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**SOCIO-DEMOGRAPHIC, SOCIAL ECONOMIC AND SOCIO- CULTURAL FACTORS
THAT INFLUENCES UPTAKE OF CERVICAL CANCER SCREENING SERVICES IN
LOW RESOURCE SETTINGS**

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Abstract

Background: Cervical cancer is the fourth commonest cancer in women and the seventh overall, with estimated 528,000 new cases every year. Around 85% of the global burden occurs in the low resource settings where it accounts for almost 12% of all female cancers. In these areas programmes for screening and treatment are deficient or underutilized. This is even after the services are availed or assumed to be provided.

Objectives: To establish socio-demographic, social economic and socio- cultural factors that influences uptake of cervical cancer screening services in Kitui Central Sub County, Kenya.

Methodology: A descriptive cross-sectional study design was done; where women of reproductive age attending MCH/FP clinic in public health facilities were systematically randomly selected and exit interview was the main data collection technique. Key informants were also interviewed.

Results: A total of 370 women of reproductive age were interviewed. Majority,(69.2%) were aged below 29 years, more than 80% had completed their primary school education,68% were married,57% were protestants,75 % were having three children or less,61% were depending on farm produce and more than 60% were earning less Ksh 5000 per month..There was statistical significant association between utilization of VIA/VILI cervical cancer screening services and the level of education($\chi^2=21.728,df=3,p= 0.000$),main source of income.($\chi^2= 15.030,df=2,p=0.01$),average monthly income, ($\chi^2=27.942, df=4, p=0.0001$), main decision maker in the family, ($\chi^2=6.908, df=2, p=0.032$). Public Health facilities were not well staffed and equipped to adequately offer the VIA/VILI screening services effectively.

Conclusion: The level of awareness on cervical cancer prevention was low and this among other factors lead to low VIA/VILI screening tests utilization. We recommend strategies to be put into place to increase awareness on available methods of screening and importance of being screened for cervical cancer among eligible women.

Key words: VIA/VILI, Screening, women of reproductive age, MCH/FP, Low resource settings.

Introduction

Cervical cancer is the fourth commonest cancer in women and the seventh overall, with estimated 528,000 new cases every year [1]. Around 85% of the global burden occurs in the developing regions where it accounts for almost 12% of all female cancers [2]. Cervical cancer remains the most common cancer in women in Eastern Africa and Central Africa. There was an estimated 266,000 deaths from cervical cancer worldwide in 2012, accounting for 7.5% of all female cancer deaths. The mortality is high where the programmes for screening and treatment are deficient or underutilized [3]. Cervical cancer affects the younger age group (less than 25 years) as a result of early sexual activity, multiple sexual partners and history of sexually transmitted diseases mainly linked with [4]. In Kenya and most other developing countries, (Tanzania having the highest mortality rates in East and central Africa). Cervical cancer is killing more women than any other cancer. This is a huge burden to the women, their families, their communities, and their health care systems especially in poor, rural areas [5]. Data from hospital based registries in Kenya indicated that cervical cancer accounted for 70-80% of all cancers of the genital tract and 8-20% for all the cancer cases [6]. Several screening tests are currently available for detecting pre-invasive cervical lesions. The most commonly used method is cytology based, which detects cellular changes by directly examining a sample of desquamated cells taken from the cervix; this method includes conventional Pap smear, and liquid-based cytology. Another more recent, option is to screen for the presence Human Papilloma Virus (HPV) sero types associated with cervical cancer in a sample of cells taken from the cervix or the vagina. A third approach is to search visually for a macroscopic lesion on the cervix; VIA, VIAM, cervicography, speculoscopy and VILI are included in this category. Pap smear remains the recommended test because of its high specificity but its limitations are applicability in low resource settings.

