

# Factors Affecting the Uptake of Cervical Cancer Screening in Mama Lucy Kibaki Hospital, Nairobi, Kenya

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**Abstract:** Cervical malignancy afflicts women of all societies. In Kenya, 4,802 women are diagnosed with cervical malignancy and almost 2500 die annually with only 3.2% of cervical screening uptake. The Main goal of this study was to find out the factors that contribute to the uptake of cervical screening at Mama Lucy Kibaki Hospital. This was a descriptive and cross-sectional study that used a purposeful sampling method. An interview-administered questionnaire was used to collect data from women and hospital key informants. Multivariate regression was used to analyse associations between study variables. A total of 246 participants were recruited. Uptake of cervical screening was 23.1%, with 83.6% being aware of cervical cancer. Fear of results (69.5%), lack of information (69.8%) and fear of the screening procedure (65.2%) were major cervical screening barriers. Free cervical screening (93.5%) comprehensive cancer health education (90.2%), voluntary cervical screening centres (84.9%), mass media cervical cancer campaigns (83.3%) and cervical cancer screening mobile clinics (81.7%) to be the likely motivators to cervical screening uptake. Multivariate regression showed that older women participated more in uptake than young women ( $p = 0.001$ ), those who had used contraceptives ( $p=0.001$ ) and those with higher income ( $p = 0.03$ ). In conclusion, there was a low uptake of screening for cervical cancer disease. A comprehensive and appropriate sensitization program is required, which eventually may increase uptake of cervical screening.

**Keywords:** Cervical Cancer Screening, Uptake, Kenya

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## 1. Introduction

Cervical malignancy has been found to be the 2<sup>nd</sup> commonest women cancer universally [1]. Worldwide, in 2013, Over 500,000 new cases of cervical malignancy were reported with mortality of over 270,000 [2]. Amongst these, nearly 86% of the deaths were reported in less resource-endowed countries [2]. In Kenya, it is the 1st top most frequent female reproductive genital malignancy. Moreover, over 5000 females are found to be suffering from cervical cancer. Additionally, about 2500 die from it yearly [3, 4]. Studies from industrialized states have shown that organized programs for cervical screening enable majority of the

women to undertake Pap smear test. This has made it possible for most pre-cancer cells to be recognized early. Consequently, existing screening and timely management prevent almost 80% of cervical malignancies in these nations [5]. Therefore cervical malignancy mortality rate globally (52%) can be decreased through organized reproductive pelvic examination alongside with treatment program that is effective [6]. This may lead to a significant reduction of overall prevalence and deaths from cervical cancer owing to existing structured screening programs [7].

In Kenya, the low rate of cervical cancer screening uptake amongst women is alarming. Statistics indicate that very few (3.2%) female aged between 18 - 69 years have undertaken

cervical screening test. This is nonetheless below the 75% goal as projected in Kenya national strategic plan [8], this target is yet to be met. Furthermore, it has been estimated that by the year 2025, the incidence of cancer of the cervix yearly, in Kenya, will be nearly above 4000 [4]. Additionally, other statistics indicate that each week in Nairobi there are 10 to 15 incidences of cervical cancer [9]. Therefore the importance of understanding the factors that will encourage women to seek cervical screening services remains the task of this particular study. A previous study carried out [10] found a number of factors that hinder women not to seek cervical cancer screening services in developing countries. An earlier study revealed that most common barriers to cervical screening comprise; inadequate information about female genital cancer, fear of positive results, finance, and health workers among others. Similarly, a number of factors that have been identified and has been used to scale up cervical screening uptake, They included provision of screening appointments, health education, client reminders, advocacy in mass media and appropriate appointment times for cervical screening [11]

The aim of this study was to determine uptake of cervical cancer screening, barriers, and factors that may improve utilization of cervical screening services.

## 2. Materials and Methods

### 2.1. Study Design and Site

The study was cross-sectional and descriptive. The study population comprised of females aged 15-49 years. They were purposefully selected from, family planning clinic, child welfare clinic and postnatal ward from Mama Lucy Kibaki Hospital in Nairobi. Additional, five key hospital informants who included, medical superintendent, hospital nursing manager, senior nursing officers in charge of child welfare clinic and postnatal ward and public health officer in charge were interviewed. Participants were recruited between August and October 2017.

