ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 11| Issue: 5| May 2025|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2025: 8.691 || ISI Value: 1.188

INFLUENCE OF PERCEIVED RISK, SOCIO-CULTURAL, AND HEALTH SYSTEM FACTORS ON THE UPTAKE OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN AGED 25–49 YEARS IN THIKA SUB-COUNTY

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Article DOI: https://doi.org/10.36713/epra21714
DOI No: 10.36713/epra21714

ABSTRACT

Background: *Cervical cancer is a leading cause of cancer-related deaths among women worldwide, especially in low- and middle-income countries. In Kenya, although the incidence is high, screening uptake remains low.*

Aim: *This study examined how perceived risk, socio-cultural, and health system factors influence cervical cancer screening uptake among women aged 25–49 in Thika Sub-County, Kenya.*

Methods: *A cross-sectional survey of 285 women was conducted using structured interviews. Data were analyzed using correlation and chi-square tests.*

Results: *Perceived risks such as multiple sexual partners ($\chi^2 = 35.117$, $p < 0.01$) and belief in the fatality of cervical cancer ($\chi^2 = 19.601$, $p < 0.01$) were significantly associated with screening uptake. Socio-cultural influences – religious beliefs ($r = 0.248$), cultural perceptions ($r = 0.249$), and family influence ($r = 0.313$) – also impacted uptake. Health system factors, including program availability ($\chi^2 = 49.172$, $p < 0.01$), sensitization by providers ($\chi^2 = 52.143$, $p < 0.01$), and access ($\chi^2 = 9.896$, $p = 0.019$), showed strong associations with screening behavior.*

Conclusion: *A multifaceted approach involving community education, health system strengthening, and culturally sensitive outreach is essential to enhance cervical cancer screening rates in Kenya.*

KEYWORDS: *Cervical Cancer Screening, Perceived Risk, Socio-Cultural Influence, Health Systems.*

1.0 INTRODUCTION

Cervical cancer remains a significant global health issue, ranking as the fourth most prevalent cancer in women worldwide. According to the World Health Organization (WHO), cervical cancer is highly preventable with early detection and vaccination, yet it continues to be a leading cause of cancer-related deaths, particularly in low- and middle-income countries (Bray et al., 2012). In Kenya, cervical cancer is the second most common cancer among women, with an annual incidence of 19.7 per 100,000 people (Chan & So, 2017). Despite the availability of screening programs, the uptake of these services remains alarmingly low. Research has shown that only 14% of Kenyan women between the ages of 25 and 49 participate in cervical cancer screening, indicating significant barriers to access (Ngugi et al., 2012).

The prevention of cervical cancer is primarily achieved through two approaches: vaccination against the Human Papillomavirus (HPV) and early detection through regular screening. While HPV vaccination is highly effective, its accessibility remains limited, especially in low-resource settings like Kenya (Ngugi et al., 2012). This makes screening, which detects precancerous lesions before they progress to cancer, the most viable preventive measure. However, the low uptake of cervical cancer screening in Kenya, particularly in Thika Sub-county, calls for an in-depth exploration of the factors influencing women's participation in these programs.

Factors influencing cervical cancer screening uptake are multifaceted and include knowledge and awareness, perceived risk, socio-economic status, cultural beliefs, and healthcare system factors. Studies have shown that while knowledge about cervical cancer and its prevention is crucial, many women still lack the necessary information or hold misconceptions about the screening process (Ezem, 2007). Additionally, socio-economic challenges such as cost, transportation, and healthcare infrastructure can further hinder access to screening services. Cultural and social factors, including stigma, fear, and gender norms, also play significant roles in shaping women's decisions to seek screening services (Madhivanan et al., 2015).

This study sought to explore these factors and their impact on the uptake of cervical cancer screening among women aged 25 to 49

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years in Thika Sub-county. By identifying the key barriers to screening, the study aimed to provide valuable insights that can inform targeted interventions to improve screening rates. The findings will contribute to the body of knowledge on cervical cancer prevention in Kenya and potentially inform health policy, program implementation, and public health education efforts aimed at reducing cervical cancer morbidity and mortality in the region.

