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Assessment of uptake of cervical cancer screening services among women of reproductive age in Khwisero sub-county, Kakamega County, Kenya

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ABSTRACT

Background: Cervical cancer stands to be amongst the major contributors to cancer demises and morbidity in the world. It is also ranked fourth among the most frequent types of cancer among women. The objective was assessing uptake of services for cervical cancer screening amongst women in the reproductive age in Khwisero Sub County, Kakamega County, Kenya.

Methods: Cross sectional descriptive study of 393 females from the age of eighteen to forty nine who were purposively sampled from was conducted. A questionnaire was administered by the interviewer. The data was collected, cleaned and entered in the analysis software (SPSS version 17). The Pearson Chi-square was used to conduct bivariate analysis in order to define the relationships between the variables having a level of significance at p<0.05. The presentation of the captured results was then done in pie-charts, graphs, charts and tables.

Results: Of the 393 interviewed 16.8% had a cervical cancer screening done either through pap smear, VIA and VILI within the past year. Significant influencers of screening uptake were marriage, age, parity, and health providers' support.

Conclusions: There was a low level of awareness and knowledge on cervical cancer which resulted in low uptake levels of screening services which also influenced by other factors like age and marital status.

Keywords: Awareness level, Cervical cancer screening, Reproductive age, Uptake

INTRODUCTION

Cervical cancer is a chief public health concern around the world especially due to the fact that it causes high mortality among women around the world. There were a total of 570,000 new cases of cervical cancer recorded in 2018 alone. Centre for Disease Control and Prevention also found out that in 2014, 12,578 individuals were diagnosed and there were 4,115 deaths which translate to a rate of 2.3 per 100,000. An estimated 13,400 cases of cancer of the cervix and 5405 fatalities happened in the US in the year 2017. There has been a dramatic decrease

in cancer of the cervix fatalities in the US, and this has been attributed to the widespread screening of cancer of the cervix. The majority of the cases happen in females who did not have appropriate screening. Strategies which focus on ensuring that all females go for screening at proper intervals and get to be followed up have a high probability of being effective in reduction of incidences and deaths linked to cancer of the cervix in US.³

In Britain, screening of cancer of the cervix begun in mid-1960s. Even though the majority of females had regular smear tests, the concern was that the women who were

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highly susceptible never underwent testing and the ones whose results appeared positive did not get a follow-up and treatment on the same. As a result of these cases, National Health Service (NHS) Cervical Screening Programme was established in 1988 where the Department of Health gave instructions to all the health authorities to establish computerized call-recall systems and meeting particular quality standards. The programme has attracted around 4.5 million females to undergo screening in 2010/11 and 3.4 million females underwent screening in the years 2010/11 in England.⁴ Invitation by the woman is done by the NHS call and recall system that invites females registered with general practitioners (GP). It as well tracks any investigation of a follow-up, and calls that woman to undergo screening again in 3-5 years in case of no abnormalities. In the NHS Cervical Screening Programme females are supposed to get their 1st invitation for regular screening at 25 years being its national policy. This reduced cost of health care for NHS in the UK considering tight government budgets.⁵

The impact of this disease is also rapidly rising in sub-Saharan Africa. However, there is paucity of precise statistics of cervical cancer in many African nations. They are short of proper records as far as cervical cancer is concerned. Figures quoted by many hospitals are not representative in reality as they only quote statistics encompassing only a small number of women who are ailing from the disease. Only a small number of African countries have cancer registries that are functional and the extent of record keeping is either low or non-existent. Most literature quote hospital-based figures that only depict a small portion of women who are currently ailing from cervical cancer largely resulting from inaccessibility of services hence at home.⁶