### 2.2. Data Collection

An interviewer-administered questionnaire was used to collect data from the study participants. The participants were individually interviewed before or after they received health services in the respective study areas. They signed participation consent voluntarily before the interview. The Data collected comprised, social demographic information, previous screening uptake, barriers and motivating factors to cervical screening. In addition, data was collected from key informants who had worked in the hospital for more than three years. All collected data was entered and stored securely.

### 2.2. Data Analysis

The data was entered into Statistical Package for Social Scientists (SPSS, 1998) version 20.0 for analysis. Multivariate nominal regression analysis was performed to establish relationships among uptake of cervical screening and social demographic variables. Statistical significant of P-value <0.05 was taken as significant.

### 2.3. Ethical Consideration

Approvals of this study were obtained from Kenyatta National Hospital/University of Nairobi and Mama Lucy Kibaki hospital ethical Research Committees. Written informed consents were attained from all participants and confidentiality was guaranteed.

## 3. Results

### 3.1. Social Demographic Characteristics among Women at Mama Lucy Kibaki Hospital

A total of 246 women were recruited in the study. They were drawn from family planning clinic (39.7%, n = 98), child welfare clinic (32%, n = 79) and postnatal ward (28.3%, n = 70). The mean age (standard deviation) of the participants was 27.6 (6.0) years. Most of the women (66%) were from low-income estates which comprised, Kayole, Umoja, Dandora, Embakasi, and Eastleigh while others (34%) came from outside the study area (referred from neighbouring health facilities of Ruai and Kariobangi among others).

**Table 1.** Socio-Demographic Profile among Women at Mama Lucy Kibaki Hospital.

Variable	Frequency n (%)
Level of education	
Non-formal	1 (0.4)
Primary	56 (22.8)
Secondary	111 (45.1)
College	57 (23.2)
University	21 (8.5)
Marital status	
Married	202 (82.1)
Single	41 (16.7)
Widowed	1 (0.4)
Divorced	1 (0.4)
Separated	1 (0.4)
Income per month (n=129)	
<5000	28 (20.1)
5000-9999	39 (30.6)
10000-14999	31 (24.2)
>1500	31 (24.2)
Residence	
Dandora	14 (5.7)
Kayole	63 (25.6)
Umoja	70 (28.5)
Eastleigh	2 (0.8)
Embakasi	12 (4.9)
Other	86 (34.8)

Almost half of the participants (45.1%, n = 111) had at least a secondary level of education. Majority (82.2%, n = 202) were married and had at least a child (93.5%, n = 231) with a mean age of having a first child at 22.5 (3.8) years. Majority (76%, n = 129) had a source of income i.e. employed. Of those who were employed, 20.2% earned a monthly income of less than ksh 5,000 and 29.5% between ksh 5,000 and 9,999. Majority of the participants (98.8%, n = 244) were Christians and had ever used a family planning (72.1%, n = 178).

By multivariate regression, there was no association between level of education, income or marital status and the knowledge of prevention, symptoms, and treatment of cervical cancer (P = 0.433) (Table 1)

**3.2. Uptake of Cervical Cancer Screening among Women Participants at Mama Lucy Kibaki Hospital**

Twenty three percent of the participants (n=57) had ever

accessed cervical cancer screening preceding this study. Three of these participants had been screened at Mama Lucy hospital. The rest (n=54) were screened in other health facilities. On multivariate regression, participants who had been screened before were significantly older (30.7 ± 6.4 years; p = 0.001); their age at delivery of first child was 23.4 ± 4.3 years and had in the past used contraceptives (p=0.001). They also had higher income (p = 0.03) (Table 2).

