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Prevalence and Associated Factors of Cervical Cancer Screening among Somali Women in an Urban Settlement in Kenya

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Abstract

Background: In Kenya, cervical cancer is ranked as the most frequent cancer among women with about 4,802 new cases being diagnosed and approximately 2,451 lives lost to it. Screening by Pap smear facilitates early detection, prompt treatment and consequently reduces mortality from cervical cancer. Though cervical screening services exist in Kenya, there is still high mortality rate due to cervical cancer.

Objective: To determine prevalence and associated factors of cervical cancer screening among Somali women in Eastleigh, Nairobi, Kenya.

Materials and methods: A cross-sectional study was conducted among 104 women selected by multi-stage sampling approach. The data was collected using pre-tested semi-structured questionnaire. Chi-square test (p<0.05) and odds ratio with corresponding 95% confidence interval were used to determine the association between screening and independent variables. Multivariate analysis was performed to determine predictors of cervical cancer screening.

Results: The study revealed that only 32.7% of the women had Pap smear test. Multiple logistic regression revealed the following factors as independent predictors of Pap smear test: awareness on the use of Pap smear test (AOR=4.48; 95% CI: 1.16-17.29; p=0.03), perceived susceptibility to cervical cancer (AOR=18.41; 95% CI: 4.88-69.43; p<0.001) and no perceived embarrassment of Pap smear test (AOR=12.02; 95% CI: 2.75-52.48; p=0.001).

Conclusion: Based on our findings special emphasis should be directed at increasing awareness and perception about cervical screening as well as susceptibility of cervical cancer at all primary health care points through a well-designed health education programme.

Keywords: Cervical cancer; Pap test; Screening; Somali women

Introduction

Cervical cancer is a malignant neoplasm of the cervix uteri. It may be completely asymptomatic in early stages [1]. However, it may present as persistent pelvic pain, unexplained weight loss, bleeding between periods and after sexual intercourse, unusual vaginal discharge, and pain after sexual intercourse in its advanced stage [2]. In the developing world, women generally do not know that they have this cancer until it is at a symptomatic and untreatable stage [3]. Infection with human papillomavirus (HPV) types 16 and 18 cause 75% of cervical cancer globally [4]. Other risk factors include tobacco consumption, multiple sexual partners, early age of sexual intercourse, increasing parity, prolonged use of oral contraceptive pills and having sexually transmitted diseases [5].

Cervical cancer is the fourth most common cancer in women, and the seventh overall, with an estimated 528,000 new cases in 2012 and 84% were from developing countries [6]. Particularly it remains the most common cancer in women in Eastern and Central Africa. High-risk regions, with estimated age-standardised rates (ASRs) over 30 per 100,000, include Eastern Africa (42.7), Melanesia (33.3), Southern (31.5) and Middle Africa (30.6). Rates are lowest in Australia/New Zealand (5.5) and Western Asia (4.4) [6].

There were an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5% of all female cancer deaths. Almost nine out of ten (87%) cervical cancer deaths occur in the less developed regions. The mortality varies between the different regions of the world, with rates ranging from less than 2 per 100,000 in Western Asia, Western Europe and Australia/New Zealand to more than 20 per 100,000 in Melanesia (20.6), Middle Africa (22.2) and Eastern Africa

(27.6) [6]. Moreover, affecting relatively young women, cervical cancer is the largest single cause of years of life lost to cancer in the developing world [7]. Women in sub Saharan Africa lose more years to cervical cancer than to any other type of cancer and it affects women at a time in their life when they are critical to the social and economic stability of their families [8].

In Kenya, cervical cancer is ranked as the number one cause of female cancers, resulting in an estimated 4,802 women being diagnosed with cervical cancer (estimations for 2012) and 2,451 dying from the disease annually [9]. Further, Kenya ranks 16 out of the 20 high cervical cancer disease burden countries with an age standardized ratio of 40.1 per 100,000 worldwide [6]. Age standardized death rates for countries with high cervical screening like USA and Canada is 2.5 per 1,000 women, while in Kenya it is 28.7 (the total number of deaths per year per 1,000 people of a given age) [10]. In Kenya, most cancers are often diagnosed at the advanced stages of the disease resulting in structural, physiological and psychological, as well as socioeconomic challenges [11].