Statement of the problem

Cervical cancer (CC) remains a major cause of illness and death among women globally, with low- and middle-income countries like Kenya bearing the greatest burden. Although cervical cancer screening services (CCSS) are essential for early detection and control, uptake remains low. In Kiambu County, only 20% of women aged 25–49 access screening, compared to a national rate of just 14%. This low participation is linked to factors such as limited awareness, cultural and religious beliefs, fear of the screening process, and poor access to services. This study focused on identifying the factors—specifically perceived risk, socio-cultural influences, and health system factors—that affect the uptake of CCSS among women aged 25 to 49 years in order to inform strategies that can improve screening rates in Thika Sub County and other settings.

Purpose of the study

This study aimed to examine the relationship between various influencing factors and the uptake of cervical cancer screening services among women aged 25 to 49 years in Thika Sub-County, Kenya.

Specific Objectives

1. To determine the prevalence of cervical cancer screening uptake in Thika Sub-County.
2. To assess how knowledge and perceived risk influence the utilization of cervical cancer screening services (CCSS).
3. To evaluate the effect of socio-economic and demographic factors on the uptake of CCSS.
4. To explore the role of health system factors in influencing the uptake of CCSS.

Research Questions

1. What is the prevalence of cervical cancer screening uptake in Thika Sub-County?
2. In what ways do knowledge and perceived risk affect the uptake of CCSS?
3. How do socio-economic and demographic characteristics influence the uptake of CCSS?
4. What is the role of health system factors in cervical cancer screening uptake?

Theoretical Review

This study was guided by the Health Belief Model (HBM), which explains health behavior based on individuals' perceptions of risk, benefits, barriers, and their confidence in acting. In the context of cervical cancer screening among women aged 25–49 years in Thika Sub-county, perceived risk (susceptibility and severity) influences whether women feel vulnerable to the disease and see it as serious enough to warrant screening. Socio-cultural factors, such as stigma, myths, and social norms, can act as barriers or motivators, while health system factors like accessibility, cost, and provider attitudes affect service uptake. Together, these elements shape women's decisions to seek or avoid screening.

Empirical Review

Cervical cancer remains a leading cause of cancer-related deaths in women in sub-Saharan Africa. Despite efforts to increase awareness, barriers to screening persist, influenced by cultural, socioeconomic, and healthcare-related factors.

Women's decisions to undergo cervical cancer screening are shaped by perceptions of susceptibility, severity, benefits, and barriers. Maseko et al. (2019) found that fear, lack of understanding, and cultural beliefs significantly hinder screening uptake. Cultural factors, such as fear of medical procedures and stigma, also play a significant role. Onuoha et al. (2024) highlighted these cultural challenges in Ebonyi State, Nigeria, while Moukam et al. (2021) identified similar issues in West Cameroon.

Additionally, healthcare providers are crucial in facilitating screening, but their limited resources and training often impair service delivery. Obol et al. (2021) noted that while health workers are aware of cervical cancer, insufficient resources and training hinder effective screening in Northern Uganda.

Educational interventions have shown promise in overcoming these barriers. Zhang et al. (2022) demonstrated that community-based education programs effectively promote screening among rural populations. However, addressing cultural misconceptions, fear, and healthcare infrastructure limitations is crucial for improving screening uptake.

To reduce cervical cancer mortality, a comprehensive approach that integrates education, healthcare workforce development, and community engagement is essential.

2.0 MATERIALS AND METHODS

The study employed a cross-sectional design and focused on women aged 25–49 years residing in Thika Sub-county, a group considered to be at a higher likelihood of sexual activity. A total of 285 women were selected using a stratified random sampling approach to ensure representation across different subgroups based on age, geographical location, and socio-demographic factors. The population was stratified according to the five wards in the sub-county, with each ward contributing an equal number of participants. Within each stratum, simple random sampling was used to select respondents, reducing selection bias and ensuring equal chances of participation. Inclusion criteria required participants to be within the specified age range and willing to provide informed consent, while individuals with

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cognitive impairments or outside the defined strata were excluded.