*Table 2. Factors associated with uptake of Cervical Cancer Screening among Women at Mama Lucy Kibaki Hospital.*

	Ever screened (%)	Never screened (%)	P-value
Mean age (SD)	30.7 (6.4)	26.4 (5.5)	0.001
Age at first birth, mean (SD)	23.4 (4.3)	22.3 (3.7)	0.001
Level of education			
Primary	11 (19.3)	46 (80.7)	0.281
Secondary	23 (20.7)	88 (79.3)	0.322
Tertiary	21 (26.9)	57 (73.1)	
Marital status			
Married	49 (24.3)	153 (75.7)	0.117
Unmarried	6 (13.3)	38 (86.4)	
Occupation			
Employed	14 (24.1)	44 (75.9)	0.323
Business	20 (28.2)	51 (71.8)	0.096
Unemployed	21 (17.9)	96 (82.1)	
Income in KES (n=129)			
<5000	4 (15.4)	22 (84.6)	0.009
5000-9999	6 (15.8)	32 (84.2)	0.004
10000-14999	7 (23.3)	23 (76.7)	0.035
>15000	15 (50.0)	15 (50.0)	
Don't know	2 (40.0)	3 (60.0)	0.680
Have children			
Yes	53 (22.9)	178 (77.1)	
No	2 (13.3)	13 (86.7)	0.535
Ever used any contraceptive			
Yes	48 (27.0)	130 (73.0)	
No	7 (10.3)	61 (89.7)	0.004

SD: Standard deviation; KES: Kenya Shilling

**3.3. Awareness of Cervical Cancer Risk Factors, Signs and Symptoms among Women at Mama Lucy Kibaki Hospital**

Most (83.8%, n = 207) of the participants had prior knowledge of cervical cancer as a disease. The media was the main source of their information (48%, n = 99). In addition, 4%, (n = 8) got information from Mama Lucy Hospital. Most participants (65%, n =160) were not aware of the risk factors for cervical cancer. Of those who knew, they listed: multiple sexual partners (9%, n = 23), poor lifestyles (7%, n = 17) and family planning (7%, n =17) among other factors. Equally, two-thirds (66.8%) of the participants were not aware of the signs and symptoms of cervical cancer, while 13.8% mentioned vaginal foul discharge, 10.1% vaginal bleeding between periods and after menopause and persistent pelvic pain.

Majority of the participants (81.4%) did not know any of the cervical cancer screening methods. For those who knew (18.6%), Pap smear was the most mentioned by 10.5% followed by VIA VILI test at 5.7%. Some participants (6.1%) suggested three-yearly screening while 2% thought screening should be done every 5 years. The majority (52.6%) of the participants thought the target groups for screening should be

women aged between 15 to 49 years, while 19.8% of the participants said mothers should be targeted.

**3.4. Barriers to Uptake of Cervical Screening Services Among Women at Mama Lucy Kibaki Hospital**

Half (53%) of the participants did not mind not as to whether a man or a woman did cervical cancer screening while half thought that did mind who performed the procedure.. About a quarter (26.3%) knew that the hospital provided cervical cancer screening service. Majority (66.8%) were willing to be screened but needed time to prepare and promised to come back at a later date. Some of the reasons given that hindered screening on the day of clinic visit was because they were not prepared for it (47.9%), were busy (16.9%), had been screened recently (15.2%) and had no money (11.5%). Those who did not want to be screened completely were also not prepared (47.9%), busy (16.9%), or had been screened not long before (16.9%).

Major barriers to cervical screening mentioned by participants included, lack of information (69.8%), fear of results (69.5%), and fear of the screening procedure (65.2%) were major barriers to cervical cancer screening. Others included cost of screening test, embarrassment and bad attitudes of health workers. (Table 3).

