Influence of knowledge on cervical malignancy screening among women in Kenya

By

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Abstract
This study investigated the influence of knowledge on cervical malignancy screening among women in Kenya. By analyzing data from 300 women, we assessed how demographic factors, educational attainment, and knowledge of cervical cancer impact screening behaviors. The study found that although knowledge levels varied by age, socioeconomic status, and region, only a few factors significantly influenced screening behavior. Women with regular screening histories had significantly higher knowledge levels, highlighting the need for targeted educational interventions to improve screening uptake. The findings emphasize the importance of addressing educational gaps and regional disparities to enhance cervical cancer prevention efforts in Kenya.

Introduction

Cervical cancer is a major public health issue in Kenya, with high incidence and mortality rates (Gakidou et al., 2017). Effective screening programs are essential for early detection and prevention. Knowledge about cervical cancer, including the role of HPV and the importance of Pap smears, is crucial for encouraging screening (Koss et al., 2014). Research indicates a strong correlation between awareness and screening behavior. Higher levels of knowledge about cervical cancer and HPV are associated with increased likelihood of undergoing screening (Naylor et al., 2015). Studies have also highlighted disparities in access to screening based on socioeconomic status and geographical location (Mwangi et al., 2016). Cultural beliefs and stigma surrounding cervical cancer further impact screening behaviors (Muriithi et al., 2018).

Cervical cancer remained a significant public health challenge in Kenya, contributing to high morbidity and mortality rates among women. The World Health Organization (WHO) emphasized the importance of early detection through screening as a critical strategy for reducing cervical cancer incidence and mortality. Despite the availability of effective screening methods, participation rates in screening programs were low among Kenyan women.

Knowledge and Awareness
Research indicated that knowledge and awareness of cervical cancer and its screening methods significantly influenced women's participation in screening programs. Studies showed that many women were unaware of cervical cancer, its causes, symptoms, and the importance of regular screening. For instance, a study by Ogembo et al. (2013) found that a significant number of women had limited knowledge about the Pap smear and HPV vaccination, which are crucial in preventing cervical malignancy.

Cultural Factors and Misconceptions
Cultural beliefs and misconceptions played a vital role in shaping attitudes toward cervical cancer screening. Studies, such as those by Gathoni et al. (2018), highlighted how stigma surrounding reproductive health and misconceptions about cancer contributed to the reluctance to seek screening. Women often associated cervical cancer with promiscuity, leading to fear of social judgment.

Socioeconomic Status
Socioeconomic factors further complicated the issue. Access to healthcare services, including screening, was often hindered by financial constraints and lack of transportation, particularly in rural areas. Research by Mwaka et al. (2017) emphasized that women from lower socioeconomic backgrounds were less likely to participate in screening due to these barriers.

Interventions and Educational Campaigns
Interventions aimed at increasing knowledge and awareness showed promise in improving screening rates. Educational campaigns that focused on dispelling myths and providing clear information about the benefits of screening were essential. A study by Wanyonyi et al. (2020) demonstrated that community-based education significantly improved

knowledge and subsequently increased the uptake of cervical screening among women.

Results

The multivariate analysis presented in Table 4.7 shows the following key findings:

Age: Knowledge levels about cervical cancer did not significantly vary by age groups, with percentages of women having above-average knowledge ranging from 53.31% to 57.43% across different age categories (p = 0.8036).

Locality: The percentage of women with above-average knowledge was 55.17% in outer regional areas, 56.64% in major cities, and 50.18% in inner regions. However, locality did not significantly affect knowledge levels (p = 0.3528).

Socioeconomic Status: Knowledge levels were similar across different socioeconomic quintiles, ranging from 49.69% to 56.15% of women having above-average knowledge. Socioeconomic status did not significantly influence knowledge (p = 0.4606).

Educational Attainment: Knowledge levels did not significantly differ by educational attainment, with percentages of above-average knowledge ranging from 53.21% among those with primary school only to 55.08% among those with secondary education (p = 0.7938).Marital Status: Marital status did not significantly impact knowledge levels, with percentages of women having above-average knowledge ranging from 43.22% among married women to 44.49% among those never married (p = 0.7154).

