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Factors Influencing Utilization of Cervical Cancer Screening Services Among Women of Reproductive Age in Calabar Municipality, Cross River State, Nigeria.

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Abstract

Background*: Cervical cancer is the second most prevalent cancer among women in developing countries. Despite all public health measures, the death rate from the disease in Nigeria continues to increase. Uptake of cervical cancer screening services in Nigeria is very low hence, this study sought to determine the factors influencing this, among women of reproductive age in Calabar Municipality.*

Methods*: A descriptive cross-sectional study design was used to assess the factors influencing the uptake of available cervical cancer screening services in Calabar, Cross River State. A semi-structured questionnaire was used to collect data from 450 women of reproductive age, selected using a multi-stage sampling technique. Data was analyzed using the Statistical Package for Social Sciences (SPSS) Version 20.*

Results*: Twenty-eight (6.2%) respondents had utilized available cervical cancer screening services out of which 10 (35.7%) utilized the services within the 6 months preceding the survey and 8 (28.6%) utilized the services between the 6-12 months preceding the survey. Poor awareness about the availability of screening services (45.3%), low risk perception (6.0%), poor knowledge of where to access services (18.5%) and financial constraint (11.6%) were factors that influenced the use of cervical cancer screening services. Age, marital status and occupation were found to be significantly associated with screening service utilization ($p<0.05$) at bivariate level but only age was significant in the multivariate model.*

Conclusion: *There is need for health education to raise awareness and other interventions that could address socio-economic challenges that impede the utilization of cervical cancer screening services.*

Key words*: Cervical cancer screening; Uptake; Awareness; Age;*

Introduction

Cervical cancer is the second most prevalent cancer among women in developing countries.[1] It is caused by the sexually-transmitted Human Papilloma Virus (HPV). Many HPV strains are asymptomatic and clear up quickly, but a few infect the cervix and cause pre-cancerous lesions that can advance to cancer.[1] Approximately 500,000 cases are diagnosed each year and more than half of these result in death.[1] In low-resource settings, cervical cancer has a greater burden of morbidity and mortality because most cases are detected in the late stages). In 2012, not less than 530,000 new cases of the disease and 275,000 deaths were recorded globally where it accounted for almost 12% of all female cancers and 90% of these deaths were recorded in developing countries.[1] In the WHO African region, about 75,000 new cases were reported for the same year.[1] The incidence of cervical cancer is high in countries such as Eastern Africa (42.7%), Melanesia (33.3%), Southern (31.5%) and Middle (30.6%) Africa.

In Nigeria, available statistics show that more than 100,000 women die every year from the disease.[2] Evidence-based Nigerian studies have also confirmed that the uptake of cervical cancer screening is very low despite the growing threat it poses to the health of women.[3,4,5] In Cross River State, it has been observed that poor access and use of health care services contribute significantly to the dismal health indices of Nigeria as a whole.[6] In Calabar municipality, there is little or no current empirical evidence on the use of cervical cancer screening services. Hence, determining the factors influencing the use of cervical cancer screening services among women in the study area is crucial in increasing the use of cervical cancer screening services. It is against this backdrop that this study was conceptualized, to determine the factors affecting the use of cervical cancer screening services among women of reproductive age in Calabar Municipality, Cross River State, Nigeria.

Methodology

Study Area

The study area is Calabar Municipality. It is situated in the Southern Senatorial District of Cross River State, Nigeria. The 2006 Population and housing Census estimated the population of Calabar Municipality to be 183,681.[7] Calabar Municipal council has 10 political wards with a land mass of 141.33 km^2. The Municipality has three levels of health care namely: primary, secondary and tertiary levels including private health care facilities. Calabar is famous for its rich cultural heritage, warm hospitality and peace-loving disposition.

Study design, population and sample size determination

The research was a descriptive cross-sectional study and the study population comprised all women of reproductive age (15-49 years) in Calabar Municipality, Cross River State, Nigeria.

The sample size for this study was determined using Lutz formula (1982) which is given as

$$n = \frac{Z^2Pq,}{d^2}$$ [7]

Where n = Sample size

Z = 1.96 (i.e. 95% confidence interval)

d = 0.05 (acceptable margin of error)

p = 34.6% = 0.346 (Proportion of women who have utilized cervical cancer screening services)[8]

q = 1-P = 1-0.346 = 0.654 (Proportion of women who have not utilized cervical

cancer screening services)

$$\text{Therefore, } n = \frac{(1.96)^2 \times 0.346 \times 0.654}{(0.05)^2}$$

$$= 347.7 = 348$$

The minimum sample size for this survey was 348.