**Table 3.** Barriers to Uptake of Cervical Cancer Screening among Women at Mama Lucy Kibaki Hospital.

Barriers to uptake of cervical cancer screening	Strongly agree (%)	Agree (%)	Disagree (%)	Strongly disagree (%)	Don't know (%)
Test is Expensive	105 (42.5)	37 (15.0)	16 (6.5)	72 (29.3)	16 (6.5)
Lack of education on genital cancer	170 (69.8)	21 (8.5)	6 (2.4)	41 (16.7)	8 (3.6)
Fear of procedure	161 (65.4)	28 (11.7)	8 (3.3)	40 (16.3)	9 (3.6)
Fear of results	171 (69.5)	28 (11.4)	6 (2.4)	36 (14.6)	5 (2.0)
It is embarrassing	103 (41.9)	32 (13.0)	22 (8.9)	82 (33.3)	7 (2.8)
Bad Health workers Attitude	108 (43.9)	46 (18.7)	19 (7.7)	58 (23.6)	15 (6.1)
Test is Painful	42 (17.0)	22 (8.9)	3 (1.2)	48 (19.4)	132 (52.4)
Screening time is inappropriate	52 (21.1)	45 (18.3)	12 (4.9)	72 (29.1)	65 (26.3)
Healthy facility is far	72 (29.3)	43 (17.5)	17 (6.9)	111 (45)	3 (1.2)

### 3.5. Factors that May Increase Uptake of Cervical Cancer Screening among Women at Mama Lucy Hospital

The highest number thought that provision of free female genital cancer screening (93.5%), education on cervical cancer (90.2%), availability of voluntary cervical cancer screening centres (84.6%), awareness campaigns in mass

media (83%), mobile clinics 81% and good attitude of health care workers (78.5%), could increase uptake of screening. In addition, providing convenient time (78.1%) for screening, while, 68.7% of participants thought that individualized counselling would encourage them to seek screening services was another important factor (Table 4)

**Table 4.** Factors that may influence Uptake of Cervical Cancer Screening among Women at Mama Lucy Kibaki Hospital.

Cervical screening Facilitating factors	Strongly agree n (%)	Agree n (%)	Disagree n (%)	Strongly disagree n (%)	Not sure n (%)
Free cervical screening	231 (93.5)	13 (5.2)	2 (0.8)	0	0
Education on female genital cancer	222 (90.2)	21 (8.5)	2 (1.2)	0	0
Mass media campaign	205 (83.3)	32 (13.0)	9 (3.6)	0	0
Mobile reminders	158 (64.2)	58 (23.5)	29 (11.9)	0	1 (0.4)
Mobile clinics	201 (81.7)	22 (8.9)	8 (3.2)	2 (0.8)	13 (5.3)
Good attitude of health workers	193 (78.5)	48 (19.5)	2 (0.8)	1 (0.4)	2 (0.8)
Letter reminders	30 (12.1)	80 (32.4)	100 (40.5)	32 (13.4)	4 (1.6)
voluntary cervical screening centres	209 (84.9)	21 (8.5)	8 (3.3)	3 (1.2)	5 (2.0)
Individual counselling	169 (68.7)	68 (27.6)	4 (1.6)	1 (0.4)	4 (1.6)
convenient time for screening	193 (78.5)	43 (17.5)	4 (1.6)	1 (0.4)	5 (2.0)

## 4. Discussions

Out of the 247 women participants in this study, 23.1% had ever undertaken a cervical screening examination. Older women with higher income were more willing to be screened. The outcome is comparable with a previous study at Kenyatta national referral hospital [12]. This is an indication that uptake of cervical screening has had a slow increase. This is despite the fact that the Kenyan government implemented the National Cervical Cancer Screening Program (2004-2008) which was intended to provide screening services, promote primary prevention strategies and increase access to accurate information among other strategies. The findings of this study are among other studies that show that screening uptake vary as evidenced by most studies done in different locations in Kenya and even other parts of the world [12–14].

The past awareness of cervical cancer disease from this study was high. The media was the main source of this information, while few were from the study site. Despite the high awareness of cervical cancer disease, the screening uptake was low. Nevertheless, several studies show evidence that awareness of cervical cancer may not automatically increase uptake of screening by women [15–17]. The studies conducted in Kenya

