

# Awareness and Knowledge levels as determinants of Cervical Cancer Screening uptake among Women Seeking Healthcare Services at Moi Teaching and Referral Hospital, Kenya

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**Abstract:** The community health seeking behaviour on various health issues is driven by the level of knowledge and awareness. This study aimed at determining the link between cervical cancer awareness and knowledge levels in relation to uptake of cervical cancer screening among women seeking healthcare services at Moi Teaching and Referral Hospital, Kenya.

By assessing public awareness and knowledge about cervical cancer, deeper insights into existing public practices can be gained, thereby helping in identifying factors that influence women in adopting healthy practices and modelling public health interventions. The objectives of the study were; to find out the level of awareness and knowledge about cervical cancer screening among the women and to examine the relationship between the level of cancer awareness and knowledge cancer screening uptake. The study area was Moi Teaching and Referral Hospital in Eldoret, Kenya. The study adopted a mixed methods approach to arrive at logical conclusions. The major finding of the study revealed that many women accessing healthcare services at MTRH Kenya had ever heard about cervical cancer but majority of them had poor knowledge about the disease. They were not aware that it is sexually transmitted, can be prevented through vaccinating young girls before sexual debut and early and regular screening for cervical cancer. The study found out low levels of awareness of symptoms, knowledge on risk factors, and not able to differentiate between facts and misconceptions about the disease. In addition, it was found that the uptake of cancer screening services increased with the increase in knowledge level and vice versa. This study concludes that there is need to create massive awareness on cervical cancer prevention by government and non-state actors at all levels from the community level to the national level. The Ministry of health with communication practitioners should develop clear, easy to understand educational messages about cervical cancer and screening tests and appropriately communicate to the women. The health care providers should sensitize women on the need for early screening for cervical cancer during clinic visits to prevent late diagnosis of the disease when little treatment options are available. In order to prevent cervical cancer, effective communication is crucial in creating awareness and in increasing knowledge levels among women and to enhance uptake of screening in Kenya in particular and sub-Saharan Africa at large.

**Key words:** awareness creation, knowledge levels, communication cervical cancer, screening, healthcare services

## I. INTRODUCTION

The level of awareness, knowledge, and perceptions of various health issues are the drivers behind the health-seeking behaviours in any community (Shaikh & Hatcher, 2005). Cervical cancer is the formation of abnormal cells in a woman's cervix caused by long-term infection with human papillomavirus (HPV) that is transmitted sexually (WHO, 2017). Globally, cervical cancer is the fourth most frequent cancer in women with an estimated 604,000 new cases in 2020 (WHO, 2022). Of the estimated 342,000 deaths from cervical cancer in 2020, about 90% of these occur in low and middle-income countries. It accounts for 13.1% of all new female cancers globally (GOK, 2018). Although preventable, Cervical Cancer (CC) is the leading cause of cancer deaths among women in Sub-Saharan Africa with the highest incidence in East Africa.

In Eastern Africa, cervical cancer remains the most common cancer in women with estimated age-standardized incidence and mortality rates of 40.1 and 30.0 per 100,000 respectively (GLOBOCAN, 2018). In Kenya, cancer is the 3rd leading cause of death after infectious and cardiovascular diseases (MoH, 2018). It contributes 5,250 (12.9%) of the new cancer cases annually and 3,286 (11.84%) of all cancer deaths annually. Nine women in their twenties die from cervical cancer in Kenya everyday (MoH, 2020). It is the leading cause of cancer related deaths in Kenya and the second most common cancer among females (GLOBOCAN, 2018).

It has been reported that there are 10 to 15 new cases of cervical cancer in Nairobi each week (MPHS/MMS, 2012). Data from Kenyatta National hospital show that between 2014 and 2016, approximately 64% of cancer patients were diagnosed with stage three or four when treatment for cancer is difficult to achieve (GOK, 2018). In fact, 90% of cervical cancer cases seen at the MTRH present with late-stage disease (stage three and four) (Were et al., 2011). This shows the gravity of the disease among the women in the region and in Kenya as a whole.