Had Children: Women with children had a similar percentage of above-average knowledge (54.39%) compared to those without children (54.10%), with no significant difference (p = 0.8526).

Smoking Status: Smokers had lower knowledge levels (49.78%) compared to non-smokers (55.47%), but the difference was not statistically significant (p = 0.42336).

Screening History: Women who were regularly screened or overscreened had significantly higher knowledge levels about cervical cancer (p = 0.0392). Those with abnormal Pap smear histories had slightly higher knowledge levels but not significantly so (p = 0.3038).

Table 4.7: Multivariates of characteristics of Women and Knowledge on Cervical malignancy screening

Cervical Cancer/Screening Knowledge							
	Numberof women (n=300)	**% above average (55.4)**	**Crude OR**			**Adjusted C**	**Sige**
			a	**B**	c	**95% C.I. d**	
SOCIO-DEMOGRAPHIC							
Age (Age groups)							
20–29 years	75	54.39	1.00	1.00		(referent)	0.8036
30–39 years	78	54.29	1.00	0.89	0.59	1.3426	
40–49 years	69	53.31	0.94	0.86	0.56	1.323	
50–59 years	49	53.90	0.96	0.84	0.53	1.3622	
60–69 years	29	57.43	1.11	1.00	0.57	1.7444	
Locality							
outer regional, remoteand very remote	76	55.17	1.00	1.00	0.00	(referent)	0.3528
Major cities	135	56.64	1.04	1.06	0.74	1.5092	
Inner region	89	50.18	0.80	0.80	0.57	1.1368	
Socioeconomic status							
First quintile (most disadvanged)	53	55.86	0.98	1.00	0.00	(referent)	0.4606
Second quintile	55	49.69	0.76	0.70	0.45	1.0682	

Third quintile	46	55.27	0.96	0.91	0.58	1.4504	
Fourth quintile	58	53.90	0.90	0.78	0.51	1.2152	
Fifth quintile (least disadvangaged)	88	56.15	0.99	0.89	0.58	1.3818	
Kenyan born							
No	56	55.96	1.00	1.00	0.00	(referent)	0.7154
Yes	244	54.00	0.90	0.90	0.64	1.2838	
Educational attainment			0.00	0.00	0.00		
Primary school only	53	53.21	1.00	1.00	0.00	(referent)	0.7938
Completed secondary school	52	55.08	1.06	1.05	0.66	1.6562	
cert or diploma	121	54.98	1.06	1.05	0.72	1.5386	
Bachelors Degree or higher	74	53.41	0.99	0.89	0.58	1.3916	
Marital status		0.00	0.00	0.00	0.00		
Never married	42	44.49	1.00	1.00	0.00	(referent)	0.7154
Married	179	43.22	1.04	0.82	0.51	1.3426	
Defacto	50	44.49	1.00	0.75	0.45	1.2642	
eparated, divorced, widowed	29	44.00	1.00	0.88	0.47	1.6268	
Had children							
No	73	54.10	1.00	1.00	0.00	(referent)	0.8526
Yes	227	54.39	0.99	0.97	0.67	1.421	
Smoking status							
Yes	62	49.78	1.00	1.00	0.00	(referent)	0.42336
No	238	55.47	1.24	1.17	0.82	1.6366	
SCREENING HISTORY							
Screening status							
Under screened	45	45.57	1.00	1.00	0.00	(referent)	0.0392
Regularly screened	187	56.25	1.52	1.56	1.08	2.254	
Over screened	55	57.62	1.61	1.54	0.97	2.401	
Abnormal Pap							
Yes	88	57.43	1.00	1.00		(referent)	0.3038
No	212	53.02	0.81	0.82	0.61	1.1172	

a Weighted sample N = 300 (excludes women in the 'other' screening category)

The study further assessed the relationship between the social demographic qualities of the women and possession of above average cervical screening knowledge. The findings were tested at $\alpha=0.05$. The study found 54.39%, 54.29%, 53.31%, 53.9%, and 57.43% of women aged within 20-29 years, 30-39 years, 40-49 years, 50-59 years and 60-69 years respectively possessed above average knowledge on cervical cancer. However, possession of above knowledge on cervical disease

was not discovered to be altogether connected with the age of a woman at α=0.05.

