Level of Knowledge Determining Utilization of Cervical Cancer Screening Service among Women Aged 25-49 Years

Sarah Naneu Daniel[1], Mary Wanjira Kamau[1], Emmah Matheka[1]
[1]Department of Nursing Sciences, University of Nairobi, Kenya
Corresponding Author Email: kwanjira@uonbi.ac.ke

Abstract

Cervical cancer is the fourth most common cancer among women globally, with approximately 570,000 new cases reported in 2018. In Kenya, cervical cancer accounts for about 5,250 (12.9%) new cancer cases annually and contributes to approximately 3,286 (11.84%) cancer-related deaths. Cultural practices and beliefs play an important role in the prevention and management of non-communicable diseases such as cervical cancer. The World Health Organization emphasizes cervical cancer screening as a critical strategy for early detection of precancerous cells and eventual elimination of the disease among women. A cross-sectional study was conducted at the Maternal and Child Health clinic of Kitengela Sub-County Hospital among women aged 25–49 years. Semi-structured researcher-administered questionnaires were used to assess knowledge levels influencing the utilization of cervical cancer screening services. A sample size of 194 participants was determined using Fisher's formula and selected through systematic random sampling. Quantitative data were analyzed using descriptive statistics, including frequencies, percentages, and means. Knowledge levels were categorized as high, moderate, or low using Modified Bloom's cut-off points. The response rate was 92.3% (n=194). Most respondents (85.6%) had heard of cervical cancer screening, mainly from healthcare workers (53.6%). However, only 22.2% had ever undergone screening. Moderate knowledge of cervical cancer risk factors was reported by 35.6% of respondents, while 32% had low knowledge. Additionally, 52.6% had low knowledge of screening methods. Despite relatively high awareness of cervical cancer, utilization of screening services among women attending Kitengela Sub-County Hospital remains low.

Keywords: *Level of knowledge, cervical cancer screening service utilization*

1. Introduction

Evidence exists that cervical cancer is among the leading causes of death among women globally, and study statistics have shown that the world has a population of 2,784 million women aged 15 years and older who are at risk of developing cervical cancer (Bardají et al., 2018). A related study by Canfell et al. (2020) revealed that, although increased morbidity and mortality have been reported, preventive and early detection measures can reduce this burden when instituted at an early age in a woman's lifetime. On the other hand, studies have shown that the burden of cervical cancer will rise to 700,000 cases and 400,000 deaths in 2030

globally, with comparable increases being expected in future years, as demonstrated by Torre et al. (2017). In sub-Saharan Africa, cervical cancer incidence is the highest in the world, and a study by Anaman-Torgbor et al. (2020) showed statistics of 35 per 100,000 cases and 23 per 100,000 deaths from the disease annually. Kenya cervical cancer statistics have shown that the disease contributes 5,250 (12.9%) of the new cancer cases every year, consequently contributing to 3,286 (11.84%) of all the cancer deaths every year. It is the leading cause of cancer-related deaths in Kenya, and also the second most common cancer among women (Bray et al., 2018).

To a great extent, more than the total increase in incidences and deaths will be in women in low- and middle-income countries. This evidently shows the severity of global disparity in cervical cancer morbidity and mortality, as indicated by Simelela (2021). Studies have shown that developed countries have maximally beaten cervical cancer and (Rahman et al., 2013). A study showed that the United States had an incidence rate of 1.7/100,000 and a mortality rate of 5.7/100,000, while Canada had an incidence rate of 6.6/100,000 and a mortality rate of 1.9/100,000.

Although awareness of cervical cancer screening is at its peak in developed countries, developing countries are still demonstrating an infancy in the level of knowledge on cervical cancer and its prevention and detection measures. A study done in Texas, USA, showed that 70% of women were aware of risk factors to cervical cancer, and more than three-quarters of them (77.4%) would seek screening services for early detection (Akinlotan et al., 2017). Knowledge barrier has been evident, and a study carried out in one of the Sub-Saharan African countries, Zimbabwe, showed that the majority of women had information on prevention measures for cervical cancer, but utilization of cervical cancer screening is still sub-optimal (Tapera et al., 2019).

