IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 29, Issue 8, Series 1 (August, 2024) 59-68
e-ISSN: 2279-0837, p-ISSN: 2279-0845.
www.iosrjournals.org

Awareness Of Cervical Pre-Cancer Screening Among Women Attending Mbagathi Level Four Hospital, Nairobi, Kenya

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Abstract:
Background*: Cervical cancer remains a significant global health issue, causing over 340,000 deaths annually and ranking as the fourth most common cancer worldwide. Increasing awareness about cervical pre-cancer screening is essential for improving early detection and treatment, thus reducing mortality rates. Despite this high mortality rate, awareness and uptake of cervical pre-cancer screening remain low, with projections indicating a potential 50% increase in the disease's impact by 2030.*
Materials and Methods*: This study aims to assess the level of awareness of cervical pre-cancer screening among women attending Mbagathi Level Four Hospital in Nairobi, Kenya, and evaluate the impact of socio-cultural and psychological factors on screening behaviours. An analytical cross-sectional design was employed, targeting women aged 25 to 49 years at Mbagathi Level Four Hospital. Systematic random sampling was used to select 213 participants, ensuring an unbiased representation. Data was collected through semi-structured questionnaires and key informant interviews, focusing on awareness, socio-cultural, and psychological factors. Data analysis involved descriptive and inferential statistics, including logistic regression to identify predictors of screening uptake.*
Results*: The findings revealed a high level awareness of cervical cancer (90.8%) among participants. However, the actual uptake of cervical pre-cancer screening was low, highlighting barriers such as financial constraints and psychological factors. Formal occupation was a significant predictor of awareness, while other demographic characteristics showed no strong association. Personal experiences significantly influenced attitudes towards screening, with those knowing someone affected by cervical cancer being more likely to participate in screening*
Conclusion: *In conclusion, high awareness levels are crucial for encouraging screening, yet financial and psychological barriers impede actual uptake. Formal occupation increases awareness, but other demographic factors have a limited impact. Personal connections with cervical cancer cases influence screening behaviors significantly. The study recommends the implementation of cultural sensitivity training for healthcare providers and engages community leaders to promote cervical pre-cancer screening. Also, there should be the establishment of peer support groups to reduce stigma and build a supportive community around cervical health.*
Key Word*: Cervical Cancer, Screening, Awareness, Socio-Cultural Factors, Psychological Barriers*

Date of Submission: 26-07-2024 Date of Acceptance: 06-08-2024

I. Introduction

Cervical cancer poses a substantial global health challenge, accounting for the annual loss of over 340,000 women's lives and ranking as the fourth most prevalent cancer worldwide (GLOBOCAN, 2020). This significant mortality rate prompted a clarion call to action by the World Health Organization (WHO) in 2018, highlighting the stark reality that one woman succumbs to cervical cancer every two minutes." In Sub-Saharan Africa (SSA), this disease exacts a particularly heavy toll, with a mortality rate of 23 cases per 100,000 women (Ngune et al., 2020). In Kenya, cervical cancer assumes a grim prominence as the leading cause of female mortality, responsible for 5,236 annual deaths, equivalent to 11.9% of all cancer-related fatalities (Ferlay et al., 2018). Furthermore, projections suggest a disconcerting 50% increase in its impact by the year 2030. These sobering statistics underscore the urgency of addressing cervical cancer as a public health priority.

Cervical pre-cancer screening, as endorsed by the WHO, stands among the top three interventions crucial to the global mission of eradicating cervical cancer by 2030. This proven and cost-effective measure holds immense potential for cervical cancer elimination, yet its uptake remains disappointingly low (WHO, 2018). A systematic review examining screening uptake across Sub-Saharan Africa (SSA) spanning the years 2000 to 2019, conducted by Yimer *et al.*, (2021), estimated an average screening rate of 12.9%. In Ethiopia, a comprehensive

meta-analysis led by Desta *et al.*, (2021) revealed a national screening rate of 14.9%. Notably, in Kenya, Nyangasi *et al*., (2018) conducted an assessment, estimating screening rates of 16.4% in a nationally representative sample. These figures underscore the pressing need to address barriers and enhance the accessibility of cervical cancer screening services to achieve WHO's ambitious elimination goals.

The level of awareness regarding cervical pre-cancer screening plays a pivotal role in determining its uptake (Getahun *et al*. 2013). A meta-analysis encompassing Sub-Saharan Africa (SSA) for the period spanning from 2000 to 2019 underscored the region's low level of awareness, with projections suggesting that improving awareness could potentially elevate screening rates by a substantial fivefold factor (Yimer *et al.,* 2021). Educational attainment emerges as a significant determinant, with highly educated women in Ghana exhibiting a remarkable 122-fold increased likelihood of undergoing screening (Ampofo et al., 2020). Conversely, Desta *et al.* (2021) discovered that a low level of formal education among Ethiopian women reduced cervical pre-cancer screening rates by two-thirds. Notably, individuals with better formal education demonstrated heightened awareness of their susceptibility to and the severity of cervical cancer, factors intricately linked to increased screening uptake.