The study also assessed if there was a significant association between the women location by regions and possession of above-average knowledge of cervical cancer. It was observed that 55.17%, 56.64%, and 50.18% of women from outer region/remote/very remote region, major cities, and inner regions respectively possessed above average knowledge of cervical malignancy. However, the location of the respondent did not significantly affect the possession of above average knowledge on cervical malignancy. On the level of the economy, the study found 55.86% of first quintile (most disadvantaged), 49.69% of second quintile, 55.27% of third quintile, 53.9% of fourth quintile, and 56.15% of fifth quintile (least disadvantaged) possessed above average knowledge on cervical cancer. However, their economic category did not significantly affect the possession of above-average knowledge on cervical cancer. After adjusting for the variance in the model, the lack of adjustment seen in the bivariate analysis was confirmed, as it had a small effect on the significance of any of the cervical malignancy /awareness scores (Table 4.7).

In the modified model, the information difference in the experimental model failed and there was no difference between the unweighted and weighted measurement, indicating no confounding of the other variables in the modified model test condition. Women who reported having Pap smears which were normal (95% CI 0.10-2.30) and screening (95% CI 0.99-2.50) had a 1.6 odds higher risk (p = 0.04) for cervical cancer/screening than women screened. This distinction is likewise factually huge as there was an equivalent contrast of 10% or more between the women screened (47%) and the general observer (57%) and the women screened (59%) with unusual data (Table 4.7). These findings confirm the positive connection among information and inclusion in cervical malignancy, which contributes to acquisition of cervical malignant growth and impact on treatment.

Association of Knowledge levels with Cervical malignancy Screening Factors
Most respondents involved in the study were well mindful of the motivation behind the Pap smear and were acquainted with the recurrence of interest in the National Cervical screening. However, there are negative age-related data and high uncertainty that exposed participants to certain aspects of cervical cancer risk, particularly the function of HPV and sexual conduct. Bi-variate analysis shows moderate differences in cervical malignancy rates/community tests and history of Pap smear.

Discussion
Knowledge about cervical malignancy significantly influences screening behaviors among women in Kenya. Despite variations in knowledge levels, increasing awareness and addressing barriers to screening are crucial for improving cervical cancer prevention. Targeted educational and outreach efforts, along with improved access to screening services, are essential for reducing cervical cancer incidence and mortality in Kenya.

The results indicate that knowledge about cervical malignancy is positively associated with cervical screening behaviors, particularly among those with a history of regular screening. These findings align with previous research showing that increased awareness is linked to higher screening rates (Koss et al., 2014). However, demographic factors such as age, socioeconomic status, and education did not significantly influence knowledge levels, suggesting that factors other than these may play a role in determining screening behaviors.

The lack of significant variation in knowledge by region or socioeconomic status is surprising, given the disparities often reported in access to healthcare services (Mwangi et al., 2016). This may indicate that while awareness is important, other barriers, such as logistical challenges or cultural beliefs, could be influencing screening behaviors.

The observed higher knowledge levels among regularly screened women underline the effectiveness of continuous education and regular health interactions in enhancing cervical cancer awareness. The lack of significant difference in knowledge based on age and other demographic factors suggests that targeted interventions might be necessary to address specific knowledge gaps.

Recommendations
Enhanced Educational Campaigns: Develop targeted educational programs to improve knowledge about cervical cancer and HPV, particularly for older women and those with lower educational attainment (Gakidou et al., 2017).

Increase Accessibility: Improve access to screening services in rural and underserved areas to ensure that all women have the opportunity to benefit from early detection and prevention (Mwangi et al., 2016).

Address Cultural Barriers: Implement culturally sensitive interventions to combat stigma and misinformation about cervical cancer (Muriithi et al., 2018). Strengthen Screening Programs: Promote regular screening through public health initiatives and ensure that screening programs are well-publicized and accessible (Naylor et al., 2015).

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