Screening can detect cancer at an early stage thus enabling women to receive treatment when it is highly effective (WHO,

2014). Considering a cervical cancer screening uptake rate of only 3.2% of women aged between 18-69 years in Kenya (Ministry of Health and Sanitation, 2012), without immediate action, the number of deaths from cervical cancer will continue increasing.

By assessing public awareness and knowledge about cervical cancer, deeper insights into existing public perception and practices can be gained, thereby helping in identifying factors that influence the women in adopting healthy practices and responsive behaviour (Podder et al., 2019). This study therefore aimed at determining the link between awareness and knowledge levels in relation to uptake of cervical cancer screening among women seeking healthcare Services at Moi Teaching and Referral Hospital, Kenya. This information is important in designing appropriate interventions and scaling up cervical cancer control programs, hence accelerating the achievement towards Sustainable Development Goals and Universal Health Coverage.

### *1.1 Statement of the Problem*

Records from Eldoret Cancer registry (2016) show that cervical cancer is the most common cancer reported in Uasin Gishu County. Despite being preventable through early screening and vaccination of young girls, there is underutilization of cervical cancer screening.

Cervical cancer awareness campaigns done via mass media during cervical cancer awareness month is not proportionate to the magnitude of the situation. The reliance on mass communication can be associated with lack of adequate information on cervical cancer and screening. There is need to explore the use of interpersonal communication in creating cervical cancer awareness and empower women with adequate knowledge with information on cervical cancer. It is also essential for encouraging women to engage in early detection and screening behaviors.

### *1.2 Justification of the study*

The findings of the study will help government agencies and other stakeholders in understanding the knowledge and awareness levels of women in regard to cervical cancer thus refocusing preventive and management strategies.

The findings from the study will be used in designing effective communication strategies and simple educational messages about cervical cancer that will be used in various hospitals for improving awareness of cervical cancer among women.

The findings from the study could create awareness and knowledge about risk factors of cervical cancer, symptoms and the need to get early and regular cervical cancer screening. This study could determine key factors that influence cervical cancer screening. Awareness of the factors will help in finding ways of removing barriers to screening services. It will also provide information on myths and misconceptions that hinder women from getting screened

In addition, the study findings will contribute to the body of literature in the field of health communication studies as well

as make recommendations on effective awareness strategies that can increase uptake of cervical cancer screening. Moreover, it will add to theoretical and empirical knowledge on health communication studies also acting as a basis for further research.

### *1.3 Study area*

Data was collected from the maternal child health (MCH-FP) clinic in Moi Teaching and Referral Hospital (MTRH). MTRH is in Eldoret town, Eldoret East Constituency in Uasin Gishu County, Kenya. It is Kenya's second National Teaching and Referral Hospital after Kenyatta National Hospital.

### *1.4 Methodology*

This study utilized mixed methods research design where, both quantitative and qualitative data collection tools were used.

The target population of the study was all women within the reproductive age of 18-65 years seeking maternal child health services and family planning (MCH-FP) at Moi Teaching and Referral hospital in Uasin Gishu County.

The study used systematic random sampling method to get a sample from the population. The researcher picked a starting number 3 (3<sup>rd</sup> person) and used the interval of 3, meaning that every 3<sup>rd</sup> person was selected until a total of 308 respondents were found. Purposive sampling was used to sample health workers and county officers from the ministry of health. Focused group discussions and key informant interviews were used to get qualitative data. For quantitative data, the study utilized questionnaires for data collection.

### *1.5 Data analysis*

Descriptive statistics and inferential statistics were used for data analysis using descriptive statistical techniques like percentages, frequencies and means. For inferential statistics, Pearson's correlation coefficient analysis, and regression analysis were performed using SPSS version 29. All analysis was done at alpha significance level of  $\alpha = 0.05$ . Qualitative data obtained from the interviews and focused group discussions were recorded and transcribed, then coded using numerals. Thematic analysis was carried out using Nvivo software version 12 to generate themes which were presented together with quantitative data.

### *1.6 Objective: Cervical cancer awareness and knowledge of respondents in relation to the uptake of cervical cancer screening*

To achieve this objective, the researcher asked the respondents whether they had ever heard of cervical cancer, the factors responsible for the development of cervical cancer, symptoms of cervical cancer and agreement with some statements about cervical cancer. The parameters were investigated and presented in tables and interpreted appropriately.

