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BIO-SOCIOCULTURAL FACTORS DETERMINING UTILIZATION OF CERVICAL CANCER SCREENING SERVICES AMONG WOMEN AGED 25-49 YEARS

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ABSTRACT

Background: Cervical Cancer has been established as the fourth most common cancer among women all over the world, with an estimated 570,000 new cases in 2018. Kenya cervical cancer statistics have shown that the disease contributes 5,250 (12.9%) of the new cancer cases every year, consequently contributing to 3,286 (11.84%) of all the cancer deaths annually. Cultural beliefs significantly influence cervical cancer prevention, and WHO emphasizes screening for early detection of precancerous lesions as a key strategy toward eliminating the disease among women.

Methodology: We conducted a cross-sectional study at the Maternal Child Health clinic at Kitengela Sub-county Hospital. Women aged 25-49 years were assessed. Semi-structured researcher-administered questionnaires were used to assess the bio-sociocultural factors influencing the utilization of cervical cancer screening services. The study used Fisher's formula to determine a sample of 194 participants selected through systematic random sampling, with data analyzed using descriptive statistics, Pearson correlation, and logistic regression in SPSS version 24.

Results: The study showed that the older the woman, the higher the chances of utilizing the service (B=0.731). Although most 82.5% (n=160) of them were married, only 1.5 % (n=3) found it comfortable discussing their reproductive health issues with their sexual partner. A significant number 36% (n= 54) of them, felt that it was shameful to expose their private parts. All respondents were Christians; however, a significant number, 20% (n=30) of them, reported that their religion does not allow them to be screened for cervical cancer. The analysis showed that the higher the number of children one has, the greater the likelihood of using the service (B = 0.253).

Conclusion: Cervical cancer screening uptake remains low despite general awareness, largely due to inadequate knowledge about free services in public health facilities. Targeted health education and age-specific sensitization strategies are therefore necessary to improve utilization, especially among younger women.

Keywords: *Bio-socio-cultural factors, cervical cancer screening service utilization*

BACKGROUND TO THE STUDY

Cervical cancer has been established as the fourth most common cancer among women all over the world, with an estimated 570,000 new cases in 2018. All countries are affected globally, but the incidence is higher in low- and middle-income countries (Hernández Vargas et al., 2021). Studies have shown that incidence rates vary from 75 per 100,000 women in countries with the highest risk to less than 10 per 100,000 women in countries with the lowest risk. Low-middle-income countries have experienced nearly 60% of the 311,000 deaths reported in 2018 worldwide, and this is more than twice the proportion in many high-income countries, where it is as low as 30% of the 311,000 deaths (Arbyn et al., 2019). Similarly, in sub-Saharan Africa, cervical cancer incidences are the highest in the world, and a study by Anaman-Torgbor et al., (2020)showed statistics of 35 per 100,000 cases and 23 per 100,000 deaths from the disease annually. Kenya cervical cancer statistics have shown that the disease contributes 5,250 (12.9%) of the new cancer cases every year, consequently contributing to 3,286 (11.84%) of all the cancer deaths every year. It is the leading cause of cancer-related deaths in Kenya and also the second most common cancer among women (Bray et al., 2018).

On the other hand, studies have shown that the burden of cervical cancer will rise to 700, 000 cases and 400, 000 deaths in 2030 globally, with comparable increases being expected in future years, as demonstrated by Torre et al., (2017). To a great extent, more than the total increase in incidences and deaths will be in women in low- and middle-income countries. This evidently shows the severity of global disparity in cervical cancer morbidity and mortality as indicated by Simelela, (2021). Studies have shown that developed countries have maximally beaten cervical cancer and (Rahman et al., 2013) A study found that the United States had an incidence rate of 1.7/100,000 and a mortality rate of 5.7/100,000, while Canada had an incidence rate of 6.6/100,000 and a mortality rate of 1.9/100,000.

A report by the World Health Organization (WHO) estimated deaths of 13 per 100,000 women in low-and middle-income countries as a result of cervical cancer. However, the report offered hope that, by 2030, with the 90-70-90 triple-intervention strategy, this estimated outcome could be reversed to approximately 300,000 deaths, representing a 34% reduction (Gultekin et al., 2020). This elimination approach of cervical cancer is firmly attached to the cervical cancer prevention and control program of every state government

which are built on the six healthcare system building block (World Health Organization et al., 2014).