Papanicolaou smear (Pap test) is the most effective way for detection of cervical cancer [12]. It detects pre-cancer cells in the early stages when it can be treated, and thus may reduce the number of deaths which occur due to cervical cancer. Although screening services are available in Kenya, many women do not go for screening and mortality rate due to cervical cancer is still high [13]. In one study it was reported that only 12.3% Kenyan women went for cervical cancer screening [14]. The low percentage of attendance was due to low perception of risk, fear of abnormal cervical cancer screening results, lack of finance for the services and lack of awareness.

There is no study conducted on health seeking behaviour among Somali women especially in cervical screening services in Kenya or in Somalia. However, a study by Abdullahi et al. [15] on attitudes to cervical cancer screening among Somali women in London found lack of knowledge about the purpose of screening, language difficulties, embarrassment or fear of the test, negative past experiences and practical difficulties were all presented as barriers. There was also a lack of understanding of risk factors for cervical cancer and many of the women held fatalistic attitudes, associated with the idea of 'God's will', about this cancer and other aspects of health. Another culturally specific barrier was embarrassment associated with female circumcision (female genital mutilation).

Somali women are considered to be infrequently screened for breast or cervical cancer and there is a paucity of evidence-based interventions to increase cancer screening in this community. It has been reported that of all African immigrants in the United States, Somali refugees and immigrants were the least likely to have received a Pap smear [16]. In addition, Muslim women had a strong belief that cervical cancer screening would not prolong their lives and viewed that when the time of death comes to them no one could prevent it [17]. Over 98% of Somali women interpret cancer as God's will [18] thus they do not see the need for preventive measures of screening. Therefore, this study sought to determine the prevalence and associated factors of cervical cancer screening among Somali women in Eastleigh, Nairobi, Kenya.

Materials and Methods

Study setting

Eastleigh is a suburb of Nairobi (capital city of Kenya) with about 200,000 Somalis. It is located to the east of the central business district of Nairobi city. It is usually referred to as "Little Mogadishu" since it is largely inhabited by the Somalis whose main occupation is small and large scale businesses. Although Eastleigh was originally a large Kenyan Asian enclave until independence in 1963, in recent years, the suburb has been dominated and almost exclusively inhabited by Somali immigrants of whom the women and children are the majority. This community might be subject to the more general barriers to health service access that hamper minorities. As in many immigrant communities, the lack of regular access to a health care provider can often represent a barrier to screening [19]. The experience with health care in the country of origin may be a factor [20], as many immigrant communities may view health care as curative rather than preventive [21].

Study design

A cross-sectional study was conducted to assess the prevalence and associated factors of cervical cancer screening among Somali women at Eastleigh, Nairobi, Kenya.

Study population

The target population of the study were Somali women between 25 and 65 years of age who were willing to participate through informed consent. The choice of this range was based on the following reasons: (1) cervical cancer screening is advised to be started when a woman is 25 years of age because this is the age at which precancerous lesions can be detected [22] (2) the age of 65 years has been chosen because most women who have exceeded this age are not likely to develop cervical cancer [23]. However, the age range of participants in this study was between 25 and 45 years of age.

Sample size and sampling technique

One hundred and four (104) women aged 25-45years participated in the study. Multi-stage sampling technique was utilized. First six sections were selected using simple random sampling based on lottery method from the total of 12 sections in Eastleigh. In the second stage, a list of all households was obtained from the administration office of Eastleigh. From the list, households were selected randomly using computer based generated numbers after proportional allocation was assigned according to household numbers in each section. Subsequently, one Somali woman was selected from the selected house hold till the required sample size was achieved. In case one household had more than one candidate then further random sampling technique was used to select one participant from that household. If the household selected did not meet the inclusion criteria, the next household was taken for the study.

Data Collection Instrument

Data were collected using semi-structured questionnaire. It was pre-tested among 12 Somali women in South C, Nairobi in order to check adequacy of the questions in terms of wording, clarity and ambiguity. In addition, the exercise was done to familiarize research assistants with the data collection tools. To ensure content validity, the questionnaire was developed with the support of literature review congruently with the specific research questions and it was also reviewed by University supervisors who were expert in the area.

The questionnaire was translated to local dialects (Somali and Kiswahili) to enhance understanding during data collection and the responses were then back-translated to English. Questionnaires were administered during face-to-face interviews. Information was obtained from the women regarding socio-demographic characteristics (age, educational level, employment status, marital status, parity and contraceptive use), awareness and attitude of cervical cancer and Pap smear test. This information was collected by trained research assistants who were selected from fourth year students of BA (sociology) and were Somalian. To avoid missing out respondents the data collection was carried out during holidays and weekends.