### *1.7.0 Hypothesis*

The study was guided by the following hypothesis;

There is no significant relationship between level of cervical cancer awareness and knowledge and uptake of cervical cancer among women screening seeking healthcare services at MTRH, Kenya.

### 1.7.1 Awareness about cervical cancer

The awareness parameters sought were whether one has ever heard of cervical cancer, whether one ever heard of cervical cancer screening, whether cervical cancer is sexually transmitted disease, whether cervical cancer is preventable, whether cervical cancer is preventable through vaccination of young girls, whether early screening helps in prevention of cervical cancer and number of times in three years that one should be screened for cervical cancer. The findings in table 1 show the awareness levels about cervical cancer.

Table 1. Awareness about cervical cancer

Statements	Yes, n (%)	No, n (%)	Do not know, n (%)
Whether one has ever heard of cervical cancer	278 (90.3)	30 (9.7)	0 (0)
Whether one has ever heard of cervical cancer screening	226 (73.4)	76 (24.7)	6 (1.9)
Whether cervical cancer is a sexually transmitted disease	88 (28.6)	58 (18.8)	162 (52.6)
Whether cervical cancer is preventable	150 (48.7)	14 (4.6)	144 (46.8)
Whether cervical cancer is preventable through vaccination of young girls	62 (20.1)	30 (9.7)	216 (70.1)
Whether early screening helps in prevention of cervical cancer	216 (70.1)	4 (1.3)	88 (28.6)

Researcher, 2022

The findings in table 1 indicates that majority of women 278 (90.6%) had ever heard about cervical cancer while almost an equal number of the women 226 (73.3%) had also heard about cervical cancer screening. Additionally, majority of the women 150 (48.7%). were aware that cervical cancer is preventable and that early screening helps in prevention of cervical cancer 216 (70.1%). However, a majority of the women 162 (52.6%) did not know that cervical cancer was a sexually transmitted disease, as well as whether cervical cancer is preventable through vaccination of young girls 216 (70.1%). This result implies that women had heard about cervical cancer and screening but were unaware about transmission of cervical cancer, prevention of cervical cancer as well as vaccination of young girls.

The results above agree with the response from the focus group discussions done with women. They mentioned that had heard about cervical cancer among other types of cancers.

*"I have also heard of cervical cancer"* (FGD, 01).

Among other types of cancers apart from the cervical cancer, the women mentioned to have heard included, the breast cancer, ovarian cancer, skin cancer and throat cancer.

*"I have had two friends who have died of breast cancer...My aunt suffered from throat cancer and eventually died"* (FGD, 02).

Findings from the interviews with the key informants showed that there was no proper way of finding out on the awareness of women about cervical cancer. It was noted that most women who were HIV positive were likely to be aware about cervical cancer. However, it was noted through key informants that women had generally a lot of awareness about cancers in general but low awareness about cervical cancer. This led to inaccurate information about cervical cancer held by women.

*"There is a lot of information out there about cancer in general but not specific to cervical cancer. But I think some women are aware of existence of cervical cancer, but they lack accurate information on the same. There is little communication done concerning cervical cancer in the community"* (KII, Facility B, 02).

From the Focused group discussions, women aged 41-65 years (FGD 2) were seen as more aware and most likely to have been screened for cervical cancer. Women who went for family planning services were also aware of cervical cancer because they underwent mandatory screening for cervical cancer.

*"Sometimes they [women] ask for it [cervical cancer screening], but we do tell them that the services are available especially those who come for family planning services. You know for family planning method like the coil (IUCD), a woman must be screened first for cervical cancer before insertion"* (KII, Facility B, 02).

Overall, the results agree with numerous literature that show that while women had heard about cervical cancer and screening, they were largely without knowledge about how it was transmitted, how to prevent it and how to suspect that one may be having the disease (Nyangasi, 2018; Tiruneh et al, 2017; Gatumo et al., 2018). Gatumo et al (2018) more succinctly observed that although community awareness of cervical cancer may have grown because of the introduction of the cervical cancer screening programmes and HPV vaccine in select areas of Kenya, low levels of knowledge and awareness, fears relating to speculum examination, discomfort with male health workers, and limited spousal approval, have been identified as additional factors contributing to suboptimal screening rates (Gatumo et al., 2018).