Table1:
Sample Size Distribution

Area	Sample population
Township	57
Kamenu	57
Hospital	57
Gatuanyaga	57
Ngoliba	57

Ethical Considerations

The study adhered to the Kenya Methodist University Ethical Committee (KMU-EC) protocol, with approvals from NACOSTI and the Ministry of Health. Written informed consent was obtained from participants, who were assured of voluntary participation and confidentiality. Interviews were conducted in private, with participants free to skip any distressing questions.

Data Collection and Statistical analysis

Data was collected using structured questionnaires that addressed socio-demographic characteristics, perceived risk, Social-cultural factors, and health system factors. The questionnaires were pretested for clarity and reliability. Trained research assistants administered the questionnaires to target participants in Thika Sub County. Data was entered into a database and analyzed using the Statistical Package for Social Sciences (SPSS) version 27. Descriptive statistics summarized the study population's characteristics. Categorical variables, such as education level and cervical cancer disease knowledge, were coded numerically, while continuous variables like age were retained in their original form. Correlation was used to analyze the association between the dependent and the independent variables. Chi-square test was also used to explore the association between categorical variables and correlation analysis to examine relationships between continuous variables. Statistical significance was set at $p < 0.05$.

3.0 RESULTS AND DISCUSSION

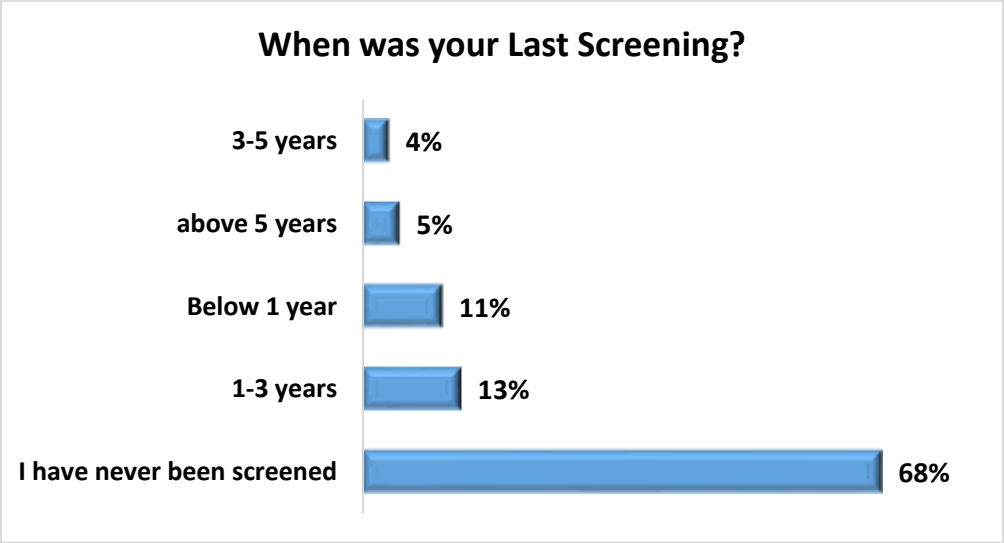
Response Rate

Out of the 310 questionnaires administered, 285 were returned, resulting in a response rate of 92%. According to Mugenda and Mugenda (2003), a response rate of 50% was considered adequate for analysis, 60% is acceptable, and 70% or higher is excellent, making this response rate highly satisfactory.