These findings find resonance in Western Kenya, where Wachira *et al*., (2016) identified a compelling association between a lack of awareness and diminished screening rates. Furthermore, Morema *et al.*, (2014) established a tangible relationship between an individual's awareness of the clinical features of cervical cancer and their likelihood of undergoing screening. These cumulative insights underscore the critical importance of fostering awareness to enhance cervical pre-cancer screening rates.

Sociocultural factors wield considerable influence as determinants of cervical pre-cancer screening. Populations with lower social status often contend with reduced awareness and fragmented healthcare systems, resulting in lower screening rates (Coleman, 2014). A systematic review spanning Sub-Saharan Africa (SSA) conducted by Swanson *et al.,* (2018) pinpointed financial, socio-cultural, and logistical factors as the primary sociocultural determinants of screening rates.

Psychological factors wield considerable influence as determinants of cervical pre-cancer screening. In a systematic review focused on Sub-Saharan Africa (SSA), Lim and Ojo (2017) unearthed a prevailing fear among women regarding the potential outcomes of the screening test. Many women expressed concerns that the test infringed upon their privacy and dreaded the consequences of a positive result, which included stigma, lack of spousal support, and the high cost of treatment. This sentiment finds resonance in the findings of Moshi *et al.* (2019), who identified a poor perception of the screening procedure as a significant determinant of screening reluctance among Tanzanian women. Moreover, in Zimbabwe, Mutambara *et al.* (2017) documented that some women perceived the screening test as a daunting and painful experience. In Kisumu, Wachira *et al*. (2016) noted that a lack of awareness regarding the screening procedure was associated with reduced screening rates. Additionally, a palpable fear of receiving a positive screening result further contributed to psychological barriers surrounding screening uptake. These insights underscore the need for comprehensive education and support mechanisms to address the psychological aspects of cervical pre-cancer screening.

Perceived susceptibility and the severity of cervical cancer indeed exert a notable influence on the uptake of cervical pre-cancer screening. In a systematic review spanning Sub-Saharan Africa (SSA) from 2000 to 2019, Yimer *et al.* (2021) discerned that perceived susceptibility and the perceived severity of cervical cancer played a pivotal role as predictors of screening behaviour. Furthermore, Gemeda *et al*. (2020) identified self-efficacy as a significant determinant of screening behaviour among Ethiopian women, highlighting the importance of an individual's belief in their ability to undergo screening. These findings resonate with the work of Morema *et al*. (2014), who established a compelling association between the perceived risk of cervical cancer and its severity, alongside the intention to undergo screening among women in Kisumu. Collectively, these insights underscore the importance of addressing perceived susceptibility, severity, and self-efficacy to enhance cervical pre-cancer screening rates.

The cues to cervical cancer screening encompass various elements, including creating awareness of cervical pre-cancer screening, social influence, personal experiences, and policy initiatives. A study examining the support provided by spouses and knowledge regarding cervical cancer screening among Sub-Saharan immigrant men, conducted by Adegboyega *et al*. (2019), unveiled a notable lack of awareness regarding screening guidelines. However, it also revealed a strong enthusiasm among these men to support their spouses in obtaining screening services. Moreover, the study highlighted the collaborative family decision-making approach when seeking screening services, suggesting that targeting spouses could lead to increased uptake.

The pivotal role of well-designed health education programs as cues for screening is evident in a study conducted in Nigeria by Abiodun *et al*. (2014). Their research demonstrated a remarkable increase in screening rates from 2% to 70%, alongside a surge in the perception of screening from 5% to 95% after educational interventions. Similarly, Rosser, Njoroge, and Huchko (2015) reported a moderate increase in screening uptake among women in rural Kenya following a brief educational intervention. Furthermore, the adoption of a country's policy for the equitable and universal implementation of cervical pre-cancer screening serves as a crucial cue to

encourage screening participation (MOH, 2020). These multifaceted cues underscore the importance of comprehensive strategies to enhance cervical pre-cancer screening rates.

II. Material And Methods

Study Design: The research adopted an analytical cross-sectional study design. This research design allowed the researcher to examine relationships between different variables. The research collected data on determinants of cervical pre-cancer uptake of women attending Mbagathi Level Four Hospital. Data obtained were used to establish relationships between the level of awareness and socio-cultural, and psychological factors in relation to cervical pre-cancer screening.