Sampling technique

A four-stage sampling technique was used for the study. The stages involved the selection of wards, streets, households and respondents as follows:

Stage I: Selection of wards: Five out of the 10 wards in the study area- Calabar Municipality were selected using simple random sampling technique by balloting. The wards were selected one after the other without replacement until the five wards had been selected

Stage II: Selection of streets: In each selected ward, simple random sampling technique by balloting was used to select five streets. Therefore, selecting five streets per ward for five wards gave a total of 25 streets (5 streets X 5wards = 25 streets).

Stage III: Selection of Households: Systematic sampling technique was used to select households. In each selected street in order to meet the minimum sample size, 18 households were sampled using systematic sampling technique. To obtain the sampling interval, the total number of households was divided by the desired number of households to be sampled in that community. The sampling interval obtained was then used to sample every n^{th} household in each community. This procedure continued until 18 households were duly selected on each street.

Stage IV: Selection of respondents: From each of the selected households, only women aged between15–49 were eligible to be interviewed. In households which had more than one woman aged between 15-49 years, only one eligible person was randomly selected by balloting and then interviewed. In households where there were no eligible respondents, the next household was sampled as replacement. Four hundred and fifty respondents were eventually sampled in the study area.

Data collection and analysis

A semi-structured questionnaire was used to collect quantitative data from the respondents. The questionnaire was self-administered to the respondents that gave consent to participate in the study. It consisted of five sections and 26 items. The questionnaire contained questions that elicited information on the socio-demographic characteristics and utilization of cervical cancer screening services among women.

Collected data were coded, entered into and analyzed using the Statistical Package for Social Sciences Software (SPSS 20.0 version, 2012). Results were expressed as proportions and percentages. Chi-square test was used to test the bivariate association between socio-demographic factors and utilization of cervical cancer screening services at 95% confidence level while binary logistic regression was used to examine these relationships at the multivariate level. A statistically significant difference was indicated by a p-value less than 0.05. The dependent variable for both the bivariate and multivariate analysis was the respondents' responses to the question on the utilization of available cervical cancer screening services which was dichotomised into “yes” (coded as 1) for women who had ever utilised and 'no' (coded as 0) for those who had never utilised. The independent variables examined were age, educational status, marital status, occupational status, religion, income level and parity. Each of the independent variables were coded as categorical variables with different levels.

Ethical consideration

Ethical approval was obtained from Cross River State Ministry of Health Research

Ethics Committee, and the Ethics Committee of the University of Calabar Teaching Hospital. Informed consent was duly sought and obtained from the respondents verbally after clear explanation of the study. Anonymity, confidentiality and voluntary withdrawal of participants were adhered to, in line with the principles of the 1967 Helsinki declaration and those of the two ethical approval boards.

Results

A total of four hundred and fifty (450) questionnaires were administered and all were retrieved giving a response rate of 100%. Table 1 shows that 125 (27.8%) respondents were aged between 20-24 years, 93 (20.7%) between 15-19 years and 86 (19.1%) between 25-29 years. With regards to educational status, 278 (61.8%) had tertiary education and 110 (24.4%) had secondary education. In terms of marital status, 266 (49.1%) were single and 184 (40.9%) were married. For occupational status, 269 (59.8%) were skilled workers and 181 (40.2%) were unskilled workers. Four hundred and nineteen (93.1%) were Christians, 218 (48.8%) were low-income earners (less than N20, 000) and 245 (54.4%) had no child yet.

Twenty eight (6.2%) respondents had ever utilized the available cervical cancer screening services and out of these, 10 (35.7%) utilized the services within the 6 months preceding the survey while 8 (28.6%) utilized the services between 6-12 months preceding the survey (Table 2). Bivariate (χ^2) analysis revealed a significant association between the age of the women and utilization of cervical cancer screening services (*p=0.001)*. The older the respondents were, the more likely they were to have utilized cervical cancer screening services.