In Nigeria, the national case of cancer of the cervix is 250 out of 100,000.⁷ Cancer of the cervix was the major causative to gynecological cancers in Northern Nigeria, responsible for 65.7 percent of the gynecological cancers.⁸ The high cases were as well revealed by Maiduguri and Ibadan (Nigeria) with 72.6 percent and 62.7 percent respectively.⁹ While awareness of cervical cancer remains low in Nigeria and mortality figures are among the highest in the world, there are many signs that positive changes are afoot. Several successful pilot schemes, funded by Non-Government Organizations (NGOs) and private enterprises are currently underway in treatment in addition to preventive support.¹⁰

Cervical cancer ranks the second major cancer kind in South Africa's women. About one out of 41 females are likely to develop this type of cancer in their life. South African Medical Research Council designated that it was accountable for 3498 deaths of South African women in the year 2000.¹¹ Correct statistics concerning the number of women in South Africa who were diagnosed and dying from cancer of the cervix per year were not known as a result of failing to maintain the pathology-based cancer registry.¹² In 1999 a National Cancer Control Program

that consists of a national programme was adopted. The programme focuses on women with 30 years and allows asymptomatic females to go through three pap smears at nurse-led primary healthcare (PHC) clinics in the course of their life.¹³

Developed nations also quote low rates of cervical cancer where operational screening programme are in place. The rates rarely exceed 5 affected women per 100,000 women. On the other hand, the endurance rate for women suffering from this disease in sub-Saharan Africa is really low, standing at 21% compared with high survival rates in the United States (70%) and Western Europe (60%).¹⁴

The population of childbearing women or women in the reproductive age in Kenya lies at 10.32 million. The age group of women considered to be of importance to the level of risk of cervical cancer is 18-49 years. Age is amongst major origins of demise amid women of reproductive age. There is immense difficulty in capturing the impact caused by cervical cancer in Kenya as most data is mainly from Nairobi. However, cervical cancer is noted to affect 25 women in every 100,000. The country should move with speed to develop and implement mitigation measures aimed at curbing the new cases and enhance the life quality of all women susceptible to it as estimated.

The human papilloma virus has been found to be the primary causative agent. Genital-type, however, is most frequent in this case and it is distinguished in 3 forms which include high, intermediate and low-risk forms. The high-risk forms of HPV (-16, -18, -31, -45) are the main causes of cervical cancer accounting for 90% of all cases. However, in Kenya, HPV-16 is the main cause of cervical malignancies accounting for 41% of all cases.

Presently, the approximated number of cases of cancer of the cervix in Kenya is 2,454 resulting in 1,676 deaths per year. A projection is made that by 2025, the volume of cases of cancer of the cervix in Kenya per year is going to be 4261. Data from Kenyan hospital-based showed that cervical cancer was 70 to 80 percent of all the genital tract and 8 to 20 percent of all cancer incidences for the 10 years from 1981-1990. It was presented that 10-15 new incidences of cancer of the cervix were presented in Nairobi on a weekly basis. Regardless of the problems facing Kenya and being that it can be prevented easily, the coverage of screening in Kenya for women from the age of Eighteen to Sixty-nine is just 3.2 percent.

Methods of screening for cancer of the cervix adopted/used in Kenya, that were part of the strategic plan of the Health Ministry National Cervical Cancer Prevention Strategic Plan from the year 2002 to the year 2006, consist of visual inspection with Lugol iodine, visual inspection and Papanicolaou (Pap) test. Nevertheless, uptake of the methods is still haphazard and quite low. To reach these other women as well, the government of Kenya has integrated screening of cervical

cancer into regular services that most females can access. These regular services mostly are provided at the MCH clinics. Even though around 300 sites offer services for screening, just around thirty 30 (10%) conduct services of outpatient treatment.¹⁹

Available statistics show that there are around 2,454 reported fresh incidences of cervical cancer annually in Kenya whilst 1,676 of these individuals who die from the disease.²⁰ This disease is easy to prevent before it starts through appropriate vaccination with the HPV vaccine. Regular screening is also significant in the identification of cell abnormality in the cervix. However, the number of women who are screened remains low in developing nations and is recorded at 3.2% of women of the childbearing age as compared to around 70% of women of the same age group in the developed world.²¹

More than 80% of rural women in Khwisero Sub County have not had the opportunity to benefit from cervical screening and there are little awareness extents regarding the correlates of cervical cancer and screening for and prevention of the disease (Sub County Health Information system report -SHIS). Since 2011 when cervical cancer screening was introduced in the Khwisero sub-county that has a population of 40,000 women of reproductive age, only 6176 (15.4%) women had reported for screening by the end of the year 2016.²¹ Low coverage of screening prevents early detection of cancer as such most women who suffer from the disease present with advanced disease condition which is complicated and expensive to treat.