Study Location: The study was conducted at Mbagathi Level Four Hospital in Nairobi County. Mbagathi Level Four Hospital was constructed in the 1950s to counter infectious diseases requiring isolation such as TB, measles, leprosy, and meningitis. In 1955, it was transformed into an independent District Hospital, and since then, the hospital has expanded to offer county-level health services. Mbagathi Level Four County Hospital is situated in the Kenyatta Golf Course area in Dagoretti, Nairobi County, bordering the Kibera slums. The hospital serves a wide area with an estimated 1 million people, mainly comprising the underprivileged. Moreover, the hospital screens clients before IUCD insertion as well as those referred from other facilities based on their clinical presentations. Other clients who were screened for cervical cancer were those who walked in and requested screening services.

Sample size: The sample Size of 213 was determined using (Fisher's et al, 1998) formula.

Subjects & selection method: Systematic random sampling was used. On average, about 1500 women are attended to every month at the Mother and Child Health Clinic (MCH) at Mbagathi Level Four Hospital. Therefore, the interval was $k = N / n$, which is 6. Every 6th mother was recruited to the study at the MCH. To ensure an unbiased representation of the population over the data collection period, the sample was evenly distributed across the duration of the study. Participants were recruited and included in the study at regular intervals throughout the entire data collection to minimize the influence of time-related bias. To achieve this, the study recruited a maximum of 10 participants in a day (Kothari & Garg, 2014).

Inclusion criteria:
1. Female aged between 25 and 49 years
2. Seeking services offered at Mbagathi Level four Hospital.
3. Ability to provide informed consent.

Exclusion criteria:
1. Mothers who have had a total hysterectomy as they are no longer at risk.
2. Those who will not consent.
3. Critically ill or require urgent medical attention.

Procedure methodology

Participants were identified using a systematic random sampling technique at Mbagathi Level Four Hospital, Mother Wellness Clinic, where every 6th eligible participant was recruited. The researcher obtained consent from the participants, outlining the voluntary nature of research participation, and the risks and benefits of the study. In addition, key informant interviews were conducted among health workers and community health workers at Mbagathi Level Four Hospital. The data collection exercise was approximated to take one month.

Statistical analysis

After the collection of data, the data were cleaned and analyzed using the SPSS program (Statistical Package for the Social Sciences) version 26.0. The analysis encompassed both descriptive and inferential statistics to provide a comprehensive understanding of the generated data. Descriptive statistics, including measures such as mean, frequency, percentage, and standard deviation, were employed to summarize the responses obtained from the participants. Inferential statistics were utilized to delve deeper into the data, specifically to predict the associations between independent variables (such as levels of awareness, sociocultural factors, and psychological factors) and the dependent variable (cervical pre-cancer screening uptake). To achieve this, Chi-square tests were deployed to assess associations between categorical variables. Moreover, logistic regression analysis was conducted to identify the predictors of cervical pre-cancer screening uptake. The use of random sampling techniques in selecting research respondents ensured the validity of the statistical inferences drawn from the data. All statistical tests were two-tailed unless explicitly stated otherwise, with significance levels set at $p < 0.05$,

signifying statistical significance. Logistic regression analysis was specifically employed to ascertain the factors influencing cervical pre-cancer screening uptake, contributing valuable insights to the research findings.

III. Result And Discussion

Level of awareness of cervical pre-cancer screening among women

Heard about cervical cancer

The findings revealed that a significant majority of participants, 90.8% (218 individuals), had heard of cervical cancer, whereas only 9.2% (22 individuals) had not. This high level of awareness indicated a substantial knowledge base regarding cervical cancer among the study population. These results are illustrated in Figure 1 below.