Furthermore, in Kenya, low levels of knowledge have been associated with late presentation of cervical cancer (Wamburu et al, 2016). Late diagnosis leads to poor prognosis and needs to be urgently addressed (De Ver Dye et al, 2011). While majority of women had heard about cervical cancer, they were significantly unknowledgeable and unaware about cervical cancer screening and could thus not be said to have high uptake of the screening. Therefore, improving cervical cancer awareness and addressing negative attitudes around cervical cancer screening are crucial components of an effective cervical cancer prevention programme (Adewumi et al. 2022; Bonful et al. 2022).

In addition, the findings on the question asked on the number of times in three years one should be screened for cervical cancer gives more information on knowledge levels. The results are presented in Table 2.

Table2. Distribution on number of times in three years that one should be screened for cervical cancer

Number of times	Frequency	Percentage (%)
Once	14	4.6
Twice	6	2.0
Thrice	72	23.4
Do not know	216	70.1
Total	308	100

Researcher, 2022.

The findings in table 2 indicate that majority of the respondents 216 (70.1%) did not know that one should be screened for cervical cancer at least once in three years.

Routine cervical screening has been shown to greatly reduce both the number of new cervical cancers diagnosed each year and the number of deaths resulting from the disease. The Kenya’s National cervical cancer screening guidelines intervals is between 3 to 5 years depending on age and HIV status of the women (MoH, 2018). When screening detects precancerous lesions, they can easily be treated and cancer avoided. Screening can also detect cancer at an early stage thus enabling women to receive treatment when it is highly effective (WHO, 2014).

1.7.2 Knowledge about cervical cancer: Factors responsible for development of cervical cancer

To determine the knowledge level of the women on cervical cancer, the respondents were asked if some factors were responsible for development of cervical cancer. The responses were in the form of: 1. I don’t know 2. No 3. Yes. Table 3 is a summary of the range of values assigned to the responses.

Table 3: Summary table of means (Key)

DATA SET	INTERPRETATION OF MEAN	
	Mean value	Interpretation
I	1.00-1.49	I Don’t Know
	1.50-2.49	No
	2.50-3.00	Yes

The findings showing responses of the factors responsible for development of cervical cancer are presented in Table 4.

Table 4. Distribution of factors responsible for development of cervical cancer

Factors responsible for development of cervical cancer	N	Mean	Std
Human Papilloma Virus	308	2.31	.802
Having multiple sexual Partners	308	2.29	.806
Being sexually active at a young age (below 17)	308	2.30	.804
Smoking	308	2.26	.819
Family history	308	2.22	.776
Using drugs/medicine that suppress immunity	308	2.31	.802
Having multiple pregnancies	308	2.55	.783
Giving birth before the age of 17	308	2.30	.805
Having high levels of mental stress over a sustained period	308	2.34	.755
Being infected with some sexually transmitted diseases	308	2.13	.739

Source: Researcher, 2022

Results from table 4, indicate that majority of women did not know cervical cancer risk factors including Human Papilloma Virus, having multiple sexual partners, being sexually active at a young age (below 17), smoking, family history, using drugs/medicines that suppress immunity, having multiple pregnancies, giving birth before the age of 17, having high levels of mental stress over a sustained period and being infected with some sexually transmitted diseases were risk factors for development of cervical cancer. This implies that there was low level of knowledge among the women on the risk factors to development of cervical cancer.

The findings from the FGDs indicated that the respondents mentioned some of the causes of cervical cancer as including poor hygiene, Human Papilloma Virus (HPV) and hereditary. Additional risk factors mentioned by the respondents included age, alcohol drinking, multiple sexual partners, and smoking.

*“I heard someone say cervical cancer is hereditary. They say it is just like breast cancer in that if someone in your family has, you are likely to have it”* (FGD, 02).

*“I think it is due to lack of good hygiene. I mean, women who do not shower daily and especially during monthly periods may get it”* (FGD, 01).

*“I think it [cervical cancer] may be caused by multiple sexual partners. I think smoking cigarettes, alcohol drinking and also being old in age may cause such cancers”* (FGD, 02).

