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Original Article

Determinants of Cervical Cancer Screening Uptake Among Antenatal Women in a Semi-Urban Hospital in Ebonyi State, Nigeria.

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Abstract

Background: Cervical cancer remains a major cause of cancer-related morbidity and mortality, especially among rural and semi-urban women in developing countries. Cervical cancer screening is a cost-effective method of detecting premalignant lesions of the cervix. The study aims to assess the practice and determinants of cervical cancer screening among women attending antenatal clinics in a semi-urban town of Ebonyi State.

Methodology: The study was a cross-sectional study. Three hundred and ninety-six eligible participants were serially selected in the antenatal clinic. Data was analyzed using IBM-SPSS version 21.0. Percentages of the data were expressed. Chi-square was used to test for the level of significance, and P-values of < 0.05 were considered significant.

Results: Majority had heard about cervical cancer, 75.2% of them had heard about the screening, and 66.8% of them believed that cervical cancer is preventable. The majority of the women who heard about cervical cancer have never been screened. Knowing that cervical screening was important was the major motivator in 46.8% of the women, while not knowing where to go for the screening was the major barrier. There is a significant relationship between the number of children had by the respondents and the level of uptake of the cervical cancer screening ($P<0.05$).

Conclusion: There was poor uptake of cervical cancer screening among the respondents despite commendable knowledge about cervical cancer and screening. Screening should be widely available in semi-urban areas and should be effectively incorporated into other existing health services.

Keywords: Cervical cancer, screening, motivators, barriers, uptake.

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Introduction

Cervical cancer is the commonest gynaecologic malignancy in the developing countries and the leading cause of cancer-related deaths, especially in countries without organized cancer screening programs.[1-3] Cervical cancer is a public health challenge, and it is regarded as a preventable cancer. Disappointingly, the World Health Organization (WHO) in 2018 estimated that there were 570,000 new cases and 311,000 deaths related to cancer of the cervix globally.[1,4] The majority of these deaths were recorded in developing countries.[1,2,4] The global average incident rate is 15.2/100,000 women, while sub-Saharan Africa has an estimated incidence of 19.1/100,0001. Sub-Saharan Africa has the highest burden of cervical cancer morbidity and mortality.[1,2,4] In Nigeria, cervical cancer ranks as the second most common cancer, of which a population of 50.33 million women ages 15 years and older are at risk of developing the disease.[1,4] Current estimates show that every year, 14,943 women in Nigeria are diagnosed with cervical cancer and 10,403 die from the disease.[1]

Cervical screening is the modality for the early detection and has proven to be very effective.[5-7] In the developed countries with well-established screening programs and policies, the incidence of cervical cancer has been significantly reduced.[1,8] In Nigeria and most of the developing countries, there is no standard policy or protocol for cervical cancer screening. Sporadic screening is mainly carried out for those who visit clinics for different health needs. Most of these screenings are limited to the tertiary hospitals and other urban facilities far-fetched from the vulnerable rural population.[2,5,9,10]

One of the risk factors for cervical cancer is low socioeconomic status, which is commonly seen in persons from semi-urban areas. Poor women rarely have good health seeking behavior due to a lack of awareness or finances. Thus, they are not screened or treated adequately for cervical cancer.[11] The objectives of this study were to determine the level of awareness of cervical cancer screening among the women attending antenatal clinic in the area, to determine the barriers and motivators towards cervical cancer screening among the respondents, to correlate the socio-demographic status of the respondents with the level of uptake and to correlate the socio-demographic status of the respondents with the willingness to undergo cervical screening.

Material and Methods

The study was conducted at Mater Misericordiae Hospital, a faith-based secondary hospital located in Afikpo town, Ebonyi State, Southeast Nigeria. The hospital has a well-developed Obstetrics and Gynaecology Unit attended by specialist and resident doctors, but its cervical screening service is not organized and patients are referred out for screening. The antenatal clinics are done on Mondays and Wednesdays with an average of 90 attendees per visit. The hospital serves Afikpo town and the neighboring villages in Ebonyi and other surrounding States of Abia, Akwa Ibom, Cross River, Enugu and Imo. The indigenous and immigrant populations of Afikpo are mainly small-scale farmers, fishermen/women, traders, artisans and civil servants; they are mainly low-income earners, with poor representation of the middle- and high-income groups. Literacy level, though improving in the past decade, is low within the population. Myths and superstitions are very common and often used to explain medical conditions.

Study Population

The study population comprised pregnant women who attended the antenatal clinic at Mater Misericordiae Hospital, Afikpo, Ebonyi State.

Study Design

The study was a descriptive, questionnaire-based cross-sectional study.

Data Collection
Data was collected using a structured questionnaire. Literate participants self-administered their questionnaires while research assistants assisted those who were less literate. The questionnaire was pre-tested with 20 samples at the Mater Misericordiae hospital, Afikpo and further modification made accordingly before final distribution among respondents.

The first section of the questionnaire collected information on the socio-demographic characteristics of the respondents. The second section assessed knowledge and awareness of cervical cancer. The third section assessed knowledge of cervical screening. The fourth section got information on practice, uptake and the determinants (motivators and barriers) of cervical screening.

Inclusion Criteria
This included pregnant women who attended the antenatal clinic in Mater Misericordiae Hospital, Afikpo, Ebonyi State, and who gave their consent for the study.

Exclusion Criteria
This included patients who did not give consent, pregnant women who were severely ill, and women in labour.