Cervical cancer accounts for almost 12% of all female cancers worldwide. High-risk regions, with estimated age standardized rates over 30 per 100,000 women, include Eastern Africa (42.7), Melanesia (33.3), Southern (31.5) and Central Africa (30.6). Rates are lowest in Australia/New Zealand (5.5) and Western Asia (4.4). Cervical cancer remains the most common cancer in women in Eastern and Middle Africa [1]. New estimates of worldwide and regional cancer incidence and mortality published by the World Health Organization in the GLOBOCAN 2012 report confirm the prediction that the numbers for cervical cancer would continue to rise, especially in developing countries. The estimated annual incidence in the less-developed countries of the world is now more than 450,000 and the mortality more than 250,000. It is predicted that by the year 2030, 98% of cervical cancer deaths will be in developing countries [1].

In Kenya, women at risk for cervical cancer (Female population aged ≥ 15 yrs) are 10.32 million while annual number of cervical cancer cases is 4,802 women. Annual number of cervical cancer deaths is 2,451 women while without intervention projected number of new cervical cancer cases in 2025 is 7,933 women. Projected number of cervical cancer deaths in year 2025 is 4,063 women. Crude incidence rates per 100,000 populations per year for cervical cancer is 12.7% [4]. Data from Kitui Sub County Hospital gynecological ward shows that there are at least two cases of confirmed cervical cancer lesions every month in women between the ages of 20 to 50 years. In developing countries, less than 10% of women are screened for

cervical cancer annually. In most cases the services for screening and treatment are deficient and areas where they are availed they are grossly underutilized [4]. In Kenya like any other developing country, majority of women present with advanced/invasive disease [7].

The visual inspection methods for cervical cancer screening were inception in 2005 and services were offered from 2007 in selected districts in Kenya [7]. Kitui Central Sub County started offering the services in 2009. Up to now (2013) the coverage is less than 15% among eligible clients against the national target of 70% [6]. National cancers of the cervix prevention program in which visual inspection tests are being implemented have not been reviewed and there is limited official documentation on the program processes since its inception in 2005. In Kitui Central Sub county progress of the programme has never been reviewed nor evaluated.

Materials and methods

A cross-sectional, descriptive analytical study design was used. Independent variables were client's level of awareness regarding screening services, social demographic, social economic and social cultural factors, and health facility factors. Dependent variable was the utilization of the screening tests. The public health facilities included one Sub County Hospital six Health centres and nineteen dispensaries. The Sub County Hospital was within the urban area of the Sub county while all the Health centres and dispensaries were within rural setting of the Sub County. Random sampling of women of reproductive age attending the selected public health facilities was done and exit interview was conducted. Structured researcher administered questionnaire was used to get in depth information regarding the clients' social characteristics. The key informants who were the Sub county facilities incharges provided primary as well as secondary data. Ethical approval was obtained from Kenyatta University Ethics Review Committee while authorization was got from the National Council for Science Technology and Innovation. (NACOSTI), sub county medical officer of health was involved and signed consent was sought from respondents after successful explanation of the purpose of the study.

Data collected was coded, entered and analyzed using Statistical software; SPSS Version 20. Social demographic and economic characteristics were presented with tables and bar graphs. Cross tabulation was done and associations were established by Chi-square (χ^2). Inferential statistics (p-value, confidence intervals, χ^2) was used to establish factors that predicted VIA/VILI services uptake. Statistical significance level was fixed at $p < 0.05$. Logistic regression analysis was done to further test variables that were statistically significant.

Results

Women within the age bracket of between 20-29 years were the majority 55.1%, 55.7 % had completed their primary education, 30.5 % had completed secondary level education while 7.6% had completed their college education. Majority 68.1% were married, 75.9% had 3 children or less while 57% were Protestants.

The study findings showed that majority of the women 61.4% depended on farm produce, 51.9% depended on their partner as the income earner while 60.8% were earning Ksh 5,000 or less per month.