In East Africa, a study by Mwaka et al. (2016) In Northern Uganda, the study showed that, though most women were aware of cervical cancer risk factors, the study revealed culturally perceived information, for example, 30% of the women said cervical cancer is not curable even when diagnosed earlier. This misconception could negatively influence cervical cancer screening service utilization. Similarly, a study done in Ethiopia to assess the level of knowledge on cervical cancer and screening revealed that 216(37.0%) of the participants could not categorize which women are at risk of cervical cancer, and 209(35.8%) of these participants had no information about symptoms of cervical cancer, therefore revealing a low level of knowledge on cervical cancer and screening (Chellapandian et al., 2021).

A multilevel study done in Kenya by Kangmennaang et al. (2017) demonstrated that a significant number of women (24%) have never heard of cervical cancer and its screening. The study found that the level of knowledge on cervical cancer and screening is determined by sociocultural, economic, and healthcare system factors, and therefore, there is a need to review policies on cervical cancer screening to enhance the utilization of this service. A similar study survey in Kenya by Gatumo et al. (2018). In Isiolo and Tharaka Nithi Counties, researchers found that increasing women's knowledge of cervical cancer is needed to improve screening service utilization, especially among less-literate women in rural and hard-to-reach areas in Kenya. Lack of knowledge has contributed to few women adhering to subsequent scheduled screening, as indicated by Morema et al. (2014).

2. Methodology

2.1 Study Design

The researchers adopted a cross-sectional descriptive design to provide information on the presence or level of one or more variables under study. It is the best design for measuring event occurrence and assessing healthcare system needs (Aggarwal & Ranganathan, 2019).

2.2 Study area

We conducted the study at Kitengela Sub-County Hospital, which was purposively selected because it is the busiest level 4 hospital in Kajiado County compared to other level 4 hospitals. An average of 381 women attend Maternal Child Health Family planning clinics every month, but with a very low rate of screening for cancer of the cervix (MOH 711). Kitengela Sub-county Hospital is located in Kajiado East (Isinya) Sub-county, Kajiado County, Kenya, with a female population of 104,860 according to the Kenya Population and Housing Census (2019), Kenya National Bureau of Statistics (2019). It has a maternal child health clinic where data were collected from respondents who visited the clinic during the data collection period.

2.3 Study population

All women aged 25-49 years who attended the Maternal Child Health clinic during the study period. A study by Fontham et al., (2020) acknowledges that screening procedures for women under the age of 25 will not be significant because they do not pick up cervical intraepithelial neoplastic cells. The study excluded women aged 25-49 years diagnosed with psychological disorders, as they may not give reliable responses, and those who required emergency medical attention.

2.4 Sampling procedure

The sample size determination was done using the modified formulae by Fisher et al. (1998). Mugenda, (1999), recommends this formula for determining sample sizes in social studies. A total of 194 women were selected, and systematic sampling was used to recruit respondents.

2.5 Data management

We developed a semi-structured researcher-administered questionnaire. The questionnaire was written both in English and Kiswahili. Most Kitengela residents did not understand either language. The questionnaire was organized into sections to obtain respondents' demographic data and their level of knowledge about factors influencing the utilization of cervical cancer screening. We pretested the tool at a health center in Kitengela, which had the same socio-demographic characteristics as the study area. All Covid 19 measures and protocols were followed. Data cleaning was performed to ensure that there were no outliers, missing values, or improper entries that could have skewed the results. The data was categorized and coded for appropriate computer entry. We analyzed the quantitative data from closed-ended questions using descriptive statistics in SPSS version 24 and presented the results as percentages and frequencies. The level of knowledge was assessed using the sum score for each outcome. The scores were assigned "1" for acceptable, "0" for unacceptable, or incorrect. The scores were transformed into percentage scores. The items were scored, and total scores were calculated and categorized as high, moderate, or low levels of knowledge using the Modified Bloom's cut-off points. A similar study in Southern Ethiopia evaluated the cervical cancer screening level of knowledge, using Modified Bloom's cut-off points and categorized knowledge levels

as high (80-100%), moderate (50-79%), and low level of knowledge below (50%) (Tekle et al., 2020).

2.6 Ethical Consideration

Review of the protocols, clearance, and approval to conduct the study were sought by presenting the study proposal to the Kenyatta National Hospital-University of Nairobi (KNH-UoN) ethics review board. We sought permission to access the study participants from the Kajiado County Department of Health through the medical superintendent, Kitengela Sub-County Hospital. A voluntary informed consent form was provided to the respondents before they participated in the study. Participants were briefed on their rights and the expected benefits of the study.