Women aged 40-45 utilized cervical cancer screening services more than any other age group; 11(39.3%) and this was significant (P=0.01). Respondents aged less than 30 years were the least likely to utilize cervical cancer screening services than other age categories. Also married women 23(82.1%) utilized cervical cancer screening more than their single counterpart which was also statistically significant (P=0.001). All women 28(100%) who utilized cervical cancer screening services were skilled and this was also statistically significant (P=0.001). In addition, utilization of cervical cancer screening tends to increase by educational qualification as only women with secondary 7(25%) and tertiary 21(75%) education tend to utilize services while having a tertiary education improved the chances of utilizing screening services (Table 3).

Factors affecting the use of cervical cancer screening services among women as highlighted by the respondents include; lack of awareness about the availability of cervical cancer screening services; 242 (45.3%), low risk perception about cervical cancer; 34 (6.0%), lack of knowledge of where to access cervical cancer screening services; 99 (18.5%), financial constraint; 62 (11.6%) and inaccessibility to screening services; 22 (4.1%) (Table 4).

Tables

Table 1: Socio-demographic characteristics of respondents

Variable	Frequency (n=450)	Percentage (%)
Age (in years)		
15-19	93	20.7
20-24	125	27.8
25-29	86	19.1
30-34	56	12.4
35-39	40	8.9
40-45	37	8.2
>45	13	2.9
Educational status		
No formal education	27	6.0
Primary	35	7.8
Secondary	110	24.4
Tertiary	278	61.8
Marital status		
Single	266	59.1
Married	184	40.9
Occupation		
Skilled worker	269	59.8
Unskilled worker	181	40.2
Religion		
Christianity	419	93.1
Islam	15	3.3
Traditional religion	16	3.6
Monthly income		
Less than N20,000	218	48.8
N20,000-N50,000	144	32.0
>N50,000	88	19.6
Number of children currently have		
None	245	54.4
1-3	143	31.8
4-6	58	12.9
7-10	4	0.9

Table 2: Utilization of cervical cancer screening services among respondents

Variables	Frequency (n)	Percentage (%)
Ever utilized any available cervical cancer screening services		
Have utilized	28	6.2
Have not utilized	422	93.8
Total	**450**	**100**
Last time cervical cancer screening services was utilized		
less than 6 months ago	10	35.7
6-12 months ago	8	28.6
1-3 years ago	5	17.9
4-6 years ago	3	10.7
Over 10 years ago	2	7.1
Total	**28**	**100**

Table 3: Bivariate and multivariate analysis of factors associated with the utilization of cervical cancer screening services

Variables	Ever screened for cervical cancer		Unadjusted odds ratio	Unadjusted P- Value	Adjusted odds ratio (Exp β)	P-value
	Yes (%)	No (%)				
Age			1.861	0.000		0.024
15-19	2(7.1)	91(21.5)			RC	
20-24	1(3.6)	124(29.3)			0.102	0.082
25-29	2(7.1)	84(19.9)			0.242	0.224
30-34	5(17.9)	51(12.0)			0.707	0.760
35-39	4(14.3)	36(8.5)			0.708	0.758
40-45	11(39.3)	26(6.1)			2.288	0.434
>45	3(10.7)	10(2.3)			2.265	0.520
Total	**28(100)**	**422(100)**				
Educational status			1.587	0.175		.992
No education	0	27(6.3)			0.000	.999
Primary	0	35(8.2)			0.000	.998
Secondary	7(25.0)	103(24.4)			0.843	.749
Tertiary	21(75.0)	257(60.9)			RC	
Total	**28(100)**	**422(100)**				
Marital status			5.777	0.001		0.325
Single	5(17.9)	261(61.8)				
Married	23(82.1)	161(38.1)			RC	
Total	**28(100)**	**422(100)**			1.996	
Occupational status			2.30	0.001		
Skilled	28(100)	241(57.1)			RC	0.996
Unskilled	0	181(42.8)			0.000	
Total	**28(100)**	**422(100)**				

Table 4: Factors affecting the use of cervical cancer screening services among women

Variables	Frequency (n)	Percentage (%)
Factors affecting the use of cervical cancer screening services among women*		
Lack of awareness about the availability of cervical cancer screening services	242	45.3
Low risk perception about cervical cancer	34	6.0
Lack of knowledge of where to access cervical cancer screening services	99	18.5
Financial constraint	62	11.6
Inaccessibility to screening services	22	4.1
Lack of facility for screening	16	3.0

*Multiple Responses

Discussion

Only a few respondents had utilized available cervical cancer screening services out of which about one-third had utilized the services in the six months preceding the survey. This is far lower than what was reported in Jamaica,[9] Tanzania,[10] Sokoto,[11] and Markurdi.[5] The low use of cervical cancer screening services among women reported in this study may be attributed to poor health literacy, low risk perception and lack of knowledge of the benefits of using such services.