Data Analysis

Data was entered into Statistical Package for social sciences (SPSS Version 20.0) for analysis. Descriptive analysis using frequency and proportions were computed. Chi-square test and odds ratio with corresponding 95% confidence interval were used to determine the association between cervical cancer screening and independent variables. The significant factors with p-value <0.05 at bivariate analysis were considered all together to multivariate logistic regression by specifying 'backward LR' method with removal at p<0.05. The purpose of the multivariate analysis was to assess the independent predictors of cervical cancer screening while adjusting for all the other variables significant during bivariate analysis.

Ethical Considerations

Authority to conduct the study approval was obtained from the Kenyatta National Hospital/ University of Nairobi Ethics and Research committee (KNH/UON-ERC). Administrative permission from Eastleigh was also granted. Informed written consent was obtained from all study participants. Privacy and confidentiality were maintained while handling participants' information.

Results

Socio-demographic and screening characteristics of respondents

The age of the study participants ranged from 25 to 45 years. About three fifth (59.6%) of the respondents were within 25-35 years while the age category of 36-45 years were 40.4%. More than half of the respondents were single (55.8%), unemployed (56.7%) and nulliparous (54.8%). The percentage of respondents who attended college was less than half (35.6%). Of the 104 respondents, 32.7% reported that they had Pap test in life time (Table 1).

Awareness and attitude of cervical cancer and Pap test

Table 2 presents awareness and attitude of cervical cancer and Pap test among the respondents. Out of 104 participants, 53.8% indicated that they didn't know the use of Pap smear test. However, many (69.2%) of the participants reported they would seek medication once cervical cancer manifestations are apparent. Surprisingly, most of the participants (62.5%) were not aware of their perceived susceptibility to cervical cancer. More than half (55.8%) claimed that doing pap smear test is unpleasant and embarrassing. Similarly, slightly more than half (53.8%) of the respondents indicated that the test can interfere with virginity. Fifty nine (56.7%) of the participants also indicated that they could not undergo the test due to fear of results. When asked about preference, majority (86.5%) preferred to be examined by female health providers.

Variables	n=104	%
Age in years		
25-35 years	62	59.6
36-45 years	42	40.4
Marital status		
Married	38	36.5
Single	58	55.8
Divorced	2	1.9
Widowed	6	5.8
Level of education		
Primary	23	22.1
Secondary	30	28.8
College	37	35.6
University	14	13.5
Occupation		
Employed	45	43.3
Unemployed	59	56.7
Parity		
Nulliparous	57	54.8
Multiparous	47	45.2
Ever had pap smear test		
Yes	34	32.7
No	70	67.3

Table 1: Socio-demographic and screening characteristics of respondents.

Variables	n=104	%
Awareness on use of Pap smear test		
Don't know the use	56	53.8
To detect early cervical cancer	48	46.2
Seek medication in case of cancer symptoms		
Yes	72	69.2
No	32	30.8
Perceived susceptibility of cervical cancer		
Yes	39	37.5
No	65	62.5
Pap smear test is unpleasant and embarrassing		
Yes	46	44.2
No	58	55.8
Pap smear test can interfere with virginity		
Yes	56	53.8
No	48	46.2
Fear of Pap smear test results		
Yes	59	56.7
No	45	43.3
Preference to be examined		
Female	90	86.5
Male	14	13.5

Table 2: Awareness and attitude of cervical cancer and Pap test.

Factors associated with uptake of cervical cancer screening

In the bivariate analysis, age, level of education, occupation, awareness on use of pap smear, perceived susceptibility to cervical cancer, feeling embarrassment of Pap test, Pap test perceived interference with virginity and fear of Pap test results were associated (p<0.05) with ever Pap smear test. However, upon fitting these factors using multiple logistic regression and by specifying 'backward LR' method with removal at P<0.05, three (3) factors including awareness on use of Pap smear, perceived susceptibility to cervical cancer and feeling embarrassment of Pap test remained independently associated with ever Pap smear test (Table 3).

Respondents who knew the use of Pap smear test were about 4.5 times more likely to be screened for cervical cancer (AOR=4.48; 95% CI: 1.16-17.29; p=0.03). The multiple logistic regression analyses also demonstrated that respondents who perceived themselves susceptible to cervical cancer were 18 fold more likely to do Pap smear test (AOR=18.41; 95% CI: 4.88-69.43; p<0.001). Respondents who did not feel embarrassed to do Pap smear test were 12 times (AOR=12.02; 95% CI: 2.75-52.48; p=0.001) more likely to be screened than those who reported otherwise (Table 3).