have indicated both low and high awareness of cervical cancer [14, 18]. The differences in these studies may be due to differences in social demographic characteristics, educational level, locations and period of the studies. Moreover, more than half had no information of the risk factors of cervical cancer, some studies have shown that awareness about risk factors and symptoms of cervical cancer is inadequate in most sub-Saharan African countries [11, 19]. Therefore, lack of comprehensive knowledge on cervical cancer could be the reason attributable to low screening uptake in developing countries. A similar study which was done in a rural population of Kerala in India likewise reported that three quarters of the study participants did not know any contributing risk factors of cancer tumor [21]. The current study established that awareness of the causes, screening methods and prevention of cervical malignancy as well as signs and symptoms, was low. This study agrees with a study done by Lyimo and Tanya which observed that more than half of the participants had no information on cervical malignancy signs and symptoms [22]. A similar study conducted underscored the significance of cervical cancer awareness among women and goes to prove that providing information on cervical cancer signs and symptoms may enable women to discover promptly symptoms and signs of cervical malignancy [23]. Moreover, a previous study reported that in spite of high awareness of

cervical cancer, the practice of screening was only at 5%. This shows that although advanced education and employment can impact on the awareness of cervical screening; it does not translate to increased uptake of screening [24]. This calls for a study to be undertaken, to establish the reasons for the inconsistency related to the high awareness and reduced uptake of cervical cancer screening.

Various cervical cancer screening barriers were determined. This is partly consistent with what has been previously reported [17]. Furthermore, this study concurs with another study which revealed that time constraint, lack of finances and phobia of abnormal outcome to be barriers to cervical screening [22]. Additionally, our study is in keeping with other previous studies done elsewhere [24–29].

In addition, most of the key informants interviewed, alluded that the factors that hinder cervical screening uptake in the hospital were as follows; insufficient information among women, lack of adequate staff to sensitize the women, fear of the result among women and perennial lack of screening kits, affordability of screening test and exclusion of screening service chapter in the hospital patient charter. This may have played a major role that resulted to lack of awareness among participants since only (4%) knew that the hospital was providing cervical screening services.

In this study, individual counselling and free cervical cancer screening, health education and voluntary cervical screening centres were the main motivating factors to increase uptake of screening. This has been previously reported [27, 31]. Likewise, it has been shown that women who attend demonstrations, and walked through the screening procedure tolerated discomfort [32]. This is in line with a study done by other researchers who found that good health worker's communication about the significance of cervical cancer screening can help encourage, support and make cervical screening more acceptable to women [21, 33]. While, most results obtained from this are comparable to what has been reported previously [11, 14]. Contrast to our study, some studies done elsewhere have reported different influencing factors to cervical screening uptake [30, 33]. For example, studies have shown that females value being guided by the health workers as to when and how screening is carried out, and are more likely to be screened if referred by their health worker [19, 34, 35]. Lastly the findings from this study concerning motivating factors to cervical screening uptake if taken into consideration cervical screening uptake will ultimately be increased.

## 5. Conclusions

1. There was an overall low uptake of cervical screening.
2. Comprehensive awareness of cancer of the cervix was high with little knowledge on the causes, prevention methods as well as signs and symptoms of cervical cancer.
3. The major barriers to uptake of cervical cancer screening were fear of positive outcome, inadequate information on cervical cancer, fear of the screening test and embarrassment.
4. Individual counselling, free screening, health education, and voluntary cervical screening centres, were mentioned as

the main motivating factors to cervical cancer screening.

## 6. Recommendations

1. The hospital needs to carry out an in-depth comprehensive education on cervical cancer, availability of screening services and the importance of cervical screening to all women who visit the hospital.
2. A longitudinal study is key to establish the discrepancy between high awareness of cancer as a disease but low awareness of causes, prevention methods, cervical screening methods, as well as signs and symptoms of cervical cancer.
3. To motivate the women to participate in cervical screening, there is need for the hospital to provide daily cervical screening, free screening, carry out individual counselling and include cervical screening in the hospital patient charter. In addition, the government to consider establishing voluntary cervical screening centres to help women to walk in anytime and seek for the services.

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## Conflict of Interest

Authors declare no conflicts of interest.

## Authors' Contributions

- P. mbaka: Conception, design, data analysis and interpretation, manuscript writing;  
 R. Waihenya: design, data analysis, interpretation and manuscript writing.  
 Moses Otieno and mercy obwaya: Data collection, analysis  
 R. Laphael: Conception, design, data analysis and manuscript writing.  
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