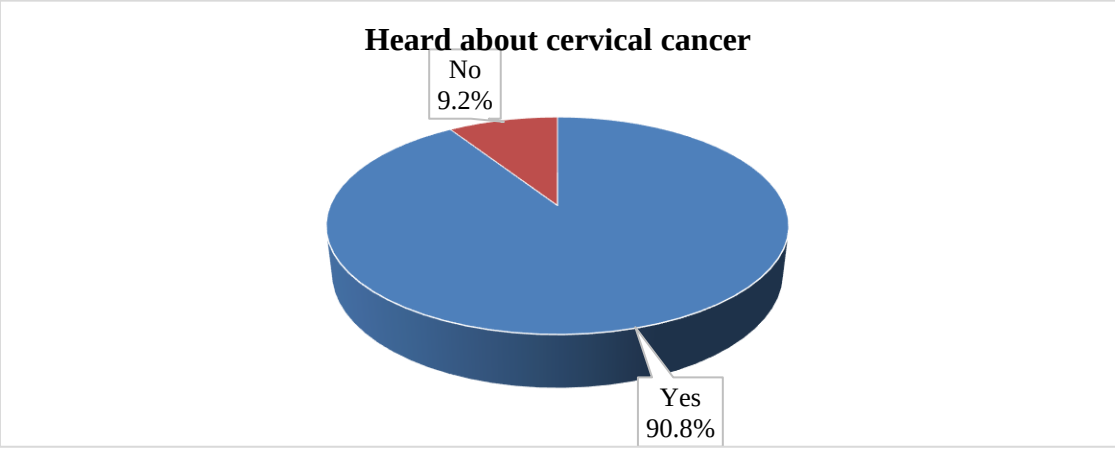

Figure I: Heard of cervical cancer

The findings in Figure I indicated that a majority of participants, 90.8% (218 people), had heard of cervical cancer, whereas only 9.2% (22 people) had not. This high level of awareness suggested that the individuals were highly knowledgeable about cervical cancer. Understanding the level of awareness among women was crucial for interpreting the study's findings, particularly in the context of cervical pre-cancer screening uptake. The high awareness levels observed aligned with the notion that awareness is a significant determinant of screening behavior. Getachew et al. (2019) found a direct correlation between awareness and screening rates, highlighting that individuals with higher awareness were more likely to participate in screening programs. This was further supported by the findings of Wachira et al. (2016), who noted that low awareness was a significant barrier to screening in rural western Kenya.

Despite the high awareness of cervical cancer, the actual uptake of cervical pre-cancer screening often remained low. This discrepancy suggested that while awareness was necessary, it was not sufficient on its own to ensure high screening rates. For instance, Kangethe et al. (2020) discovered that although 84% of women living with HIV at Kenyatta National Hospital were aware of cervical pre-cancer screening, only 45% had been screened. This indicated that other factors, such as financial constraints and psychological barriers, also played a crucial role in influencing screening uptake. These findings underscore the complexity of addressing cervical pre-cancer screening rates, suggesting that multifaceted interventions targeting both awareness and other barriers are essential to improving screening participation.

Odds Ratio of having heard of cervical cancer and demographic characteristics

The analysis in Table I revealed that formal occupation is the most statistically significant factor, with an odds ratio of 2.624 (95% CI: 1.029 – 6.690), indicating that individuals in formal employment are significantly more likely to be aware of cervical cancer compared to those in informal jobs. This finding aligns with previous research suggesting that formal employment often correlates with better access to health information and services (Okolie et al., 2022). This highlights the potential of workplace health programs in increasing awareness among formally employed individuals, reinforcing the importance of targeted interventions in these settings.

In contrast, other demographic characteristics such as age, marital status, religion, number of children, education level, and income did not show statistically significant associations with cervical cancer awareness. For instance, the odds ratio for participants aged ≤34 years compared to those aged >34 years was 1.112 (95% CI: 0.446–2.770), while for non-married participants, it was 1.270 (95% CI: 0.521–3.095). These findings suggest that younger age and marital status do not significantly influence awareness. Similarly, the wide confidence intervals for religious affiliation, number of children, educational attainment, and income level indicate no strong

association with awareness. These results underscore the necessity for diverse and tailored educational strategies to bridge awareness gaps among different demographic groups.

Table I: Odds Ratio of having heard of cervical cancer and demographic characteristics

Statement		Ever heard about Cervical Cancer		Total	OR	95% CI	
		Yes	No			Lower	Upper
Age of the participants	<= 34 Years	144	14	158	1.112	.446	2.770
	>34 Years	74	8	82			
Total		218	22	240			
Marital Status	Not married	102	9	111	1.270	.521	3.095
	Married	116	13	129			
Total		218	22	240			
Religion	Christian	206	20	226	1.717	.359	8.216
	Muslim	12	2	14			
Total		218	22	240			
Number of Children	0	46	3	49	1.694	.480	5.974
	>= 1	172	19	191			
Total		218	22	240			
Highest level of education completed	Formal education	200	21	221	.529	.067	4.165
	Informal education	18	1	19			
Total		218	22	240			
current occupation	Formal	120	7	127	2.624	1.029	6.690
	Informal	98	15	113			
Total		218	22	240			
average monthly income	< = Kes 30,000	156	16	172		.353	2.522
	> Kes 30,000	62	6	68	.944		
Total		218	22	240			

Risk factors of cervical cancer

The finding in Table II revealed a significant awareness among the respondents regarding these risk factors. For instance, a notable 89.2% either agreed or strongly agreed that early initiation of sexual activity is a risk factor for cervical cancer, consistent with findings by Bruni et al. (2019), which emphasize early sexual debut as a critical determinant. Similarly, the awareness that STIs are a risk factor for cervical cancer was exceedingly high, with 93.0% of respondents in agreement. This is in line with research by Cohen et al. (2020), who highlighted the role of STIs, particularly human papillomavirus (HPV), in the aetiology of cervical cancer. The findings also indicated that 91.7% agreed or strongly agreed that having multiple sexual partners is a risk factor, which resonates with the conclusions of Bosch et al. (2018). Awareness of multiparity and tobacco use as risk factors was slightly lower, with 77.5% and 78.0% respectively acknowledging these associations. These figures are supported by studies such as those by Rehm et al. (2017), which link higher parity and tobacco use to increased cervical cancer risk.

