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Original Research Article

Knowledge, attitudes, and practices towards cervical cancer screening among health students: a case of Kenya Medical Training College

Faith M. Mutuku*, Careena Otieno, Ronnie Midigo

Department of Community Health, Great Lakes University of Kisumu, Kisumu, Kenya

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***Correspondence:**
Faith M. Mutuku,
E-mail: faymbinya@gmail.com

ABSTRACT

Background: Cervical cancer is the fourth most diagnosed cancer and fourth leading cause of cancer mortality among women globally. In developing countries, it is the second most common cancer and the leading cause of cancer deaths among women. In Kenya, 33 per 100,000 women have cervical cancer and 22 per 100,000 succumb to the disease. Despite being preventable, through screening and treatment of premalignant lesions, screening is however not readily utilized in most developing countries, including Kenya. This study aimed to assess health students' knowledge, attitude and practices on cervical cancer screening.
Methods: Descriptive cross-sectional study design was conducted among 354 female Kenya Medical Training College students using a self-administered questionnaire. Data analysis was done using Statistical Package for Social Sciences (SPSS) version 25. Scores for knowledge and attitude were computed as either poor, fair or good.
Results: Over half of the respondents 213 (60%) had low knowledge of cervical cancer risk factors and only 35 (10%) had ever been screened. Majority 272 (76%) had good attitude towards screening.
Conclusions: The study showed that screening is influenced by knowledge and attitude. Students with good knowledge and attitude were more likely to screen, but overall screening rates remain low. Developing tailored screening programs for health students are recommended to increase screening rates.

Keywords: Attitude, Health students, Kenya Medical Training College, Knowledge, Practices

INTRODUCTION

Cancer of the cervical remains a major global public health concern, ranking as the fourth most frequently diagnosed cancer and the fourth leading cause of cancer-related mortality among women worldwide.[1] The burden is significantly higher in low- and middle-income countries (LMICs), including Kenya, where more than 85% of new cases and mortalities occur due to inadequate access to screening and early treatment.[2] In Sub-Saharan Africa, it is accounts for approximately 24% of the global cancer cases and the leading cause of cancer-related deaths among women despite the region having only about 14% of the world's female population.[3] It is estimated that East Africa has the highest rate of age-standardized cervical cancer deaths in than any other region in the world.[3] In Kenya, cancer of the cervix is the second most common cancer among women, with an estimated incidence rate of 33 per 100,000 and a mortality rate of 22 per 100,000.[1]

Cervical screening is an effective strategy to identify pre-malignant lesions for early treatment and thereby averting the disease before its onset. It is expected that most cervical cancer cases prevented through HPV vaccination and screening are to be among women in Sub-Saharan Africa. The prediction through different models is that twice-life time screening will prevent approximately 50 million cases in Sub-Saharan Africa over the next century, accounting for about 70% of all cases averted in LMICs.[4] In Kenya and other LMICs, cervical cancer screening remains low despite it being the strategy that

highly prevents cervical cancer through early identification and treatment of precancerous lesions.[5]

The low utilization of cervical cancer screening services is largely due to inadequate knowledge and negative attitudes toward the practice among women. Additionally, access to screening services in developing countries is limited compared to developed nations, and thereby to poor health-seeking behavior.[6] The gap is further worsened by healthcare workers' (HCWs) limited knowledge of cervical cancer screening and their negative attitudes toward the practice. This ultimately hinder cervical cancer prevention efforts.[7] Healthcare workers (HCWs) play a crucial role in information dissemination about cervical cancer screening. Their influence is also significant in educating women, which consequently encourages behavior changes and increases the likelihood of women seeking cervical cancer screening. Women are able to utilize screening services when they gain better knowledge about cervical cancer, its risk factors and screening methods and the ways in which it can be prevented.[6,8] The knowledge and attitudes of health students towards cervical cancer screening is critical in shaping community health outcomes through public health education. This is because these health students are the future healthcare providers. This study aimed at assessing knowledge and attitudes of Kenya Medical Training College students towards cervical cancer screening.

METHODS

Study design and setting

The study used a descriptive cross-sectional design to assess knowledge, attitudes, and practices towards cervical cancer screening among health students. The study was conducted at Kenya Medical Training College which is a leading medical training institution located in Nairobi, Kenya.

Sample size determination

Sample size was determined by use of the Fisher et al, formula.

$$n = \frac{z^2 p(1-p)}{d^2}$$

Where: n- represent desired sample size.

z- represents the standard normal deviation at 95% confidence level.

d- is the target margin of error put at 0.05.

p- the assumption on knowledge and attitudes towards cervical cancer screening.

$$n = \frac{1.96 \times 1.96 \times 0.52 \times 0.48}{0.052}$$

N =384

Since the population is less than 10,000, the sample was adjusted as follows;

Nf=n/ (1+n/N)

Where: N=target population

Nf = desired sample size

=384/ (1+384/2000) =322.

The sample size will be 322 respondents. To cater for non-responses and reduce sampling error, 10% was added.

Therefore, n= 354

Study population and sampling technique

The study targeted female undergraduate students in health-related programs and study population was health students at Kenya Medical Training College. A sample size of 384 was determined using Fisher et al formula. Respondents were selected through simple random sampling.