The results points to the fact that there’s low knowledge levels of respondents about cervical cancer. Lack of knowledge about the seriousness of cervical cancer have been found to be significantly associated with cervical cancer low screening uptake (Morema et al. 2014)

1.7.3 Symptoms of cervical cancer

The study sought to determine whether the respondents were having knowledge of some of the symptoms of cervical cancer. Table 5 presents the distribution of respondents (means) according to their knowledge on the symptoms of cervical cancer.

Table 5. Knowledge of symptoms of cervical cancer among respondents

Symptoms of cervical cancer	N	Mean	Std
Bleeding between menstrual periods	308	2.31	.802
Bleeding during or after sexual intercourse	308	2.06	.904
Bleeding in post-menopausal women	308	2.06	.903
Bad smelling vaginal discharge	308	2.11	.899
Discharge with some blood	308	1.81	.928
Lower abdominal pain	308	1.71	.904

Researcher, 2022

Results from table 5 shows that majority of the respondents were not aware of the symptoms of cervical cancer. This therefore implies that there was low level of awareness among the women on the symptoms of cervical cancer.

The findings from the FGD sessions showed that some women were aware of some symptoms of cervical cancer which included excessive bleeding, general body pains, discharge from the vagina, foul smell, and painful cervix.

*“Some discharge from the private area. May be pain in the cervix”* (FGD, 01)

**1.7.4 Facts and misconceptions about cervical cancer**

To further reinforce the respondent’s knowledge levels about cervical cancer, the respondents were asked to state their level of agreement with the following statements about cervical cancer (facts and misconceptions). The findings show distribution of respondents based on their level of agreement with the statements about cervical cancer are presented in table 6.

Table 6. Distribution of agreements with statements about cervical cancer

Facts and misconceptions about Cervical cancer	N	Mean	Std
Cervical cancer is the leading cause of death among women in reproductive age in Kenya	308	2.7	0.655
Anyone including me can get cervical cancer	308	2.8	0.628
Cervical cancer screening is cheap	308	2.0	0.927
If I got cervical cancer symptoms, I would go for screening	308	2.9	0.420
Adequate information on cervical cancer will make me go to the screening	308	2.8	0.480
Cervical cancer can be cured if found in early stages	308	2.8	0.553
If a woman has cervical cancer, then it means she has HIV	308	1.9	0.404
The womb will be removed if found with cervical cancer	308	1.9	0.636
Being found with cervical cancer means death	308	2.2	0.620
Getting screened exposes, me to unnecessary health risks/other diseases	308	1.8	0.687
Screening destroys the ability of a woman to have a baby	308	1.6	0.592
Family planning methods like Intrauterine device (copper coil) cause cervical cancer	308	2.0	0.811

Source: Researcher, 2022

Based on the results in table 5, Majority of the respondents (mean=2.9) agreed that if they suspected that they had cervical cancer or got more information about cervical cancer (mean=2.9), they would go for screening. This was followed closely by another majority (mean=2.8) who were aware that anyone including them could get cervical cancer and those who agreed that cervical cancer can be cured if found at early stages (mean=2.8). Those who were aware that cervical cancer is the leading cause of death among women in reproductive age in Kenya followed with a (mean=2.7).

Almost half of the women (mean=2.2) and (mean=1.8) disagreed that getting screened exposes them to unnecessary health risks/other diseases and that screening destroys the ability of a woman to have a baby respectively. Majority of the women (mean=1.9) further disagreed that if a woman has cervical cancer, then it meant she has HIV, above majority (mean=1.9) and (mean=1.9) disagreed that the womb would be removed if found with cervical cancer and being found with

cervical cancer means death respectively. This implies some respondents had facts about cervical cancer.

On the other hand, a good number (mean=2.0) disagreed that cervical cancer screening is cheap. There was ambivalent response of (mean=2.6) on whether family planning methods like Intrauterine device (copper coil) caused cervical cancer. This group showed that they did not have accurate information on the cost of screening services and were not sure that there was no link between cervical cancer and use of Intrauterine devices.