Objectives

The study sought to assess the uptake of screening services for cervical cancer amongst women of reproductive age in Khwisero sub-county, Kakamega County.

METHODS

Study population

The exploration targeted women aged 18-49 years who were residing in Khwisero sub-County were the target population. The study mainly captured women who had been in the area for more than 6 months before the study. They were selected through purposive sampling due to their characteristics that fit the aim of the study. Stratified sampling was utilized to pick households. An equivalent amount of households were randomly selected in selected sub-location within Khwisero sub-county.

Study design

A descriptive cross-sectional design was implemented in the study as is what only to be conducted over a specified time

Sample size

The size of the sample was determined using the Cochran formula, 2001.²²

$$N = \frac{1.96^2 \times 0.5(1 - 0.5)}{0.05^2}$$

n = 384

Therefore, N≈ 384

The screening of cervical cancer uptake amongst females of reproductive age in Khwisero County is unknown and therefore 50% was assumed. To be able to estimate the true cervical cancer screening uptake with 95% confidence to within 5% points, a minimum sample of 384 participants was required.

Sampling procedures

Purposive sampling was used in the selection of Khwisero sub-County as it is among the sub-counties in Kakamega County. Screening services in the county have been available for at least four years and among the seven locations in the sub-county, four were selected through simple random sampling through the ballot system. Respondents were proportionately selected among the four locations and three villages among the location were selected through the ballot system. Khwisero has 247 villages, 12 were selected from the 4 locations. Since 384 participants were required for the study translating to 32 participants per village, this selection was done purposively targeting women of reproductive age one per household. The interview ensured age groups are systematically covered i.e. if in the 1st household a woman interviewed was between 11-20 years old; participants for the next household should be within 21-30 years category.

Research instruments

Closed ended structure questionnaires were mainly used for the interviews and they were administered and managed by the interviewer. The questions mainly focused on the respondent's awareness on risk factors, attitude and barriers of screening and practices associated with screening. The questionnaire was also pretested to enhance validity and reliability.

Pilot test

Pilot testing was used in order to determine the level of content validity which was characterized by data collection among a few respondents in order to acquire feedback on the effectiveness of the research instrument. Questions that were ambiguous or gave respondents difficulty in understanding were later on corrected.

Reliability was achieved through assessment of the use of the test-retest approach to determine the level of internal consistency. This test-retest approach depicts the score variations in order to capture the errors linked to the measurement. This helped in standardizing the instrument and the time between the tests was shortened in order to create a high-reliability co-efficient.

Data collection

Research assistants with experience in the local language were used as the questionnaire was in English. The questionnaires were administered among respondents in their households through the selection of one individual per household. The respondent's knowledge on the importance of screening, access to screening services, motivation to seeking screening services and whether they had received screening services. The study was conducted from June 2016 to July 2017.

Ethical considerations

Permission to carry out this research was sort from the National Commission for Science, Technology and Innovation (NACOSTI) through the School of Post Graduate Studies of MKU. Authority was then acquired from the County Director of Health and the Sub-county Medical Officer of health to allow data collection. All eligible participants were required to give consent for participating in the research and were aware of their rights to withdraw from the study anytime they wish to.