Cervical Cancer Screening uptake

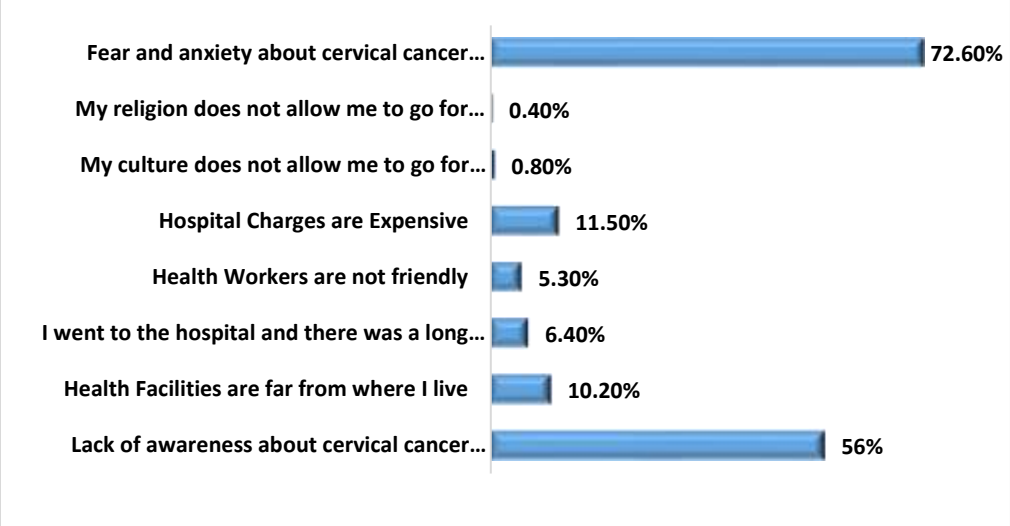
The study aimed to estimate the uptake of cervical cancer screening services. Screening uptake was defined as having undergone screening within the past five years. Figure 1 presents the cervical cancer screening rates in Thika Sub-county, while Figure 2 illustrates the most common reasons for not getting screened.

Figure 1
Cervical Cancer uptake in Thika Sub-county



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Figure 2
Reasons for not taking cervical cancer screening.



In Thika Sub-County, cervical cancer screening uptake remains low. A majority of women (68%) have never been screened, while only 13% were screened within the past 1–3 years and 11% within the last year. A smaller proportion were screened 3–5 years ago (4%) or more than five years ago (5%), indicating poor adherence to regular screening guidelines. Key barriers include fear and anxiety (72.6%), lack of awareness (56%), high costs (11.5%), and long distances to health facilities (10.2%). Other contributing factors include long waiting times, unfriendliness of healthcare workers, and minimal cultural or religious objections.

Result of the influence of perceived risks in Cervical Cancer Screening services uptake

The study also examined whether perceived risks influenced cervical cancer screening behavior. The findings are presented in Table 2.

Table 2
Influence of the perceived CC risks to CCS

Perceived Risk	Pearson Chi-Square (Xi)	P<0.05
Multiple Sex partners increase risk of CC.	35.117	<0.01
Family History of CC increase risk of CC.	11.394	0.022
I believe I am at a risk of developing CC.	3.614	0.461
CC Kills.	19.601	<0.01
I am more likely to participate in awareness campaign because of my concerns of CC risk.	8.292	0.081

*Statistical testing by chi square for contingency presentations (**P<0.05**)*

The findings, presented in Table 2, indicate a significant association between certain perceptions and screening uptake. Specifically, the belief that having multiple sexual partners increases the risk of cervical cancer was significantly associated with higher screening rates ($\chi^2 = 35.117$, $p < 0.01$). Similarly, the perception that cervical cancer is fatal significantly influenced screening behavior ($\chi^2 = 19.601$, $p < 0.01$). A positive family history of cervical cancer was also linked to increased screening uptake ($\chi^2 = 11.394$, $p = 0.022$). In contrast, perceived personal susceptibility to cervical cancer ($\chi^2 = 3.614$, $p = 0.461$) and willingness to participate in awareness campaigns ($\chi^2 = 8.292$, $p = 0.081$) did not show a statistically significant relationship with screening behavior. These findings suggest that perceived risk—particularly beliefs about sexual behavior and the severity of cervical cancer—plays a critical role in influencing screening decisions. Targeted health education interventions that directly address these perceptions may enhance cervical cancer screening uptake and support broader prevention efforts.

Association between social cultural factors and cervical cancer screening

The study also sought to understand the role that socio-cultural factors play on screening uptake. Table 3 presents the correlation matrix examining the relationship between sociocultural factors and cervical cancer screening (CCS) behavior.