**1.8 Cancer awareness and knowledge in relation to cancer screening uptake**

The study had hypothesized that, H<sub>01</sub>: There is no significant relationship between level of cervical cancer awareness and knowledge and uptake of cervical cancer among women screening seeking healthcare services at MTRH, Kenya.

A Regression analysis was carried out to ascertain the strength and nature of the relationship between the cancer awareness variables and uptake of cervical cancer screening. The results are presented in table 7.

Table 7. Relationship between Cancer awareness and cancer screening uptake

Model	Unstandardized Coefficients		Standardized Coefficients	Sig.	
	B	Std. Error	Beta		
1	(Constant)	.633	.192		.028
	Knowledge about cervical cancer	1.515	.028	.749	.001
	Causative Factors of cervical cancer	.645	.061	.428	.014
	Symptoms of cervical cancer	.020	.030	.046	.624
	Facts and misconceptions about cervical cancer	.217	.058	.103	.021

Source: Researcher, 2022.

The results in table 6 indicate that generally, cervical cancer awareness is a strong positive predictor of the uptake of cervical cancer screening (N=308, B<sub>0</sub>=0.633, p=0.028), therefore, the null hypothesis was rejected for the results showed that there was a strong positive correlation.

More specifically, knowledge about cervical cancer greatly is the greatest predictor of the respondent’s cervical cancer screening behavior (N=308, B<sub>1</sub>=1.515, p=0.001). This means that the respondents who had more knowledge about cervical cancer were more likely to go for its screening. Knowledge of causative factors of cervical cancer was the second predictor of respondent’s cancer uptake behavior (N=308, B<sub>2</sub>=.645, p=0.014). The respondents who exhibited awareness in the causative factors of cervical cancer like Human Papilloma Virus is a cause of cervical cancer, use of drugs/medicines that suppress immunity, giving birth before the age of 17, and being infected with some sexual transmitted diseases were more likely than those who were not aware to undertake cervical cancer screening. This implies that if adequate information is given to the women, the uptake is likely to improve.

The results of this study are in agreement with three other studies done by Bayu et al. 2016; Mingo et al. 2012 & Orang'o et al., 2016 which revealed that being HIV positive was a significant predictor for utilization of the screening service. Furthermore, having multiple sexual partners and sexually transmitted diseases have been found in other studies to be significantly associated with cervical cancer screening uptake (Bante et al. 2019; Bayu et al. 2016).

Respondent's perception about facts and misconceptions about cervical cancer also influenced their cervical cancer screening behavior ( $N=308$ ,  $B_3=.217$ ,  $p=0.021$ ). This implies that the respondents who were aware of clear-true facts about cervical cancer, like screening is not expensive, getting screened does not expose one to unnecessary health risks/other diseases, screening doesn't destroy the ability of a woman to have a baby, and family planning methods like Intrauterine device (copper coil) do not cause cervical cancer were more likely to make informed decision of embracing cervical cancer screening.

Studies done in other parts of Kenya have highlighted myths and misconceptions emanating from cultural beliefs that hinder cervical screening. According to Rosser et. al (2014), some cultures believe that screening is evil and unclean; therefore, women from these communities will hardly consider going for cervical screening. Some husbands also have a negative attitude towards the practice of cervical screening because they do not want their women and wives to be examined on their reproductive parts. Some tell and assume that their wives go to have some private affairs with other men and consider the practice unclean. Because of the fear of being chased away from their marriages and homes women married from such men do not find cervical cancer screening necessary (Rosser, et al 2014). When women do not have clear knowledge to be able to differentiate between facts and misconceptions, they are not likely to go for screening services.

### 1.9 Conclusion

Awareness and knowledge levels of women are key determinants in the uptake of cervical cancer screening. There is need for cervical cancer awareness campaigns and efforts of increasing knowledge levels of women as prevention strategies. The women should be sensitized on the importance, purpose and cost of cervical cancer screening and the need for taking control of their health. This should be aggressively done by the Ministry of health through all health facilities, community workers, government structures and the county government. Health workers need to utilize every health clinic visit by women as opportunities to provide information about cervical cancer. Increasing awareness and knowledge may increase uptake of cervical cancer screening among women in Kenya. This will help in reducing the morbidity and mortality associated with cervical cancer.

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