Discussion

The study provides information about prevalence and associated factors of cervical cancer screening among Somali women in Eastleigh, Nairobi, Kenya. Though the biggest percentage of respondents attended college and secondary school, majority did not know the use of Pap smear test and were not aware of perceived susceptibility to cervical cancer. It is reported that lack of knowledge about cancer and cancer screening processes is frequently cited among Somali American as a barrier to screening [18,24], as well as low cancer risk perception [15,25]. However, majority of the women in this study reported they would seek medication if they have signs and symptoms of cervical cancer.

Consistent with other studies, factors including embarrassment or

Variables	Ever been tested		COR† (95%CI §)	AOR‡ (95%CI §)	P value*
	Yes, n (%)	No, n (%)			
Age in years					
25-35 years	12 (19.4%)	50 (80.6%)	Reference	Reference	
36-45 years	22 (52.4%)	20 (47.6%)	4.58 (1.91-10.98)	2.83 (0.76-10.46)	0.12
Marital status					
Married	16 (42.1%)	22 (57.9%)	2.18 (0.39-12.25)		
Single	16 (27.6%)	42 (72.4%)	1.14 (0.21-6.26)	-	-
Divorced/widowed	2 (25.0%)	6 (75.0%)	Reference		
Level of education					
Primary	3 (13.0%)	20 (87.0%)	Reference	Reference	
Secondary	6 (20.0%)	24 (80.0%)	1.67 (0.37-7.53)	5.43 (066-45.01)	0.117
College/University	25 (49.0%)	26 (51.0%)	6.41 (1.69-24.28)	2.66 (0.34-20.57)	0.349
Occupation					
Employed	25 (55.6%)	20 (44.4%)	6.94 (2.76-17.45)	3.57 (0.77-16.66)	0.105
Unemployed	9 (15.3%)	50 (84.7%)	Reference	Reference	
Parity					
Nulliparous	16 (28.1%)	41 (71.9%)	Reference		
Multiparous	18(38.3%)	29 (61.75)	1.59 (0.70-3.63)	-	-
Awareness on use of pap smear					
don't know the use	8 (14.3%)	48 (85.7%)	Reference	Reference	
To detect early CA	26 (54.2%)	22 (45.8%)	7.09 (2.77-18.14)	4.48 (1.16-17.29)	0.03
Seek medication in case of cancer symptoms					
Yes	24 (33.3%)	48 (66.7%)	1.1 (0.45-2.69)	-	-
No	10 (31.2%)	22 (68.8%)	Reference		
Perceived susceptibility to cervical cancer					
Yes	27 (69.2%)	12 (30.8%)	18.64 (6.60-52.64)	18.41 (4.88-69.43)	<0.001
No	7 (10.8%)	58 (89.2%)	Reference	Reference	
Fear of Pap test results					
Yes	13 (22.0%)	46 (78.0%)	Reference	Reference	
No	21 (46.7%)	24 (53.3%)	3.10 (1.32-7.24)	1.54 (0.32-7.46)	0.587
Pap smear test can interfere with virginity					
Yes	16 (28.6%)	40 (71.4%)	Reference		
No	18 (37.5%)	30 (62.5%)	0.67 (0.29-1.51)	-	-
Pap smear test is unpleasant and embarrassing					
Yes	8 (17.4%)	38 (82.6%)	Reference	Reference	
No	26 (44.8%)	32 (55.2%)	3.86 (1.54-9.70)	12.02 (2.75-52.48)	0.001
Preference to be examined					
Female	30 (33.3%)	60 (66.7%)	1.25 (0.36-4.32)	-	-
Male	4 (28.6%)	10 (71.4%)	Reference		

* Significance at p<0.05 bolded; †Crude odds ratio; ‡Adjusted odds ratio; §95% Confidence Interval

Table 3: Factors associated with uptake of Pap smear test.

fear of the test, fear of results, preference of examination and other beliefs [14,15,26] were described as the major cancer for cervical screening services. Majority of the respondents preferred to be examined by female health providers which are expected among Muslim women but this was not significant to screening. Studies have shown that American Muslims commonly request a physician of the same gender [27] and put high value on having a provider of the same gender because of Islamic beliefs [28]. Women preferred female health workers as they felt they will be more relaxed being seen by a female than a male and for some their culture did not allow being seen by a male other than their husband.