3. Results

A total of 194 women of reproductive age between 25 and 49 years consented to be interviewed out of the 210 women approached. The response was considered adequate for generalizing the findings. The study sought to determine how knowledge of cervical cancer screening influenced service utilization. This included socio-demographic factors, level of knowledge on cervical cancer screening, source of information, knowledge on the available screening methods for cancer of the cervix, knowledge on risk factors to cervical cancer, and level of misinformation on cancer of the cervix.

3.1 Socio-demographic characteristics

Table 1shows that the majority of respondents (79.9%) resided in Kitengela, whereas only one respondent (0.5%) came from Rongai and one (0.5%) from Sabaki. Age group 26-30 Years had the highest number of participants at 42.3%, while 1.0% of respondents were older than 45 years. The majority (82.5%) of the women were married, and one respondent was widowed, with most of them 159(82%) in a monogamous form of marriage. All the respondents were Christians in regard to religion. The number of children per participant ranged from 0 to 5, with the largest percentage (30.4%) having 2 children, and 2.6% of the respondents had no children yet. On the other hand, the educational level ranged from primary to tertiary, as shown in Table 1. Most of the respondents (42.8%) had a secondary education level of attainment, and 24.2% having tertiary level of education.

Table 1: Socio-demographic characteristics of study participants

Variable	Frequency	Percent (%)
Residence		
Athi River	16	8.2
Kitengela	155	79.9
Mlolongo	14	7.2
Rongai	1	0.5
Sabaki	1	0.5
Syokimau	7	3.6
Age Category (Years)		
20-25	19	9.8
26-30	82	42.3
31-35	54	27.8
36-40	29	14.9
41-45	8	4.1
46-50	2	1
Marital Status		
Divorced/Separated	14	7.2
Married	160	82.5
Single	19	9.8
Widowed	1	0.5
Form Of Marriage		
Monogamy	159	90.8
Polygamy	16	9.2
Religion		
Christian	194	100
Number Of Children		
0	5	2.6
1	58	29.9
2	59	30.4
3	43	22.2
4	25	12.9
5	4	2.1
Level Of Education		
Primary	64	33
Secondary	83	42.8
College/Tertiary	47	24.2

3.2 The knowledge of cervical cancer screening

Most respondents, 166 (85.6%), reported having heard of cervical cancer screening services, while the remaining 28 (14.4%) had not. On the other hand, among the total respondents, only 43 (22.2%) women had been screened before, with their ages at the time of screening differing, as shown in Table 2.

Table 2: Knowledge on cervical cancer screening

Variable	Frequency	Percent (%)
Ever Heard of Cervical Cancer		
No	28	14.4
Yes	166	85.6
Ever Been screened for Cervical Cancer		
No	151	77.8
Yes	43	22.2
How old were you in the first screening		
25-35 Years	32	16.5
36-45 Years	11	5.7

3.3 Source of information on cervical cancer

Of the total respondents, slightly more than half, 104 (53.6%), had heard of cervical cancer screening from healthcare workers, and at least 9 (4.6%) had received information from family and friends, while 28 (14.4%) had never heard of cervical cancer screening services. Figure 1 shows the details.
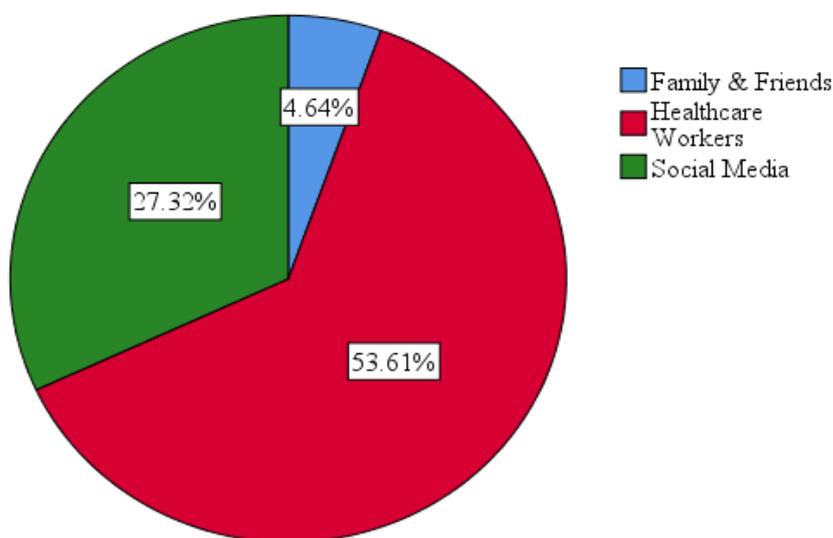