Data analysis

All the questionnaires were cleaned before being entered in the analysis software which was Statistical Package for Social Sciences (SPSS Version 17.0). All descriptive statistics were captured through simple frequencies to assess the socio-demographic features of women, the level of knowledge on the factors associated with respondents and the level of uptake of services for cervical cancer screening. Bivariate analysis was also carried out in order to determine the relationships between the variables in the study. This was achieved through the Pearson Chi-square with the significance level at p<0.05. The results were then presented in form of tables, graphs and pie charts as appropriate.

RESULTS

A total of 400 questionnaires were handed out and 393 were returned completed. This translates into an overall response rate of 98.25% and surpasses the desired sample size of 384. The non-respondents were those who did not give consent to participate in the study and those who gave their consent but left during the interviews.

The majority of the respondents were of the 21-30 years (32.6%) and the least was in the cohort of 18-20 years (17.20%). The majority of the participants were mainly

married (61.10%) as these individuals enjoy support from their families and spouses. This was followed by single individuals (28.60%) and the least being the divorced (1.30%).

Among the respondents (59.60%) had a certificate level of education, 30.20% had a diploma, 9.50% had a bachelor's degree while 0.80% had or were enrolled in a master's degree program. A big number of respondents were housewives (27.40%) while a significant number were self-employed (20.60%) and students (20.10%). Other respondents were civil servants (13.20%), professionals (11.60%) and traders (7.10%). The most common religion among the respondents was Christianity (96.40%) while the rest were Muslims (3.60%).

Table 1: Socioeconomic indicators.

Indicator	Category	N	%		
Type of house	Rented	100	25.8		
lived in	Owner of house	288	74.2		
Type of wall	Mud wall	200	55.2		
of the house	Wooden/iron sheet wall	29	8.0		
lived in	Stone house wall	133	36.7		
Roofing on house	Natural roofing (thatch, makuti)	20	5.1		
	Iron sheets	360	92.1		
	Tiles	11	2.8		
Main material on the floor	Natural (earth, dung)	163	47.9		
	Wooden planks/Bamboo	16	4.7		
	Finished floor (tiles, polished wood)	161	47.4		
	Electricity	14	3.8		
The main	LPG/Natural gas	39	10.6		
fuel used for	Biogas	6	1.6		
cooking	Charcoal	93	25.2		
	Firewood				

Table 2: Reasons for not being screened for cervical cancer.

Reason	N	%
It may be painful	93	29.3
Feeling shy	73	23.0
Feeling healthy	15	4.7
The husband would not agree	4	1.3
Afraid screening test would reveal cervical cancer	23	7.3
It is expensive	29	9.1
Not informed/aware	51	16.1
Culture does not allow	4	1.3
Not decided	106	33.4
Busy	8	2.5
Fear of male doctors and nurses	11	3.5
Cannot be attended to by male doctors or nurses	1	0.3

Nearly three-quarters of the respondents lived in houses they owned (n=288, 74.2%) which had mud walls

(n=200, 55.2%) with a significant number having stonewalled houses (n=133, 36.7%). The houses had iron sheet roofs (n=360, 92.1%) while the floors were either made up of natural components (n=163, 47.9%) or finished floors (tiles, polished wood) (n=161, 47.4%). Additionally, nearly three-fifths of the respondents' main source of energy for cooking was firewood (n=217, 58.8%) (Table 1).

In terms of uptake, less than one-fifth (16.8%) of respondents indicated that they had ever been screened

for cervical cancer. Only 68.5% had only been screened once since they became sexually active, and the rest (31.5%) had been screened more than once since becoming sexually active. Additionally, among those who had ever been screened, 61.2% reported that the screening had been done in the last 3 years while the remainder (38.8%) reported being screened more than 3 years ago. Those who reported that they had never been screened gave various reasons why they had not been screened (Table 2).

Table 3: Factors associated with uptake of cervical cancer screening.