The data showed that 89.6% of respondents recognized immunosuppression, including conditions like HIV/AIDS, as a risk factor for cervical cancer. This aligns with the findings of Larke et al. (2011), which discuss the heightened risk among immunocompromised individuals. Awareness of drug and substance use as a risk factor was also significant, with 86.2% in agreement, reflecting the conclusions of Sasco et al. (2015) regarding lifestyle factors and cancer risk. Overall, 90.9% of respondents agreed or strongly agreed that these factors collectively are significant risk factors for cervical cancer, underscoring the importance of comprehensive risk factor education in cervical cancer prevention efforts. These findings are presented in Table II.

Table II: Risk factors of cervical cancer

Risk factors of	strongly Disagree		Disagree		Neutral		Agree		Strongly Agree	
Early initiation of sexual activity	3	1.3%	11	4.6%	12	5.0%	48	20.0%	166	69.2%
Infection with STIs	3	1.3%	3	1.3%	11	4.6%	51	21.3%	172	71.7%
Having multiple sexual partners	6	2.5%	3	1.3%	11	4.6%	37	15.4%	183	76.3%
Multiparity	13	5.4%	18	7.5%	23	9.6%	53	22.1%	133	55.4%
Tobacco use (Active and Passive)	13	5.4%	18	7.5%	22	9.2%	52	21.7%	135	56.3%
Immunosuppression like in HIV/AIDS	6	2.5%	10	4.2%	9	3.8%	50	20.8%	165	68.8%
Drug and substance use	10	4.2%	11	4.6%	12	5.0%	56	23.3%	151	62.9%
Aggregate Risk factors for cervical cancer	0	0.0%	4	1.7%	18	7.5%	52	21.7%	166	69.2%

Means and Standard Deviation of the risk factors of cervical cancer

The study's findings, presented in Table III, indicate that respondents had a strong consensus on the various risk factors for cervical cancer. The mean score for early initiation of sexual activity was 4.51, with a standard deviation of 0.882, suggesting a high level of agreement among participants. This aligns with the established understanding that early sexual activity increases the risk of cervical cancer due to prolonged exposure

to potential infections (GLOBOCAN, 2020). Similarly, the mean score for the risk factor of STIs was 4.61, with a low standard deviation of 0.746, reflecting consistent awareness of the link between STIs and cervical cancer, as supported by global health literature (Ngune et al., 2020). The strong agreement on the risk of having multiple sexual partners, with a mean score of 4.62 and a standard deviation of 0.840, reinforces the importance of safe sexual practices in reducing cervical cancer risk.

The findings also highlighted areas needing targeted education. For instance, while there was general agreement that multiparity is a risk factor, with a mean score of 4.15, the higher standard deviation of 1.193 indicated variability in respondents' awareness. This suggests a need for more focused educational efforts to clarify the impact of multiple pregnancies on cervical cancer risk (Yimer et al., 2021). Similarly, tobacco use, with a mean score of 4.16 and a standard deviation of 1.193, showed that awareness was not uniformly strong, highlighting the need for enhanced public health messaging on the dangers of tobacco in relation to cervical cancer (Desta et al., 2021). The high mean score for immunosuppression (4.49) and a relatively low standard deviation (0.937) underscores the critical understanding among respondents about the heightened risk for women with HIV/AIDS (Nyangasi et al., 2018). Finally, while drug and substance use was recognized as a risk factor (mean score of 4.36), the variability in responses (standard deviation of 1.054) indicates an area where continued education is necessary (Getahun et al., 2013). Overall, the aggregate mean score of 4.58 and a low standard deviation of 0.704 reflect a strong and consistent awareness of the identified risk factors, underscoring the effectiveness of existing health education programs and the need for ongoing comprehensive information dissemination (Wachira et al., 2016).