Figure 1: Source of information

3.4 Respondent's Level of Knowledge on cervical cancer screening

Respondents were asked to mention the number of cervical cancer screening methods they knew and majority of the respondents 102 (52.6%), had low knowledge on methods of screening while 58(29.9%) and 6(3.1%) of the respondents were moderately and highly knowledgeable respectively by mention of "one" 58(29.9%) and "two" 6(3.1%) as methods of screening they knew as shown in Table 3.

Table 3: Methods of cervical cancer screening

Methods of CCS known	Frequency	Percent (%)
None (Low)	102	52.6
One (Moderate)	58	29.9
Two (High)	6	3.1

Respondents were also asked to mention whether the listed factors were risks to cervical cancer. Most respondents, 69 (35.6%), had moderate knowledge of risk factors for cervical cancer, while 63 (32%) had low knowledge. Only 63 (32.5%) had a high level of knowledge on cervical cancer risk factors. See Table 4.

Table 4: Knowledge of risk factors for cervical cancer

Level Of Knowledge	Frequency	Percent (%)
Low (1-2)	62	32.0
Moderate (3-4)	69	35.6
High (5-6)	63	32.5
Total	**194**	**100.0**

Similarly, the respondents were asked to choose "true or false" on the listed information about cervical cancer and screening. The majority of the respondents (70.1%) were highly informed on cervical cancer screening, while 57 (29.4%) were moderately informed. Only 1(0.5%) of the women were misinformed about what cervical cancer and screening are about, as shown in Table 5.

Table 5: Misinformation on cervical cancer screening

Level of Knowledge	Frequency (N=194)	Percent (%)
Low (0-1)	1	0.5
Moderate (2-3)	57	2
Highly Knowledgeable (4-5)	136	70.1
Total	**194**	**100.0**

3.5 Level of knowledge influence on utilization of cervical cancer screening service

The researchers sought to determine whether knowledge level influences cervical cancer screening utilization. Using a bivariate logistic regression model to assess the relationship, the researchers found that knowledge level influenced the utilization of cervical cancer screening services. The regression analysis showed a significant relationship ($p < 0.000$; $B = 0.835$),

indicating that knowledge level was statistically significant in explaining the utilization of cervical cancer screening services, as shown in Table 6.

Table 6: Relationship between the levels of knowledge on risk factors to cervical cancer

	Variables in the Equation	B	S.E.	Wald	Sig.	Exp(B)
Step 1[a]	Level of knowledge	0.835	0.240	12.164	0.000	2.306
	Constant	-3.054	0.578	27.942	0.000	0.047

Significance Value $p < 0.05$

Moreover, the study revealed that awareness of misinformation about cervical cancer screening influenced the utilization of cervical cancer screening services. A bivariate logistic regression showed a significant relationship (p=0.001, B=2.020), indicating that knowledge level was statistically associated with cervical cancer screening utilization, with well-informed women two times more likely to use the screening service, as shown in Table 7.

Table 7: Relationship between misinformation on cervical cancer screening and utilization of cervical cancer screening service

	Variables in the Equation	B	S.E.	Wald	Sig.	Exp(B)
Step 1[a]	Level of knowledge	2.020	0.620	10.603	0.001	7.541
	Constant	-6.936	1.813	14.629	0.000	0.001

Significance value $p < 0.05$

4. Discussion

4.1 Cervical Cancer Screening Service Utilization

In spite of available methods for early detection and elimination of cervical cancer, screening for precancerous cells remains at a lower rate in Kenya. A satisfactory number of studies conducted in Sub-Saharan Africa and within the Country have reported similar findings of low cervical cancer screening service utilization. Evidence from these studies' findings related the suboptimal utilization to myriad factors. This study sought to understand how knowledge level influences the utilization of cervical cancer screening among women aged 25-49 years attending Kitengela Sub-County Hospital.

4.2 Level of knowledge determining utilization of cervical cancer screening service

A total of 194 women were interviewed, with 85.6% of the respondents reporting having heard about cervical cancer screening in the past. However, only 22.2% (n=43) of them reported having used the service. Although awareness of cervical cancer screening is at its peak in developed countries, developing countries are still demonstrating an infancy in the level of knowledge on cervical cancer and its prevention and detection measures.