Characteristics		Uptake				GI.			
	Category	Yes No			Chi-squ	Chi-square test			
	,g,	N	%	N	%	χ^2	df	P value	
Age in years	10-20	5	8.1	60	19.0			0.002*	
	21-30	21	33.9	102	32.3		4		
	31-40	15	24.2	107	33.9	16.4			
	41-50	17	27.4	34	10.8				
	50+	4	6.5	13	4.1				
Marital status	Single	11	17.5	100	31.6		4	0.022*	
	Married	44	69.8	185	58.5				
	Separated	1	1.6	13	4.1	11.497			
	Widowed	7	11.1	13	4.1				
	Divorced	0	0.0	5	1.6				
Education	Certificate	33	54.1	180	61.0		3	0.676	
	Diploma	20	32.8	87	29.5	1.500			
	Degree	7	11.5	26	8.8	1.528			
	Masters	1	1.6	2	0.7				
	Student	6	9.8	69	22.5		5	0.260	
	Civil servant	10	16.4	36	11.7				
Occupation	House-wife	20	32.8	82	26.7	6.501			
	Professional	7	11.5	35	11.4	6.501			
	Trading	3	4.9	23	7.5				
	Self-employed	15	24.6	62	20.2				
D. W	Christian	58	92.1	303	97.1	2.722	1	0.054	
Religion	Muslim	5	7.9	9	2.9	3.722			
T. 61	Rented	16	25.0	81	25.9	0.021	1	0.884	
Type of house	Owner of house	48	75.0	232	74.1	0.021			
Type of wall of the house lived in	Mud wall	33	53.2	160	55.6		2	0.724	
	Wooden/iron sheet wall	4	6.5	25	8.7	0.646			
iiveu iii	Stone	25	40.3	103	35.8				
	Natural roofing	1	1.6	19	6.0		2	0.237	
Roofing on house	Iron sheets	59	93.7	289	91.5	2.877			
	Tiles	3	4.8	8	2.5				
	Natural(dung)	25	52.1	133	47.0		2	0.057	
Main material on the floor	Wooden	5	10.4	10	3.5	5.745			
	Finished floor	18	37.5	140	49.5				
Cooking fuel	Electricity	2	3.3	12	4.0		4	0.160	
	LPG/Natural gas	10	16.4	29	9.7				
	Biogas	2	3.3	4	1.3	6.578			
	Charcoal	9	14.8	81	27.2				
	Firewood	38	62.3	172	57.7	<u> </u>			
Awareness of cervical	Yes	63	98.4	272	87.5	6.713	1	0.010*	
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Pearson's Chi-square was used to assess the factors linked to uptake of cervical cancer screening among women of reproductive age in Khwisero Sub County (Table 3).

The results of the chi-square analysis show that 3 factors were statistically significantly linked to uptake of the services for screening of cervical cancer. This was age $[\chi^2(4)=16.4, p=0.002]$, respondents aged between 21 and 50 years had a high probability of undergoing screening as matched to those aged less than 20 years or more than 50 years; Marital status $[\chi^2(4)=11.497, p=0.022]$, married respondents were more likely to have been screened than single ones and awareness of cervical cancer $[\chi^2(1)=6.713, p=0.010]$, where those who were aware of the disease had a high probability of being screened as compared to those who were not aware.

DISCUSSION

A study by Marlow et al depicted little levels of awareness concerning cervical cancer and the ongoing cervical cancer screening programs in that region.²³ The community was mainly dependent on health workers for health information and the study noted a need to improve the level of knowledge and awareness on cervical cancer.

While a majority of the respondents reported vaginal foul smell as being a symptom of cervical cancer a significant number were still unaware of the symptoms of cancer. Having multiple partners was noted as being a risk factor to acquiring HPV and the growth of cervical cancer. Ebu et al revealed that a number of women are unaware of the symptoms and correlates of cervical cancer which also influences their uptake of services for screening and prevents early detection.²⁴

Additionally, despite some (42%) noting that avoiding multiple partners can be significant in the prevention of cervical cancer, a significant number (39%) were still unaware of the interventions that can be used in the prevention. Knowledge and awareness were also captured in relation to those who were unaware that cancer can be prevented in its early stages, the cost of screening and the treatment options. In a study conducted in Kolkata among 97 individuals, only one individual had been screened, as a majority were unaware of the causes, correlates and how to prevent oneself from getting the disease.²⁵