The social demographic and economic variables that had a significant statistical association with utilization of VIA/VILI screening tests included level of schooling, main source of income and average monthly income as shown by Table1

Table 1: Association of respondents characteristics and utilization of screening services

Attribute	Screened No (%)	Not screened No (%)	χ^2 ,df,p	Odds Ratio
Age in Years				
< 20	7(13)	45(87)	$\chi^2 = 5.382$ df=3 p =0.146	
20-29	24(12)	180(88)		
30-39	18(22)	63(78)		
40-49	6(18)	27(82)		
Total	55(15)	315(85)		
Level of schooling				
Primary	15(7)	191(93)	$\chi^2=21.728$, df=3 p = 0.000	OR=5.727 p=0.000
Secondary	26(23)	87(77)		
Tertiary	8(29)	20(71)		
No formal education	6(26)	17(74)		
Total	55(15)	315(85)		
Marital status				
Single	12(14)	75(86)	$\chi^2 = 0.127$ df =2 p =0.938	
Married	38(15)	214(85)		
Not living with partner	5(16)	26(84)		
Total	55(15)	315(85)		
No.of children				
1	21(15)	122(85)	$\chi^2=0.767$ df 3 p =0.857	
2-3	19(14)	119(86)		
4-5	9(15)	50(85)		
>5	6(20)	24(80)		
Total	55(15)	315(85)		
Religion				
Roman Catholic	20(15)	116(85)	$\chi^2=7.926$ df=2 p =0.019	OR = 0.739 p=0.228
Protestants	27(13)	184(87)		
Muslims	8(35)	15(65)		
Total	55(15)	315(85)		

Main source of income				
Farm produce	26(11)	201(89)	$\chi^2=15.030$ df= 2 p = 0.001	OR=0.576, p=0.001
Business	7(10)	60(90)		
Employed/salaried	22(29)	54(71)		
Total	55(15)	315(85)		
Main income earner				
Self	20(19)	87(81)	$\chi^2=1.788$ df 2 p = 0.409	
Husband	25(13)	167(87)		
Support from others (parents, children)	10(14)	61(86)		
Total	55(15)	315(85)		
Average monthly income				
≤ Ksh 2500	7(8)	79(82)	$\chi^2=27.942$ df =4 p =0.000	OR=0.692 p=0.001
Ksh 2501-5000	14(10)	125(90)		
Ksh 5001-10000	13(18)	58(82)		
Ksh 10001-20000	15(43)	20(57)		
>Ksh 20000	6(15)	33(85)		
Total	55(15)	315(85)		

Awareness of Cervical cancer

Seventy three percent 73% (n=294) had heard about cervical cancer, eighty percent of the respondents didn't know anyone with cervical cancer, 53.8% agreed that they were aware of services for screening cervical cancer. Figure1 shows respondent level of awareness and their screening tendencies.

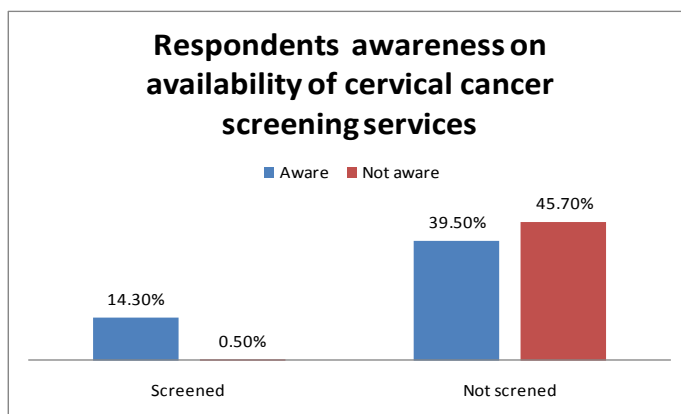


Figure1 Awareness of cervical cancer screening

Thirty five percent (n=131) of the sampled-out women in the survey confirmed that they received information about cervical cancer from their healthcare providers, 2.2% (n=8) of the sampled-out women in the survey learnt from relatives, 7.6% (n=28) of them learnt about screening for cervical cancer from friends, 8.6% (n=32) of them learnt about it from media (print and electronic) while 44.8% were not aware about it.

Screening Practices

14.9% of the sampled-out women in the survey had been screened for cervical cancer and table 2 summarizes some of the reasons respondents gave for not being screened.