Screening for cervical cancer is defined as the process of using a simple procedure across healthy individuals in a population in order to establish the existence of a cancer disease in an individual before they develop any symptoms of the disease (Bhatla et al., 2018). The aim of this process is to discover asymptomatic persons who have abnormal features that indicate they could be having a pre-cancerous state of the cancer (Maine et al., 2011). This helps with early detection and links these individuals to an appropriate diagnostic process and treatment. Adequate human resources with the required skills are necessary in performing the screening tests as stipulated b Gupta et al., (2017). Studies have shown that in developed countries, ordinary screening with a Pap smear has successfully reduced the chances of developing invasive cervical cancer through early detection of pre-cancerous cell changes. In developing Countries, only 5% of women are eligible for cytology screening due to resource constraints. Therefore, VIA-VILI screening methods remain the affordable option for low-middle-income Countries (Ntekim, 2012).

Airhihenbuwa and Iwelunmor (2019) stated that cultural practices and beliefs are a central determinant in the prevention and management of non-communicable diseases like cervical cancer. Ampofo et al. (2020) indicated that there is a markedly high incidence of cervical cancer in Sub-Saharan Africa, which was reasonably explained by societal factors related to sexual behaviors and high estimates of sexually transmitted infections such as HIV and HPV without adequate compensatory cytological screening.

Among women of reproductive age 25-49 years studied in Botswana, many hold untrue misconceptions of the service and the confidentiality of their results. The majority feared utilizing the service due to the belief that one would be forced to undergo a hysterectomy if found with signs of cervical cancer, hence life barrenness. Despite women having some ideas of cervical cancer screening, misconceptions and cultural beliefs hinder them from utilizing the services as required (Major et al., 2018). A similar study by (2014) in Ghana showed that many participants had a negative perception that the disease would eventually result in death. Other participants were not aware of cervical cancer screening tests, and their responses revealed that they would go for the screening service if they knew more about the disease and the screening procedure. A study done also in Ethiopia clearly demonstrated the influence of socio-cultural practices on cervical cancer screening services

utilization. Early marriages below 16 years were 55.9%, while those below 21 years were 92.3%. The study also showed 47% of them had more than one sexual partners, 31.3% of them were women with high parity, and 46.1% of them are in a polygamous family (Tadesse, 2015).

In Kenya, a study done in Embu County by Kibicho, (2013)illustrated the association between culture and cervical cancer screening. It showed that women had a negative attitude towards the screening procedure, which involves exposing one's private parts to healthcare providers. This is said to be taboo in most communities in the Country, and the privacy of genital exposure should only be between couples. The study revealed that the screening procedure is embarrassing and causes discomfort, thereby becoming a barrier to using the services. On the other hand, Kimani et al. (2019) study in Webuye, Western Kenya, revealed that religious beliefs had an influence on the uptake of cervical cancer screening. Among the respondents, 45.5% of them believed that cervical cancer is a curse and it has no cure. At the same time, 62.4% of them said none of their spiritual leaders encouraged them to seek screening services for cervical cancer.

METHODS

This section describes the methodological approach used to achieve the study objective. It outlines the study design, study area, target population, sampling procedure, data collection instrument, data management and analysis procedures, and ethical considerations observed during the research process. The section provides sufficient detail to enhance the transparency, reliability, and replicability of the study findings.

Study Design

The researchers adopted a cross-sectional descriptive design to provide information on the presence or level of one or more variables under study. It is the best design for measuring the occurrence of an event and assessing healthcare system needs (Aggarwal & Ranganathan, 2019).

Study area

We conducted the study at Kitengela Sub-County Hospital, which was purposively selected because it is the busiest level 4 hospital in Kajiado County. An average of 381 women attend Maternal Child Health Family planning clinics every month, but with a very low rate of screening for cancer of the cervix (MOH 711). Kitengela Sub-county Hospital is located in Kajiado East (Isinya) Sub-county, Kajiado County, Kenya, with a female population of 104,860 according to the Kenya Population and Housing Census (2019), Kenya National Bureau of Statistics. It has a maternal and child health clinic where data were collected from respondents who visited the clinic during the data collection period.

Study population

The study population consisted of all women aged 25-49 years who attended the Maternal Child Health clinic during the study period. A study by Fontham et al., (2020) acknowledges that screening procedures on women below the age of 25 will not be significant because they do not pick up cervical intraepithelial neoplastic cells. The study excluded women aged 25-49 years diagnosed with psychological disorders, as they may not give reliable responses, and those who required emergency medical attention.

Sampling procedure

The sample size determination was done using the modified formulae by Fisher et al, (1998). Mugenda, (1999), recommends this formula for determining sample sizes in social studies. A total of 194 women were selected, and systematic sampling was used to recruit respondents.