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Table 3
Social Cultural Factors Correlation Matrix

	Screened for CC	Does your religion influence CCS?	Does your culture influence CCS?	Do your family members influence your decision to go for CCS?
Screened for CC	1.000	0.248	0.249	0.313

The analysis revealed a weak positive correlation between religious influence and screening uptake (r = 0.248), and a similar moderate correlation for cultural influence (r = 0.249), suggesting both factors have a limited effect on screening behavior. Notably, family influence demonstrated a stronger positive correlation (r = 0.313), indicating a more substantial role in shaping individuals' screening decisions. Overall, while all three factors—family, culture, and religion—show some association with CCS uptake, family influence appears to be the most significant. These findings underscore the importance of considering sociocultural dynamics in interventions aimed at improving CCS participation.

Influence of Health System Factors on Cervical cancer screening uptake

The study further sought to identify the relationship between health system factors and cervical cancer screening. The results are outlined on table 4.

Table 4
Influence of Health System factors to CCS

Health System Factors	Pearson Chi-Square (xi)	P<0.05
Are there CCS programs in your area?	49.172	<0.01
Which among these encourages you to undergo CCS (Access to screening facilities, Health provider, or Reduced cost Duration of screening)	9.896	0.019
Which Health provider carried cervical screening sensitization in your area	52.143	<0.01

Statistical testing by chi square for contingency presentations (P<0.05)

Table 4 highlights a significant association between cervical cancer screening (CCS) uptake and the presence of organized screening programs (Chi-square = 49.172, $p < 0.01$), suggesting that the availability of structured services encourages screening. Similarly, the involvement of health providers in cervical cancer sensitization was significantly associated with increased screening uptake (Chi-square = 52.143, $p < 0.01$), emphasizing the role of healthcare professionals in promoting awareness. Other system-related factors such as access to screening facilities, provider recommendations, and affordability also showed significant associations (Chi-square = 9.896, $p = 0.019$). These findings underscore the importance of health system interventions in promoting CCS. Enhancing accessibility, reducing costs, and increasing awareness through community outreach and health worker engagement can significantly boost screening rates. To improve early detection and reduce cervical cancer-related mortality, investment in capacity building, expansion of screening programs, and robust community engagement is essential.

4.0 CONCLUSION

In conclusion, this study sheds light on the powerful interplay between perception, culture, and system-level factors in shaping cervical cancer screening uptake among women aged 25–49 in Thika Sub-County, Kenya. Fear of fatality and the perceived risk linked to multiple sexual partners (Chi-square = 35.117 and 19.601, respectively; $p < 0.01$) emerged as strong motivators for screening, while family influence (r = 0.313) proved to be the most impactful social driver. Though religion (r = 0.248) and culture (r = 0.249) played a more moderate role, their influence remains notable. Most critically, structural enablers—such as the presence of screening programs (Chi-square = 49.172, $p < 0.01$), health worker engagement (Chi-square = 52.143, $p < 0.01$), and access to facilities (Chi-square = 9.896, $p = 0.019$)—greatly boosted screening rates. These findings call for a multi-layered approach: empowering women with accurate risk perceptions, engaging families and communities, and strengthening health systems to break the silence and stigma surrounding cervical cancer. With strategic, culturally sensitive interventions, we can turn the tide against cervical cancer and save countless lives

5.0 RECOMMENDATIONS

To improve cervical cancer screening in Thika Sub-County, health education campaigns must be scaled up to dispel myths and raise awareness—delivered with cultural sensitivity to ensure resonance with local communities. Strengthening healthcare infrastructure and integrating screening into routine primary care will enhance accessibility. Community engagement is essential; partnering with religious leaders and grassroots organizations can empower women to make informed health decisions. Policy and advocacy efforts should aim to increase funding for research and targeted interventions to address persistent health disparities. Finally, Ongoing monitoring and evaluation mechanisms should be instituted to track progress and inform future program adjustments.

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Source of funding
No external funding

Conflicts of interest
The authors declare no conflict of interest

Author Contribution
FNK and Dr. LM conceptualized the study. FNK, Dr. LM, and Dr. CM jointly designed the research. FNK led the data collection and analysis and drafted the initial manuscript. All authors reviewed and revised the manuscript, and approved the final version for submission.

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