Table2 Respondents reasons for not being screened

Reasons for not being screened	Frequency	Percentage
No information	138	37.3
Didn't have enough time	14	3.8
Didn't get the services when needed them	5	1.4
Didn't think they were susceptible	17	4.6
Embarrassment of being examined in the private area	45	12.0
No approval from their partners	8	2.2
Worried that can be told they have cervical cancer	34	9.2
Hadn't thought about it	54	14.6
Total	315	85.1

Seventy three percent (n=271) of the sampled women were the decision maker on who, when and where to go for health services.

Constrains encountered while offering VIA/VILI screening services

Some of the challenges or constraints encountered according to key informants were shortage of trained personnel while offering screening services, lack materials and instruments during the exercise, lack support from their respective supervisors, work overload and non-cooperating clients. The key informants reported that lack of awareness was the major hindrance to utilization of VIA/VILI screening but negative cultural practices/ beliefs also affected utilization of the services. Public health facilities were less than one hour walk for 85% of respondents, the three Health centers lacked functional cryotherapy unit, Examination speculums were not adequate in the Health centers.

Discussion

Cervical cancer has a long precancerous period, usually taking more than ten years to progress from precancerous lesions to invasive cancer. As a result, it's rare for cervical cancer to develop in a woman less than thirty years of age [8]. This means that the best time to screen is when the woman is below this age and resources for screening should focus on this group more. There was no statistical significant relationship between age and marital status of the respondent and use of cervical cancer screening services, ($p = 0.146$ for age) ($p = 0.938$ for marital status). This was in contrast with another study on knowledge and barriers towards cervical screening among young women in Malaysia where age, marital status ethnicity and monthly family income had an influence on cervical cancer screening [9]. The study found that 47% ($n=173$) of the women in the public health facilities had 2-3 children and 27% ($n=100$) indicated that they had only one child. Multiparity is a risk to many maternal conditions and its one of the predisposing factor to cervical cancer. A study has shown HPV-infected women who had five or more children had a three-fold increase in risk of cervical cancer compared to women with no children [10]. There was a no statistical significant relationship between the number of children the respondent had and her uptake of the availed screening services. ($p = 0.857$). The results are supported by study on Presentation and health care seeking behavior of patients with cervical cancer seen at Moi Teaching and Referral Hospital, Eldoret Kenya, where parity had no influence on screening for cervical cancer[11]. Parity refers to the number of pregnancy a woman have had and some woman may have few life children but a number of pregnancies, this is mainly due to miscarriages or abortions. The results were inconsistent with a study on factors influencing uptake of cervical cancer screening among women in India where they found that utilization of screening services was directly proportional to parity of the women indicating that previous contacts with reproductive health services in their previous parity (in the form of gynecological checkups) may increase awareness among women to be more responsive towards health workers and facilities and getting screened opportunistically [12].

The result showed that majority of the respondents last born children were < 5 years, 46.8% ($n=173$). The duration between the last process of child birth and another pelvic examination can have influence on the woman decision to be screened more so if the process was painful. The woman may avoid any procedure that reminds her on what she experienced. This includes pelvic examination for family planning and cervical cancer screening purposes. There was no significant statistical association between the client last born age and her utilization of the screening services.

There was a strong statistical relationship between the respondent education level and utilization of the availed cervical cancer screening services ($p = 0.000$). These findings were supported by study on factors influencing cervical cancer screening among rural Indian women [12] and another one on factors affecting utilization of cervical cancer screening services in low resource settings [13]. Both studies supported the direct relationship between a woman level of education and her willingness to be screened for cervical cancer. Education is an important determinant in health seeking behavior. Educated people are able to perceive their health and health related problems better than non-educated ones. In many cases, uneducated or semi educated people do not access health services despite being economically stable due to various misconceptions. They may choose unconventional or traditional therapies over conventional effective remedies.

Though it might take a long time to greatly improve population literacy level, Strengthening and expanding programs addressing women/girl child education should contribute to improving women's health in the long term. It is assumed that an educated person is an empowered person who is able to rationalize all the decisions he/she makes.