Data management

A semi-structured researcher-administered questionnaire was used for data collection. The tool was prepared in both English and Kiswahili to accommodate respondents who understood either language. The questionnaire was organized into sections capturing respondents' socio-demographic characteristics and bio-sociocultural factors influencing utilization of cervical cancer screening services. The tool was pretested at a health centre in Kitengela with similar socio-demographic characteristics to the study area, and necessary adjustments were made. All COVID-19 prevention protocols were observed during data collection. Data were cleaned, coded, and entered for analysis. Quantitative data from closed-ended questions were analysed using SPSS version 24

through descriptive statistics (frequencies and percentages) and inferential analysis using logistic regression to determine factors associated with cervical cancer screening utilization.

Ethical Consideration

Review of the protocols, clearance, and approval to conduct the study were sought by presenting the study proposal to the Kenyatta National Hospital-University of Nairobi (KNH-UoN) ethics review board. We sought permission to access study participants from the Kajiado County Department of Health through the medical superintendent of Kitengela Sub-County Hospital. A voluntary informed consent form was given to the respondents before participation in the study. Participants were briefed on their rights and the expected benefits of the study.

RESULTS

A total of 194 women aged 25–49 years consented to be interviewed out of 210 approached, yielding a response rate of 92.4%. The results are presented under socio-demographic characteristics, socio-economic characteristics, awareness, and socio-cultural factors, and inferential analysis of determinants of cervical cancer screening utilization.

Socio-demographic characteristics

Table 1 shows that most respondents resided in Kitengela (79.9%), followed by Athi River (8.2%) and Mlolongo (7.2%). The largest age category was 26–30 years (42.3%), followed by 31–35 years (27.8%). Most participants were married (82.5%), and among those married, 90.8% were in monogamous unions. All respondents reported being Christians.

Regarding parity, the majority had two children (30.4%) or one child (29.9%), while only 2.6% had no children. Educational attainment was relatively low to moderate, with most having secondary education (42.8%), followed by primary (33.0%) and tertiary (24.2%).

Table 1: Socio-demographic characteristics of study participants

Variable	Frequency	Percent (%)
Residence		
Athi River	16	8.2
Kitengela	155	79.9
Mlolongo	14	7.2
Rongai	1	0.5
Sabaki	1	0.5
Syokimau	7	3.6
Age Category (Years)		
20-25	19	9.8
26-30	82	42.3
31-35	54	27.8
36-40	29	14.9
41-45	8	4.1
46-50	2	1
Marital Status		
Divorced/Separated	14	7.2
Married	160	82.5
Single	19	9.8
Widowed	1	0.5
Form Of Marriage		
Monogamy	159	90.8
Polygamy	16	9.2
Religion		
Christian	194	100
Number Of Children		
0	5	2.6
1	58	29.9
2	59	30.4
3	43	22.2
4	25	12.9
5	4	2.1
Level Of Education		
Primary	64	33
Secondary	83	42.8
College/Tertiary	47	24.2

Socio-economic characteristics of the respondents

In terms of occupation, 29.9% of respondents were in informal employment, 27.3% were self-employed, 16.0% were formally employed, while 26.8% were unemployed. Most respondents earned between Ksh. 5,000 and Ksh. 10,000 (41.8%), while 25.8% earned above Ksh. 10,000.

The hospital was largely accessible: 39.7% walked to the facility, 33.0% used motorcycles, and fewer used taxis (13.4%) or other means (13.9%).

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Table 2: Economic factors

Variable	Frequency	Percent (%)
Occupation		
Formal employment with monthly Salary	31	16.0
Informal employment for wages	58	29.9
Self Employed	53	27.3
Unemployed	52	26.8
Average Monthly Income		
Below 5,000Ksh	11	5.7
Between 5,000 and 10,000Ksh	81	41.8
above 10,000Ksh	50	25.8
Unemployed	52	26.8
Means of Transport		
A motorcycle	64	33.0
I walk because it is near	77	39.7
Taxi	26	13.4
Others	27	13.9

Utilization and Awareness of Cervical Cancer Screening Services

Most respondents (85.6%) reported having heard of cervical cancer screening services. However, only 22.2% had ever undergone cervical cancer screening, while 77.8% had never been screened.

Table 3: Awareness of cervical cancer screening

Variable	Frequency	Percent (%)
Ever Heard of Cervical Cancer		
No	28	14.4
Yes	166	85.6
Ever Been screened for Cervical Cancer		
No	151	77.8
Yes	43	22.2

Socio-cultural Factors Related to Cervical Cancer Screening

More than half of the respondents (54.1%) indicated that they were comfortable discussing reproductive health issues with any healthcare worker, while 39.7% preferred a female healthcare worker. Only 1.5% reported that they could discuss such matters with their spouse.