Women aged 40-45 years utilized cervical cancer screening services more than any other age group at the bivariate level. In addition, the logistic regression models showed that women in the two oldest age groups (40-45 and >45) were more than twice as likely to utilize screening services compared to those in youngest age group (15-19), although this was not statistically significant. The finding of no statistical significance can be attributed to the relatively small number of women who had utilized the services. According to research older women tend to be more at risk than their younger counterparts.[12] It is probable that the high rate of utilization of cervical cancer screening service among this age group may have been as a result of more awareness and specifically targeted intervention to this age group than others. Also married women utilized cervical cancer screening more than their single counterparts. The logistic regression model also showed that married women were twice as likely as their unmarried counterparts to utilize available screening services. This is in agreement with the findings of a study which found that marital status contributed significantly in

determining whether people used screening services or not.[13] Furthermore, all women who utilized cervical cancer screening services were skilled indicating a real disparity in utilization of cervical cancer screening services by occupation. The logistic regression model, however showed no statistically significant relationship between occupation and the utilization of cervical screening services. Some studies have posited that, women with poor socio-economic status are likely to lack the financial capacity to bear the cost of a screening test.[14] As a result, it was most likely that skilled women would utilize screening services than their unskilled counterparts. In addition, utilization of cervical cancer tended to increase by educational status as only women with secondary and tertiary education tended to utilize services compared to women with lesser educational qualification. Similarly, in another research at Wofeng, it was observed that women with better educational qualification and good income were more eager to be involved in screening services than those with poor educational status and poor income background.[14]

Ample evidence has also substantiated that lack of awareness and knowledge about cervical cancer and its screening services was a huge barrier to the uptake of cervical cancer screening services.[15,16,17,18,19,20] This obviously implies that having knowledge of cervical cancer and the benefit of its screening services may possibly trigger high utilization of cervical cancer screening services among women. Low risk perception was identified as a factor affecting the use of cervical cancer screening services among women in this study. Similar results were reported by researchers elsewhere.[16,3,21] This implies that women utilize cervical cancer screening services only when there are visible signs and symptoms. Lack of knowledge of where to access cervical cancer screening services was indicated as a major barrier in this study. These finding agree with that from other studies where women exhibited absolute lack of knowledge about where to access the screening services.[3,22] This may often result from poor record of hospital consultation and decentralization of screening services. Another factor affecting the use of cervical cancer screening services identified in this study was financial constraint. This finding is supported by findings from previous studies where women with lower socio-economic status were low income earners.[23,18] Finance is a major consideration to improve the uptake of cervical cancer screening services especially with regards to transport fare and unexpected hidden charges at the screening center except for centers where free screening services are provided. Inaccessibility to screening services was also identified as a barrier to utilize cervical cancer screening services among women. The inaccessibility problem is an embodiment of other factors earlier highlighted in this study which include; lack of knowledge on where to obtain services, long distance to screening center or health facility, financial constraint for either expenditure on medical exigencies or for transportation to screening center, socio-economic status, cultural barriers (e.g. lack of autonomy among women to make decisions concerning their health) and belief system. Hence, establishing modalities to address the aforementioned barriers should be prioritized for most health intervention targeted at women. This view was similarly reported in previous studies conducted elsewhere.[24,25,26,27]

Conclusion

Cervical cancer is increasingly becoming a major threat to the health of women in Nigeria. Research has indicated a low level of awareness and use of cervical cancer screening services. This study found that younger women were least likely to utilize screening services and factors that influence the utilization include lack of awareness about the availability of cervical cancer screening services, low risk perception about cervical cancer, poor knowledge of where to access cervical cancer screening services and financial constraint. Hence, to improve the uptake of cervical cancer screening services among women, there is a strong need for information dissemination about available screening services. Furthermore, efforts should be intensified to create more awareness and young women especially should be educated on the risk of cervical cancer and the importance of preventive measures and early detection.

Contribution to knowledge

This study establishes that the level of utilization of cervical screening services in the study area is much lower than has been previously reported in other studies done in Nigeria. This study also buttresses the significance of women's age and socio-economic status in the utilization of cervical screening and calls for more attention to be paid to these key demographics to enhance utilization.

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