Data collection

A structured, self-administered questionnaire was used to collect data on demographic characteristics, knowledge, attitudes, and practices related to cervical cancer screening. The questionnaire was pre-tested for reliability and validity. Data collection was conducted over a period of march to May 2023 and all ethical considerations were strictly observed.

Data analysis

Data was analyzed using Statistical Package for Social Sciences version 25 (SPSS v.25). Descriptive statistics such as frequencies, percentages, mean, median and mode were computed. Scores for knowledge and attitude were categorized as either poor, fair or good. ANOVA was used to assess differences in cervical cancer screening among groups.

Ethical considerations

Ethical approval was obtained from the Kenyatta National Hospital-University of Nairobi Ethical Review Committee. A research permit to conduct the study was obtained from National Commission for Science, Technology and Innovation (NACOSTI). Permission was obtained from KMTC administration and an informed

obtained from all the study respondents. No personal identifying information was collected and all responses were anonymized through coding of questionnaires.

RESULTS

Respondents' demographic characteristics

From the 353 participants included in the study, majority of were in their second year of study 183 (51.7%), while only 21 (6%) in the third-year of study. A large proportion of 299 (84.5%) were single. Most of the respondents, 269 (75.9%) reported having no children. The mean age of the respondents was 22.75 years old. Nearly half of the participants 174 (49.1%) were aged between 21 and 23 years old and 49 (13.8%) were aged more than 27 years old (Table 1).

Table 1: Demographic characteristics of respondents.

Variable		Frequency	Percent
Year of study	First	76	21.6
	Others	73	20.7
	Second	183	51.7
	Third	21	6
Marital status	Married	55	15.5
	Single	299	84.5
Number of children	1-2	76	21.6
	3-5	6	1.7
	Carrying the first pregnancy	3	0.9
	None	269	75.9
Age (years)	18-20	70	19.8
	21-23	174	49.1
	24-26	61	17.2
	27 and above	49	13.8

Uptake of cervical cancer screening

Out of the total participants, only a small proportion (10%) reported having undergone cervical cancer screening, while the vast majority (90%) had never been screened (Figure 1).

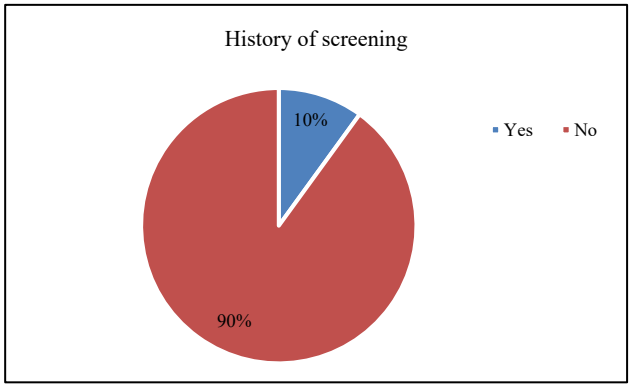

Figure 1: Cervical cancer screening uptake.

Knowledge about cervical cancer

The most commonly recognized cervical cancer risk factor was having multiple sexual partners 159 (44.8%) and fewer respondents identified early sexual intercourse 8 (5.2%) as risk factor to development of cervical cancer. More than half of the respondents 198 (56%) identified women of reproductive age as most vulnerable.

Table 2: Cervical cancer knowledge.

Variables	N	%
Risk factors		
Multiple sexual partners	159	44.8
Early sexual intercourse	18	5.2
HPV infection (human papillomavirus)	149	42.2
Infection with the human immunodeficiency virus (HIV)	12	3.4
Cigarette smoking	6	1.7
Ever used contraceptive methods	9	2.6
Vulnerability		
Women age >50 years	6	1.7
Reproductive age	198	56
Both of the above	149	42.2
Sign and symptoms		
Vaginal bleeding	113	31.9
Vaginal bleeding; foul-smelling, vaginal discharge	15	4.3
Vaginal bleeding; foul-smelling vaginal discharge; contact bleeding	15	4.3
Vaginal bleeding; contact bleeding	3	0.9
Foul-smelling; vaginal discharge	195	55.2
Foul-smelling vaginal discharge; contact bleeding	3	0.9
Contact bleeding	9	2.6
Prevention		
Avoiding multiple sexual partners	113	31.9
Avoiding early sexual intercourse	12	3.4
Screening and treatment	98	27.6
All of the above	131	37.1
What are the ways of screening		
Pap smear	287	81
Visual inspection of cervix	15	4.3
Human papillomavirus DNA testing	30	8.6
Liquid-based cytology	12	3.4
There is no way of screening	9	2.6

The most commonly identified sign or symptom of cervical cancer was foul-smelling vaginal discharge 195 (55.2%). A smaller number of respondents identified combinations of symptoms, including vaginal bleeding and foul-smelling discharge 15 (4.3%), to be a sign or symptom of cervical cancer. Avoiding multiple sexual partners alone was cited by 113 (31.9%) while 98 (27.6%) identified screening and treatment as a preventive measure. Most respondents 287 (81%) were

aware of the Pap smear as a screening method for cervical cancer. A small proportion of respondents 9 (2.6%) believed that there are no methods for screening (Table 2).

