cancer screening in the communities. In addition, an increase in formal employment and household income would lead to increased uptake of cervical cancer screening.

Recommendations: This study recommended that since less than a fifth of women at risk had been screened for cervical cancer, the Ministry of Health and the county government should increase awareness of cervical cancer screening among women at risk. The study also recommended that the government devolve a way to increase girls' education. This study found that increased household income and having formal employment. Therefore, the recommendation was that the strategies to increase household and increase employment.

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