Table III: Risk factors of cervical cancer mean and Std deviation

	N		Mean	Std. Deviation
	Valid	Missing		
Early initiation of sexual activity	240	0	4.51	.882
Infection with STIs	240	0	4.61	.746
Having multiple sexual partners	240	0	4.62	.840
Multiparity	240	0	4.15	1.193
Tobacco use (Active and Passive)	240	0	4.16	1.193
Immunosuppression like in HIV/AIDS	240	0	4.49	.937
Drug and substance use	240	0	4.36	1.054
Aggregate Risk factors for cervical cancer	240	0	4.58	.704

The findings in Table III showed the importance of awareness and education in enhancing cervical pre-cancer screening, as supported by Swanson et al. (2018) on culturally sensitive approaches and Abdikarim et al. (2017) and Rositch et al. (2012) on addressing sociocultural barriers. Additionally, Lim and Ojo (2017) and Moshi et al. (2019) highlighted the significant role of psychological factors in screening behaviours, reinforcing this study's conclusions.

Regression model of the risk factors of cervical cancer

The model summary revealed a weak positive correlation (R = 0.263) between aggregate risk factors and cervical pre-cancer screening uptake, consistent with findings from Getachew et al. (2019) in Addis Ababa. Despite the weak correlation, the R^2 value of 0.069 indicated that risk factors explained about 6.9% of the variance in screening uptake, echoing Wachira et al. (2016), who noted that multiple factors influence screening rates. The ANOVA results confirmed the model's statistical significance (F = 17.687, p = 0.000), aligning with Yimer et al. (2021) on the impact of risk awareness on screening behaviours. Coefficient analysis showed a significant positive association (B = 0.262) between awareness of risk factors and screening uptake, corroborated by Ampofo et al. (2020). However, the standardized coefficient (Beta = 0.263) indicated that risk factors alone were not strong predictors, supported by Mwenda et al. (2022), who highlighted the importance of accessibility, socio-cultural, and economic factors in screening behaviours.

Table IV: Regression model of the risk factors of cervical cancer

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.263[a]	.069	.065	.678
a. Predictors: (Constant), Aggregate Risk factors to cervical cancer				

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.121	1	8.121	17.687	.000[b]
	Residual	109.279	238	.459		
	Total	117.400	239			
a. Dependent Variable: Aggregate cervical pre-cancer screening						
b. Predictors: (Constant), Aggregate Risk factors to cervical cancer						
Coefficients[a]						

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.249	.289		11.250	.000
	Aggregate Risk factors for cervical cancer	.262	.062	.263	4.206	.000
a. Dependent Variable: Aggregate cervical pre-cancer screening						

Clinical features of cancer of the cervix

Most of the respondents were aware of and had experienced symptoms indicative of cervical pre-cancer, underscoring the importance of symptom recognition in cervical health. It was revealed that 80.4% of respondents strongly agreed they had experienced abnormal vaginal bleeding, a critical symptom for early detection and prompt medical attention to prevent the progression of cervical abnormalities (WHO, 2018; GLOBOCAN, 2020). Similarly, unusual per vaginal discharge was reported by 72.5% of respondents, emphasizing the need to educate women on recognizing abnormal discharge as a potential sign of cervical pre-cancer (Ngune et al., 2020).

Other symptoms such as body wasting and contact bleeding during intercourse were also commonly reported, with significant proportions of respondents acknowledging these symptoms. This reflects the respondents' awareness and the necessity for ongoing education about various manifestations of cervical abnormalities (Yimer et al., 2021; Desta et al., 2021). The prevalence of foul-smelling discharge, reported by 70% of respondents, further highlighted the commonality of this symptom and the need for healthcare providers to guide women toward appropriate screening and treatment (Getahun et al., 2013; Wachira et al., 2016).

Interestingly, half of the respondents reported being asymptomatic yet still participated in screening, indicating an understanding of the importance of regular screening even in the absence of symptoms. This proactive approach is crucial for early detection and prevention, as emphasized by global health guidelines (WHO, 2018; Nyangasi et al., 2018). Overall, the findings underscore the critical role of continued education and awareness campaigns in ensuring women are well-informed about the signs and symptoms of cervical pre-cancer, ultimately contributing to better health outcomes (Swanson et al., 2018; Rositch et al., 2012).