Among respondents who did not undergo screening during the study period, the most commonly reported barriers were the absence of symptoms (51%), long waiting times (50%), and the perception that the procedure was painful (38%). A substantial proportion also reported embarrassment in exposing private parts (36%), while 23% cited a lack of testing resources.

Table 4: Socio-Cultural Factors Related to Cervical Cancer Screening

Person	Frequency	Percent (%)
Any healthcare worker	105	54.1
Female health care worker	77	39.7
Male health-worker	9	4.6
Sexual partner/Spouse	3	1.5

What Made You Not Screened Today	Yes	Percent (%)
My religion does not allow	30	20%
The health-worker said I don't fit to be screened	10	7%
The testing resources were out of stock	35	23%
It takes time to wait to be screened	74	50%

The healthcare worker care has to be a female	27	18%
I felt it's shameful to expose my private parts	54	36%
I don't have any symptoms of cervical cancer disease	76	51%
The procedure is said to be painful	56	38%

Regression Analysis of Determinants of Cervical Cancer Screening Utilization

Logistic regression analysis was conducted to identify factors associated with utilization of cervical cancer screening services (defined as ever having been screened).

Socio-economic Factors Predicting Screening Utilization

A multivariable logistic regression model assessed the relationship between socioeconomic variables and cervical cancer screening utilization. The findings showed that knowledge that cervical cancer screening services were free was a significant predictor of screening utilization (B = 1.982, p = 0.003). Women who knew that screening was free had 7.26 times higher odds of utilizing cervical cancer screening services compared to those who did not (OR = 7.255).

Other socioeconomic variables, including level of education (OR = 1.258, p = 0.356), average monthly income (OR = 0.909, p = 0.638), and the perception that screening costs are high (OR = 0.964, p = 0.931), were not statistically significant predictors of screening utilization.

Table 5: Relationship between economic factors and utilization of cervical cancer screening

	Variables in the Equation	B	S.E.	Wald	Sig.	Exp(B)
Step 1[a]	Level_of_Education	0.230	0.249	0.850	0.356	1.258
	Average_Monthly_Income	-0.096	0.204	0.221	0.638	0.909
	Is_The_Cost_of_CCS_High	-0.036	0.417	0.008	0.931	0.964
	Do_you_Know_that_CCS_Is_Free	1.982	0.657	9.091	0.003	7.255
	Constant	-3.044	0.938	10.527	0.001	0.048

⁎ ***Significance Value with p< 0.05***

Bio-sociocultural factors and utilization of cervical cancer screening services

Bivariate logistic regression was conducted to assess whether age category and number of children were associated with screening uptake. Age category was significantly associated with utilization of cervical cancer screening (B = 0.731, p < 0.001). The odds of having

been screened increased by approximately 2.08 times with increasing age category (OR = 2.077).

In contrast, the number of children was not significantly associated with screening utilization (B = 0.253, p = 0.174), although the odds ratio suggested a positive trend (OR = 1.288).

Table 6: Relationship between bio-sociocultural factors and Utilization of cervical cancer screening

	Variables in the Equation	B	S.E.	Wald	Sig.	Exp(B)
Step 1[a]	No_Of_Children	0.253	0.186	1.850	0.174	1.288
	Age category	0.731	0.205	12.693	0.000	2.077
	Constant	-3.964	0.621	40.721	0.000	0.019

**Significance value (p< 0.05)*

DISCUSSION

Cervical Cancer Screening Service Utilization

Despite available methods for early detection and elimination of cervical cancer, screening for precancerous cells remains at a lower rate in Kenya. A satisfactory number of studies done in Sub-Saharan Africa and within the Country have reported similar findings of low cervical cancer screening service utilization. Evidence from these studies' findings related the suboptimal utilization to myriad factors. Our study sought to determine the extend at which bio-sociocultural factors influenced the utilization of cervical cancer screening among women aged 25-49 years attending Kitengela Sub-County Hospital. A total of 194 women were interviewed, with 85.6% of the respondents reporting having heard about cervical cancer screening in the past. However, only 22.2% report having utilized the service. A similar study done at Jaramogi Oginga Odinga by Morema et al. (2014) showed that only 17.5% of the target population reported having utilized the screening service, which is still below the target of 70% countrywide. Male partner support is inadequate, though the majority of the respondents are married.