The study established that majority of the women attending the public health facilities were Protestants as shown by 57% (n=211). There was no statistical significant association between the respondents' religion and her desire to use the VIA/VILI services, ($p = 0.228$). A study on determinants influencing uptake of Pap smear among Indian woman did not find any statistical significant relationship between their religion and their use of Pap smear as a cervical screening method [12], In contrast another study on utilization of reproductive health services in rural Vietnam showed that Catholics in Vietnam were less likely to receive proper health care [14]. A study in USA found out that, among Immigrant Muslim women there is low rates of health services utilization, more so in preventive care such as, mammograms, breast exams and cervical cancer screening [15]. Cultural and religious beliefs, such as the value placed on premarital virginity and modesty, contribute to reluctance to seek health services. In general, depending on the conviction of the various teachings, the religion of a woman may influence positively or negatively utilization of the availed health services.

The study findings showed that majority of the women 61.4% (n=227) under study were unemployed and the main source of income was farming. A statistical significant relationship existed between the client main source of income and use of VIA/VILI services ($p= 0.001$). A paper addressing low utilization of health services in developing countries showed that when the population is very poor with very low income, they do not give enough attention to their health care needs due to financial problems. Women issues become secondary and are ignored by the household heads as they struggle to cater for the basic needs of their families [16]. A study on personal factors influencing use of cervical cancer screening services reported that rates of cervical screening were lower amongst women who were older, reliant on welfare, obese, current smokers, reported childhood sexual abuse, and those with anxiety symptoms [17].

Although there are no charges for women to be screened by VIA/VILI, many women associate health services with fees and when a woman is financially poor there is a tendency to shy off in response to availed health services as opposed to when she have some funds which will motivate her to seek health care.

Majority of the respondents 52 % (n=192) were supported by their husbands/partners as they were the main income earners. There was no statistical significant relationship between the main income earner and the client willingness to use the cervical cancer screening services ($p = 0.409$). In a study on Men's involvement in promoting Reproductive Health in South Africa, Male partners were a factor in determining the uptake of the services as he was the one to provide the funds for transport and the hospital fee [18]. In most communities the head of the family who is usually the main income earner and in most cases the male partner decides who, when and where to seek health care services.

Sixty percent (n=222) of the sampled women earned Ksh 5000 or less per month. There was a statistical significant association between the client average monthly income and use of the availed cervical cancer screening services ($p=0.001$). A study on barriers towards cervical cancer

screening among young Malaysian women found low income as a barrier to being screened among young women [9]. Seventy three percent (n=271) of the sampled women were the decision makers on who, when and where to go for health services. There was a statistical significant relationship between the person who makes the decision on who, where and when to seek for health care and utilization of the availed cervical cancer screening services. (p= 0.032).

Thirty five percent (n=130) of the respondents stated that they had never heard people discussing about cervical cancer. This implies that the level of engagement of the community in discussing cervical cancer is low. A study on Health behavior and health education theory, research, and practice, emphasized the importance of community readiness and participation in increasing cervical screening services uptake in a given community [19].

One of other comment people made about VIA/ VILI screening method was that the reagents caused itching. In the paper on Understanding the role of embarrassment in gynecological screening in Uganda the conclusion was that embarrassment and other psychosocial barriers may play a large role at the onset of a screening programme, but over time as education and knowledge increase, and the social norms around screening evolve, its role diminishes [20]. The role of peer education and community authorities on health care cannot be overlooked and can have major impact in overcoming psychosocial and social barriers to screening.

Conclusions

The level of awareness on cervical cancer prevention among eligible clients in Kitui Central Sub county was low 53.8% compared to national target of over 90% and awareness on existence of cervical cancer and its prevention services greatly influenced the decision to utilize the availed cervical cancer screening services. Level of education, main source of income and average monthly income significantly influenced VIA/VILI cervical cancer screening services uptake. Cultural factors such as who decides on matters regarding health in the family also statistically influenced the uptake of the screening services. Clients age, marital status, parity, religion and main income earner were not statistically significantly associated with utilization of VIA/VILI screening services.

Declaration

The authors declare that they have no competing interests

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