Table V: Clinical features of cancer of the cervix

	strongly Disagree		**Disagree**		**Neutral**		**Agree**		**Strongly Agree**	
Abnormal per vaginal bleeding	1	0.4%	2	0.8%	9	3.8%	35	14.6%	193	80.4%
Unusual per vaginal discharge	0	0.0%	1	0.4%	19	7.9%	46	19.2%	174	72.5%
Body wasting	3	1.3%	13	5.4%	37	15.4%	46	19.2%	141	58.8%
Contact bleeding during intercourse	1	0.4%	8	3.3%	20	8.3%	49	20.4%	162	67.5%
Foul smell	1	0.4%	3	1.3%	32	13.3%	36	15.0%	168	70.0%
Asymptomatic	14	5.8%	8	3.3%	43	17.9%	55	22.9%	120	50.0%
Aggregate Cervical cancer feature	0	0.0%	1	0.4%	9	3.8%	67	27.9%	163	67.9%

Mean and Standard Deviation of the clinical features of cancer of the cervix

The study's analysis revealed high levels of awareness and consistent recognition of cervical pre-cancer symptoms among respondents. For instance, abnormal vaginal bleeding had a mean value of 4.74 and a low standard deviation of 0.608, indicating strong agreement and consistency among respondents regarding this symptom (Table VI). This widespread recognition aligns with the critical need for early detection of cervical abnormalities (WHO, 2018). Similarly, unusual vaginal discharge scored a mean of 4.64 with a standard deviation of 0.645, reflecting consistent awareness of this significant symptom, corroborating research that emphasizes its importance (Ngune et al., 2020). These findings underscore the necessity for continuous education on identifying such symptoms to facilitate timely medical intervention.

Other symptoms, such as body wasting and contact bleeding during intercourse, also demonstrated high mean values of 4.29 and 4.51, respectively, with moderate to high consistency (Table VI). The recognition of these symptoms is crucial for early medical intervention and prevention (WHO, 2018). Additionally, the symptom of a foul smell had a mean score of 4.53 with a consistent standard deviation of 0.802, highlighting the need for increased awareness and education about the implications of such symptoms (Swanson et al., 2018). Interestingly, while a significant number of respondents reported being asymptomatic (mean of 4.08), the higher standard deviation of 1.156 pointed to diverse experiences, underscoring the importance of routine screening for all individuals (Yimer et al., 2021). Overall, the aggregate findings indicated a mean of 4.63, suggesting that most respondents experienced multiple symptoms, reflecting a strong general awareness of cervical cancer symptoms (Nyangasi et al., 2018; Wachira et al., 2016). These insights are crucial for healthcare providers to tailor education and intervention strategies effectively, ultimately improving cervical cancer outcomes.

Table VI: Mean and std deviation for clinical features of cervical cancer

	N		Mean	Std. Deviation
	Valid	Missing		
Abnormal per vaginal bleeding	240	0	4.74	.608
Unusual per vaginal discharge	240	0	4.64	.645

Body wasting	240	0	4.29	.996
Contact bleeding during intercourse	240	0	4.51	.818
Foul smell	240	0	4.53	.802
Asymptomatic	240	0	4.08	1.156
Cervical cancer feature	240	0	4.63	.578

Regression Model for clinical features of cancer of the cervix

The regression model summary indicated a moderate positive correlation (R = 0.347) between the aggregate clinical features of cervical cancer and the uptake of cervical pre-cancer screening, with the model explaining approximately 12.1% of the variance in screening uptake ($R^2 = 0.121$). The adjusted R^2 value of 0.117 and a standard error of 0.659 further validate these findings (Table VII). These results align with studies by Getahun et al. (2013) and Wachira et al. (2016), which highlighted the significant role that awareness of cervical cancer symptoms plays in encouraging screening. The ANOVA analysis confirmed the model's statistical significance (F = 32.641, p = 0.000), suggesting it effectively predicts screening uptake, consistent with Yimer et al. (2021), who noted the impact of symptom awareness on screening behaviours. The coefficients revealed that an increase in awareness of clinical features by one unit would lead to a 0.421 unit increase in screening uptake, as indicated by the unstandardized coefficient ($B_1 = 0.421$). This relationship, supported by a t-value of 5.713 (p = 0.000), underscores the importance of educational interventions on cervical cancer symptoms, as demonstrated in studies by Nyangasi et al. (2018) and Ampofo et al. (2020), which found that higher awareness levels significantly improve screening rates.

Table VII: Regression Model for clinical features of cancer of the cervix

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.347[a]	.121	.117	.659

a. Predictors: (Constant), Aggregate Cervical cancer feature

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	14.159	1	14.159	32.641	.000[b]
	Residual	103.241	238	.434		
	Total	117.400	239			

a. Dependent Variable: Aggregate cervical pre-cancer screening

b. Predictors: (Constant), Aggregate Cervical cancer feature

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.497	.344		7.252	.000
	Aggregate Cervical cancer feature	.421	.074	.347	5.713	.000

a. Dependent Variable: Aggregate cervical pre-cancer screening

Knowledge of anyone who has had cancer of the cervix

Figure II shows that 40.4% of respondents knew someone with cervical cancer, while 59.6% did not.