Our study findings showed that all participants were educated, ranging from primary to tertiary levels, with the majority, n=83 (42.8%), having attained secondary education. Although the level of education was not statistically significant in this study, the level of knowledge on cervical cancer screening was significant (p < 0.00, B = 0.835). A knowledge barrier was evident in this study. The study findings confirm the findings of a study carried out in one of the Sub-Saharan African countries, Zimbabwe, which showed that the majority of women had information on prevention measures for cervical cancer, but utilization of cervical cancer screening is still sub-optimal (Tapera et al., 2019). The study findings are not consistent with a study done in Texas, USA, which showed that 70% of women were aware of risk factors to cervical cancer, and more than three-quarters of them (77.4%) would seek screening services for early detection (Akinlotan et al., 2017).

The study was also carried out to determine how the level of knowledge on misinformation influenced the utilization of cervical cancer screening services. The study findings showed that the level of knowledge on misinformation of cervical cancer and screening was statistically significant (p< 0.001, B = 2.020). Women who held the true information about cervical cancer and screening were 2.020 times more likely to utilize the service. The study findings are in agreement with a study carried out in Botswana, which showed that the majority of the respondents feared utilizing the service due to the belief that one would be forced to undergo a hysterectomy if found with signs of cervical cancer, hence life barrenness. Despite women having some ideas of cervical cancer screening, misconceptions and cultural beliefs hinder them from utilizing the services as required (Major et al., 2018).

The study findings revealed that the majority of respondents, n=104 (53.6%), sourced their information on cervical cancer and screening from health care workers. These findings show that healthcare workers need to be well-informed on cervical cancer and screening in order to provide adequate information to compel women to utilize the services. These study findings contrast with a study done in Webuye, Western Kenya, which showed that 84.8% of the participants did not have a discussion with the healthcare worker, nor did the healthcare worker share information on cervical cancer with the women, as indicated by Kimani et al. (2019).

5. Conclusion

The study concludes that utilization of cervical cancer screening was well below average, with only 43 (22.2%) of the respondents reporting having utilized the service in the past; this is below the WHO recommendation of a 70% screening target. The findings of the study give a clear picture of the current burden of cervical cancer in Kenya and women presenting with advanced forms of the disease. The information about cervical cancer screening that women have seems to be inadequate to compel women to utilize it. Other sources of information transmission need to be strengthened to increase the uptake of screening services for early disease detection.

The study has shown that knowledge level is a major factor influencing service utilization, and women with in-depth knowledge of cervical cancer and screening are likely to use the service. Given that all respondents have attained some level of education, the study revealed a knowledge gap regarding cervical cancer screening. The disparity in knowledge levels explains the lower screening utilization coverage among the respondents. Screening for cervical cancer was introduced to Kenya back in 2009, yet its utilization is still in dire need.

Women are still not aware that cervical cancer screening is a free service in all public facilities, and therefore, the findings give clear evidence of a gap in awareness and significance of early detection of this preventable disease.

6. Recommendations

The need to formulate community-based participatory approach-oriented policies needs to be considered in order to enhance prevention and early detection of cervical cancer, thus increasing the uptake of cervical cancer screening, and therefore realizing the WHO 70% target.

Men's involvement in cervical cancer screening health education will go a long way in building partner support and enhancing open communication among spouses. As the Kenya Ministry of Health prepares to develop another cervical cancer strategic plan, this recommendation needs to be adopted.

The study also recommends that cervical cancer screening be adopted as a mandatory routine for all women of reproductive age. This has worked for other developed countries, and the policy has helped in reducing the burden of women presenting late with incurable disease.

There is a need to emphasize the benefits and success of early detection to young women who often think the service is designed for older women. There is a need to create in-depth awareness on the current burden of cervical cancer in the Country to encourage women to utilize available screening services.

Study strengths and Limitations

The strength of this study was the availability of local and regional datasets, which were used extensively to draw comparisons of findings across variables under study. The data set was useful in measuring the determinants of cervical cancer screening utilization.

There was limited access to the information on women attending the facility of study due to a lack of a permanent register for regular reporting. The study was difficult to generalize because it was cross-sectional and conducted only at Kitengela Sub-county Hospital. The coronavirus pandemic also posed a challenge to ensuring that women adhered to the Ministry of Health's set guidelines.

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