Bio-sociocultural factors as determinants of cervical cancer screening service utilization

Our study results indicated a significant relationship (p-value = 0.000) between age and utilization of cervical cancer screening services. The study results also revealed that the older the woman, the likelihood of them utilizing the screening service. This could be associated with their potential increased awareness of different diseases that affect women, including cervical cancer. While these study findings relates with Ng'ang'a et al., (2018) and Barrow et al., (2020) which had similar results, it contrast with a study in Kitui County by Mbaluka, (2019) which highlighted that young women were more likely to utilize cervical cancer screening services, and this can be explained by the use of social media platforms, which is common among younger people in general, and a high level of education.

This study revealed that though the majority of the respondents were married, 3 (1.5%) of them reported being comfortable discussing their issues related to the reproductive system with their sexual partner or spouse, thus partner support is inadequate. The findings agree with Binka et al., (2019) that found out that male partners had inadequate knowledge of cervical cancer screening, hence a lack of partner support. The number of children had no statistical significance to the utilization of cervical cancer screening. However, there was a correlation: the higher the number of children a respondent had, the more likely they were to use the service, and this also related to the woman's age.

All the respondents (100%) were Christian by religion and this explains the representation of religion coverage within the study area. Though the study did not reveal an adverse influence of religion on cervical cancer screening utilization, 30 (20 %) of those respondents who didn't get screening during the period of data collection reported that religion determines their decision to utilize the service. This confirms the findings of Kimani et al., (2019) study which was done in Webuye, that religious beliefs have influenced the utilization of cervical cancer screening services.

Level of education from the study result had no statistically significant relationship with utilization of cervical cancer. But it added the benefit of knowledge on cervical cancer screening service, with 85.6% of the respondents reporting having known about cervical cancer screening, thus becoming an enabling factor to utilization of the service. This is in agreement with a study done in Ethiopia by Gemeda et al., (2020), that has related awareness and information about cervical cancer screening with education level.

Socio-Economic factors are determinants of cervical cancer screening utilization

The findings of the study revealed that most of the respondents were income earners with less than a third, 52(26.8%) of them being unemployed. There was no significant relationship between education level and average monthly income to the utilization of cervical cancer screening. This is in contrast to Belay et al., (2020) study in Ethiopia and Ampofo et al., (2020) A study in Ghana has associated low utilization of cervical cancer screening with unemployment. The study results revealed a statistically significant association (P=0.003) between awareness of free cervical cancer screening availability and service utilization, with those who were aware 1.982 times more likely to use the service. This being a motivating factor, the study findings agree with Yimer et al. (2021). A broad study in Sub-Saharan Africa showed that out-of-pocket payments hinder women from utilizing screening services. Accessibility to modes of transport to the health facility was not statistically significant in this study; nearly a third of respondents (77; 39.7%) reported walking to the facility because it is near them, while others used motorcycles and taxis. These findings contrast with a study done in Vhembe District, South Africa, by Vhuromu et al., (2018) where women had difficulty accessing health facilities due to distance and the terrain.

CONCLUSION

The study concludes that utilization of cervical cancer screening services among women aged 25–49 years attending Kitengela Sub-County Hospital is critically low, with only 43 (22.2%) reporting previous screening. This level is far below the WHO target of 70% screening coverage, indicating a major gap in cervical cancer prevention and early detection efforts.

Although awareness of cervical cancer screening was relatively high, the findings suggest that the information available to women is inadequate to motivate screening uptake. In particular, the lack of awareness that screening services are free at public facilities highlights a significant communication gap that limits their use.

Age was a significant determinant of screening uptake, with younger women being less likely to utilize screening services. This underscores the need for targeted sensitization and integration of cervical cancer screening education into routine maternal and child health services to improve uptake, reduce late presentation, and lower cervical cancer burden in Kenya.

RECOMMENDATIONS

The need to formulate community-based participatory approach-oriented policies needs to be considered in order to enhance prevention and early detection of cervical cancer, thus increasing the uptake of cervical cancer screening, and therefore realizing the WHO 70% target.

Men's involvement in cervical cancer screening health education will go a long way in building partner support and enhancing open communication among spouses. As the Kenya Ministry of Health prepares to develop another cervical cancer strategic plan, this recommendation needs to be adopted.

The study also recommends that cervical cancer screening be adopted as a mandatory routine for all women of reproductive age. This has worked for other developed countries, and the policy has helped in reducing the burden of women presenting late with incurable disease.

Women's preference for the gender of healthcare workers should also be taken into account when deploying. There is a need to emphasize the benefits and success of early detection to young women, who often think the service is for older women. There is a need to create in-depth awareness on the current burden of cervical cancer in the Country to encourage women to utilize available screening services.

This study was limited to Kitengela Sub-County Hospital, one of the four Sub-counties Hospitals in Kajiado County. Therefore, there is a need for further studies to be done in the entire Sub-County Hospitals within the County.

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