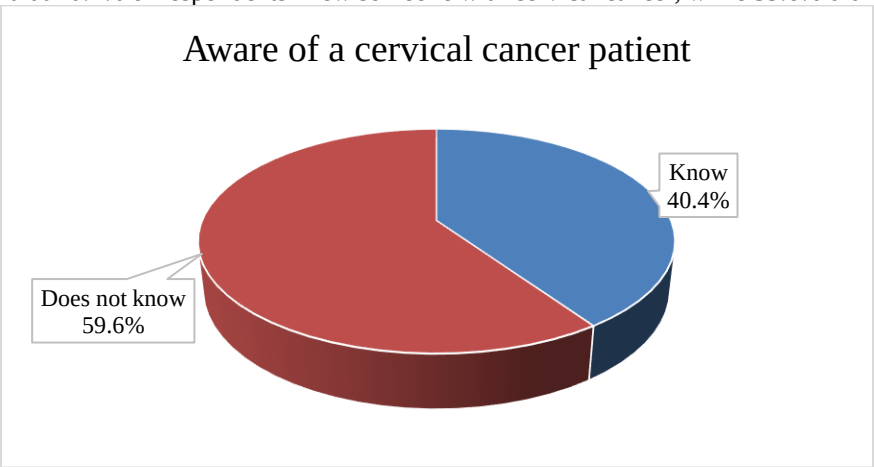

Figure II: Knowledge of anyone who has had cancer of the cervix

The analysis of Figure II revealed that 40.4% of respondents knew someone who had cervical cancer, while 59.6% did not. This significant finding underscores the role of personal connections in shaping health behaviours and attitudes towards cervical cancer screening. Knowing someone with cervical cancer can serve as a strong motivator for engaging in preventive measures, as personal experiences often influence health behaviours

(Ngune et al., 2020). The disparity in personal connections highlights the need for targeted interventions and educational campaigns to address varying awareness levels. Public health strategies should leverage personal stories and testimonials to enhance screening uptake, as narratives from cancer survivors can significantly impact perceptions and encourage preventive actions (Bula et al., 2022). The crosstabulation findings further supported this, showing higher agreement on the importance of screening among those who knew someone with cervical cancer, aligning with Swanson et al. (2018) and Mwenda et al. (2022) on the influence of social networks on health behaviours. It was further revealed from respondents' opinion that 9.6% of respondents reported a cervical cancer diagnosis, with symptoms including abnormal vaginal bleeding and discharge. Treatments included chemotherapy, radiotherapy, and surgeries, with 6.7% still undergoing treatment. Outcomes varied, with 0.4% cancer-free, and 7.5% fatalities, underscoring the need for early detection and comprehensive care.

Ever heard of a person who has died of cancer of the cervix

Figure III shows that 47.5% of respondents have heard of someone who died from cervical cancer, while 52.5% have not.

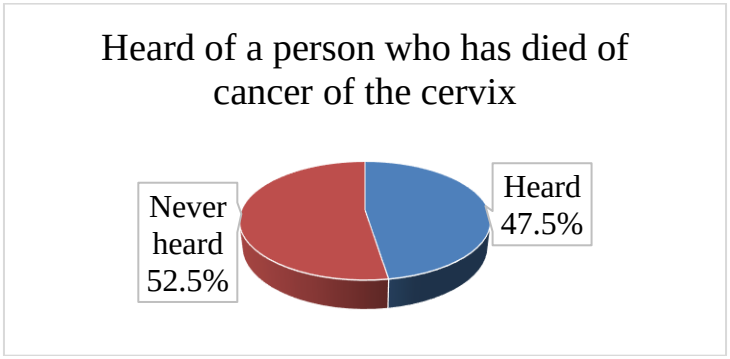

Figure III: Ever heard of a person who has died of cancer of the cervix

The findings in Figure III suggest that awareness about cervical cancer mortality is relatively high among the respondents, with nearly half (47.5%) having heard of someone who has died from the disease. This indicates significant cognizance of the severe consequences of cervical cancer within the study population, reflecting its status as a major global health issue (Ngune et al., 2020). However, the fact that a slight majority (52.5%) have not heard of such cases points to a potential gap in awareness or exposure to information about cervical cancer fatalities. This gap underscores the need for enhanced education and outreach efforts to raise awareness about the risks and impact of cervical cancer, ensuring that more people are informed about its serious implications and the importance of preventive measures (WHO, 2018). Improving early detection and treatment outcomes through these efforts is crucial for reducing the mortality rate associated with this disease.

IV. Conclusion

High awareness levels of cervical cancer among participants highlighted the importance of knowledge in encouraging screening, though financial and psychological barriers impeded actual uptake. Formal occupation increased awareness, while other demographic factors showed no significant impact, and personal experiences influenced attitudes towards screening

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