Attitude towards cervical cancer and screening

Respondents' attitudes regarding cervical cancer and its screening were assessed using a series of statements on a 3-point Likert scale. An overall score of 0-4 was rated as poor attitude, 5-10 as fair and 11-21 as good attitude. The overall mean score was 18.34 (SD=0.26), indicating a generally good attitude towards cervical cancer and its screening.

Majority of the respondents agreed with the statement that cervical cancer can affect any young woman, with a high mean score of 2.93 (SD=0.32). Likewise, most agreed that screening causes no harm 2.85 (SD=0.42) and that they would be willing to undergo screening if it was free and harmless 2.83 (SD=0.46).

Table 3: Attitudes towards cervical cancer screening.

Variables	Score	SD
Carcinoma of the cervix is highly prevalent and is a leading cause of deaths amongst all malignancies in Kenya	2.7	0.547
Any young woman including you can acquire cervical carcinoma	2.93	0.316
Carcinoma of the cervix cannot be transmitted from one person to another	1.99	0.899
Screening helps in prevention of carcinoma of the cervix	2.67	0.643
screening causes no harm to the client	2.85	0.422
Screening for cervical cancer is not expensive	2.37	0.775
if screening is free and causes no harm, will you screen	2.83	0.462
Overall score	18.34	0.26044

However, some poor attitudes were noted, where the statement "carcinoma of the cervix cannot be transmitted from one person to another" had a score of 1.99 (SD=0.90). This reflects some confusion about the infectious nature of the disease. Additionally, perceptions about the cost of screening were mixed, with a lower mean score of 2.37 (SD=0.78) for the statement "screening for cervical cancer is not expensive" (Table 3).

DISCUSSION

The study aimed at assessing health students' knowledge, attitude and practices on cervical cancer screening, which are important early intervention strategies. Findings revealed that majority of the students had good attitudes and good awareness of at least one screening method. However, only a small proportion had ever been screened for cervical cancer. This finding is not unique since previous studies have documented a similar gap across various populations.[9]

One of the potential key reasons contributing to low screening uptake could be the demographic profile of the respondents. The mean age was 22.75 years with largest proportion (49%) of about half of all respondents being aged between 21 and 23 years old. Too, majority were single and not having children. This demographic often perceives themselves less likely to be at any risk for developing cervical cancer. This may result in lower prioritization of cervical cancer screening, even among those who recognize its importance. Similar to this finding, Tiruneh et al, and Alsalmi et al, reported that young, unmarried women often do not prioritize cervical cancer screening due to low perceived susceptibility.[10,11] While several studies have documented that young and unmarried women often exhibit low cervical cancer screening uptake due to low perceived risk, contrary studies have suggested this not to be uniform.[12]

Most of the respondents identified having multiple sexual partners and human papilloma virus infection as risks for developing cervical cancer. However, awareness of other important factors such as early sexual debut, smoking, and immunosuppression was limited. This could be an indicator of college-based reproductive health education often failing to comprehensively cover all the risk factors of cervical cancer. The limited recognition of other risk factors may also indicate cultural or social discomfort in discussing sexuality openly in academic or health settings. This finding aligns with the global awareness trends where, most respondents identified multiple sexual partners and human papilloma virus infection as primary risk factors for cervical cancer. This is because these two factors are highly and commonly emphasized in public health messaging, unlike the other risk factors such as early sexual debut, cigarette smoking, and immunosuppression.[13]

The most commonly identified sign or symptom of cervical cancer was foul-smelling vaginal discharge 195 (55.2%) and a small proportion identified a combination of signs and symptoms of cervical cancer. Discussions about reproductive health issues are sensitive and most people shy away from engaging in them. Similarly, inadequate awareness of the full spectrum of symptoms and signs of cervical cancer has been documented by studies in various low- and middle-income settings, often attributed to insufficient health education and stigma surrounding reproductive health matters. Such stigma may discourage women from discussing or recognizing symptoms considered private or embarrassing, further compounding diagnostic delays.[14,15]

Readiness and willingness to undergo screening was varying under certain conditions, especially if it was offered for free and if perceived to be not invasive. Most of the respondents reported that they would screen if the service was offered for free. This suggests that financial barrier to be a factor hindering cervical cancer screening. Considering that Kenya is a low-middle income country, cost of screening services significantly influence participation in cancer preventive care. This finding is consistent with other studies from comparable low-resource settings, where financial constraints have been shown to significantly impact individuals' participation in preventive health measures, including cervical cancer screening.[6,16]

CONCLUSION

Overall, while attitudes toward cervical cancer screening are generally positive and awareness of screening methods is good, screening uptake is low. There is limited comprehensive knowledge about cervical cancer and its screening, perceived low risk due to demographic characteristics, and concerns about cost. For impactful change, educational programs should move beyond mere awareness and focus on correcting misconceptions, emphasizing risk irrespective of marital or reproductive status, and advocating for accessible, low-cost screening services on university and college students.

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