The respondent also reported little to no knowledge concerning cervical cancer screening despite them being aware of the screening programs. They, however, noted that with favourability in the price of screening, then the uptake of the services would increase. Limited knowledge impedes the benefits linked to cervical cancer screening and health education initiatives are increasingly required to help get to women who are at risk.²⁶

Uptake of cervical screening was low (16.8%) with the majority having been screened once while only a few individuals had been screened more than once since they became sexually active. It is, however, critical to note that among the women who had been screened, a majority of them were screened over 3 years ago. In a bid to decrease the incidence and prevalence of cervical cancer, a study conducted in Jamaica recommended the need for support and encouragement for individuals at risk to seek screening services.²⁷

Wong et al also noted that improving the uptake cervical cancer screening is linked to an increase in promotional publicity and increase the educational programs which are directed towards increasing the awareness of the women.²⁸

Additionally, women also noted various reasons that hindered their access to cervical cancer screening services. The respondents reported reasons like the screening exercise would be painful, they are shy to seek such services especially when the health attendant is of a male. Others noted that they were healthy, they had unsupportive husbands, they were afraid of discovering that they had cancer, the screening tests were expensive and even culture influencing their uptake of the screening tests. A majority of the women were however undecided on the need to seek the screening tests.

Marlow et al also noted that the ethnic minority women were least likely to seek cancer screening services simply because it was something that they would consider doing.²⁹ Additionally, other emotional barriers were noted to influence the uptake of the screening services e.g. embarrassment, fear and low perceived risk among the women. However, Jacobs et al notes that perceived discrimination is the major contributor to reduced uptake for services of screening.³⁰

Similarly, individuals who had awareness on cervical cancer had a high probability to have been screened than those who weren't aware of. According to Ebu et al lack of awareness is a major impediment to the utilization of cervical cancer screening programs. More educative material is required to help increase the level of awareness among women and to decrease the risk of cervical cancer.

Based on the outcomes, three factors were linked to the uptake of services for cervical cancer screening amongst women in Khwisero Sub-County. These factors include age (p=0.002), marital status (p=0.022) and awareness of cervical cancer (p=0.010). In relation to age, respondents aged between 21 and 50 years were more likely to have been screened contrary to those aged less than 20 years or more than 50 years. This was largely due to the fact that women in this cohort had access to more knowledge, were more educated and the need for self-care is higher.

Cervical cancer screening is higher among educated women who took up more interventions like utilizing insurance to help finance the screening tests as observed by Sabatino et al.²⁰

Additionally, married respondents were more likely to have been screened than single ones. This was largely because married respondents get support from their family which was critical in the acquisition of screening services contrary to single individuals who may be reluctant to seek these services due to lack of support. Hanske reveals that an individual's marital status is a critical indicator of health-seeking behaviour and there is a need to ensure that providers are aware of such instances in order to offer proactive counsel to individuals who are not married.³¹ Another study conducted among female teachers in Tanzania noted that uptake of cervical cancer screening was higher among individuals with partners or spouses who give them support during such instances.³²

This study was limited to female of reproductive age (18-49 years) coming from the rural areas and have lived in Khwisero sub-county within the past 6 months.

CONCLUSION

The findings of the research gave insight concerning suboptimal uptake of services for cervical cancer screening which may be addressed by multipronged mechanisms. The study showed the level of awareness is still low despite screening practices being conducted in the area. The research indicates that a big number of females had at least acquired a certificate (59.6%) and they are unaware of the symptoms and risk factors of cervical cancer. Similarly, women in the area had low awareness and knowledge on cervical cancer which resulted to low uptake levels of screening services. This was also influenced by other factors like age and the marital status of the women. Health promotion interventions are required to revamp and improve the screening services and to improve the uptake.

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