In this study, women who had undergone cervical cancer screening was low (32.7%) compared to the national target of 75% by the year 2009 [29]. This was however a higher rate compared to another study done in Kenya [14] and South Africa [30] whose findings showed that 12.3% and 19% of women have had a Pap smear test respectively. It was also much higher from a study done in Ethiopia which reported that only 6.5% of all the respondents ever had a Pap smear screening test [31]. The high prevalence in this study could be attributed to health promotion program to popularize cervical screening among the different communities. Studies in Kenya have so far looked at awareness and prevention of cervical cancer and the knowledge and attitudes of women [32,33]. Consequently, there have been scaled-up campaigns to create awareness and promote uptake of screening services toward prevention of cervical cancer.

Multiple logistic regression analysis revealed that women who had awareness on the use of Pap smear were independently associated with ever Pap smear screening. A similar result was documented among civil servants in Nigeria [34], which reported there was a significant association between awareness about the test and its utilization (p=0.01).

A study in Botswana [35] also revealed that inadequate knowledge of cancer screening is a barrier to its utilization. Women with low levels of knowledge about cervical cancer and its prevention are unlikely to access screening services [36-38]. This suggests that more information about the benefits of Pap tests should be disseminated among women. Additionally, cervical cancer screening should be integrated into primary health care services in order to increase awareness on the use of Pap smear test.

The correct perception of individual or own risk of development of cervical cancer is an important potential cue to action on the road to cervical cancer screening. The multiple logistic regression analyses in this study demonstrated that respondents who perceived themselves susceptible to cervical cancer were 18 fold more likely to do Pap smear test. A woman may not request for screening, if there is lack of awareness of susceptibility to cervical cancer. Perception of not being at risk is documented to be associated with low uptake of screening [39]. Similarly, attitudes regarding personal susceptibility to cervical cancer were also found to be associated with screening uptake in other studies [40-42]. This demonstrates the importance of educating women about their risk for cervical cancer in order to increase their awareness. It is also crucial to explain clearly the difference between precancerous lesions and invasive cervical cancer and the treatment options available for each of these clinical entities [43].

The study also indicated that respondents who did not feel embarrassed to do Pap smear test were 12 times more likely to be screened than those who reported otherwise. This has been supported in a study carried out in Sudan which reported that women who thought the test was embarrassing were less likely to obtain screening [38]. Likewise, studies in United States and Latin American countries found that feelings of embarrassment or shame had significant influence on the screening decisions of women [44-47]. Also, in Somalia women developed a negative outlook on screening due to embarrassment associated with female genital mutilation [15]. This could affect their decision to undergo Pap tests in the future [48].

Even though the age, level of education, occupational status and fear of Pap test result were significantly associated with ever Pap smear screening at bivariate analysis they were not significant at multivariate analysis. In regards to education level, several studies have found that women with high screening rates have a high level of education [36,49]. However, women with high education may not necessarily seek screening [37]; thus, it was recommended that additional factors must be considered. Rates of screening are substantially lower in younger women aged 20-29 years and elderly women aged 60 years and above [36,50].

Limitations

The study was conducted using cross sectional study in the one community dominated by Somali population, which may not be generalizable to other areas or represent the whole nation. Another important limitation is the use of self-report which may be affected by the tendency of interviewees to give socially desirable responses. However, our findings have important implications for the main areas of focus to be addressed in order to increase Pap smear test despite the limitations.

Conclusion and Recommendation

From the findings of this study, the authors conclude that even though the women in the study were willing to seek medical assistance if experienced signs of cervical cancer, their lack of awareness about Pap smear test and lack of perceived susceptibility to cervical cancer were major hindrance to screening. These probably contributed to a low prevalence cervical screening of 32.7% compared to the national target of 75% by the year 2009. The authors recommend that specific awareness and perception target programs should be conducted to scale up cervical cancer screening in this community. We also recommend targeted studies among other communities to compare the prevalence and factors associated with screening independently from the Somali community. In this way, community specific barriers to cervical screening could be identified for appropriate interventions to scale up cervical screening.

Competing Interests

The authors declare that they have no competing interests.

Authorship Contribution

IKA contributed in the design of the study, acquisition of data and in drafting manuscript. WCA conceptualized the idea for the study, participated in its design, analysis and coordination; and involved in revising manuscript critically for important intellectual content. MHF involved in analysis and interpretation of data and helped to draft the manuscript. Each author has given final approval of the version to be published.

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