Sample Size Determination
Sample size was determined using the formula for qualitative variables[11]

Sample size, $N = Z^2P(1-P)/d^2$. N= the minimum sample size required, Z = standard normal deviate, 1.96 (at 95% confidence interval), P = proportion of respondents (antenatal women attendees) with good knowledge of cervical cancer[7], 1-P = proportion of population without the desired characteristics,d = degree of accuracy desired (maximum allowable margin of error set at 5%) = 0.05. N = 360 , 10% attrition = 396

Sampling Method
Eligible participants were consecutively recruited until the desired sample size was attained.

Study Duration
The study was carried out in three weeks.
Data Management

Outcome variables: Determinants (motivators and barriers) of uptake of cervical cancer screening by women attending antenatal clinic in Mater Misericordiae hospital, Afikpo.
Other variables assessed include socio-demographic characteristics, level of knowledge of cervical cancer and screening.

Data Analysis
Percentages of relevant data were obtained and expressed in simple descriptive statistics. Chi-square was used to test for the level of significance, and a P-value of < 0.05 was considered significant. Data was analyzed using Statistical Package for Social Science (IBM-SPSS) version 21.0.

Ethical Consideration
Ethical approval was obtained from the Research and Ethics Committee of Alex Ekwueme Federal University Teaching Hospital, Abakaliki, Ebonyi state with Registration number AEFUTHA/REC/VOL 3/2021/197.

Results

A total of 396 questionnaires were distributed; out of which 2 were not properly filled, thus 394 (99.5%) were collated and analyzed. **Table 1** shows the socio-demographic characteristics of the women. Most of the women were within the age range of 31-35 years, with the mean age of 30years. The majority (85.5%) were married, and Christianity (96.2%) was the predominant religion.

Table 1: Demographic characteristics of the respondents

Variables	Respondents (n=394)	Percentage
Age (years)		
≤20	28	7.1
21-25	58	14.7
26-30	117	29.7
31-35	126	32.0
36-40	45	11.4
≥41	20	5.1
Mean± SD	30.1±6.1	
Marital Status		
Married	337	85.5
Single	40	10.2
Separated	10	2.5
Widowed	7	1.8
Religion		
Christianity	379	96.2
Islam	13	3.3
Traditional	2	0.5
Occupation		
Business/ Trading	136	34.5
Civil/ Public Servant	111	28.2
Self-employed	78	19.8
Unemployed	49	12.4
Farming	20	5.1
Educational Status		
None	17	4.3
Primary	11	2.8
Secondary	148	37.6
Tertiary	218	55.3
Number of Children		
0	113	28.7
1-3	247	62.7
4-6	31	7.9
7 & above	3	0.8
Median (Range)	3(0-10)	

Table 1 shows the socio-demographic characteristics of the respondents. The mean age and standard deviation of participants were 30.1±6.1. Most were married, were Christians and traders. More than half of the respondents had a tertiary education and were multiparas.

It also showed that the majority of the respondents were traders (34.5%) and civil servants (28.2%) respectively. More than half (55.3%) of the respondents had a tertiary education, while 37.6% had secondary education. Many (62.7%) of the respondents had between 1-3 children. In **Table 2,** the majority, 286 (72.6%) of the respondents had heard about cervical cancer.

Table 2: Knowledge about cervical cancer

Knowledge about Cervical Cancer	No of Respondents	Percentage
Ever heard about cervical cancer (n=394)		
Yes	286	72.6
No	108	27.4
Sources of knowledge** (n=286)		
Health workers	120	42.0
Radio	101	35.3
Television	48	16.8
Friends	46	16.1
Family members	35	12.2
Social network	27	9.4
Print media	26	9.1
Lectures/ Seminar/ Outreaches	19	6.6
Factors that may increase the chances (risk) of getting cervical cancer** (n=286)		
Multiple sexual partners	79	27.6
Early onset of sexual intercourse (before 16years)	76	26.6
Family history of cervical cancer	60	21.0
HPV infection/ Genital warts	58	20.3
Smoking	36	12.6
HIV/ Other serious chronic diseases	27	9.4
Do not know	65	22.7
Symptom/ sign of cervical cancer** (n=286)		
Foul-smelling vaginal discharge	113	39.5
Vaginal bleeding after sexual intercourse	105	36.7
Weight loss	55	19.2
Do not know	98	34.3
Cervical cancer can be prevented (n=286)		
Yes	191	66.8
No	27	9.4

Do not know	68	23.8
Preventive measure** (n-286)		
Screening for cervical cancer	101	52.9
HPV vaccination	70	36.6
Being faithful to one sexual partner	58	30.4
Not having sexual intercourse until after adolescence	44	23.0
Use of antibiotics	33	17.3
Consistent use of a condom	16	8.4
Do not know	40	20.9

Table 2: The majority of the respondents had heard about cervical cancer, either from health workers or the media. Multiple sexual partners, early onset of sexual debut and family history of cervical cancer were the most common risk factors known by the respondents. Foul-smelling vaginal discharge and vaginal bleeding after sexual intercourse were the commonest symptoms recorded. Most of the respondents believed that cervical cancer is preventable; screening for cervical cancer and HPV vaccination were the most recorded preventive measures.

Multiple sexual partners (79%), early onset of sexual debut (76%) and family history of cervical cancer (60%) were the most common risk factors known by the respondents. One hundred and ninety-one (66.8%) of the respondents believed that cervical cancer is preventable; screening for cervical cancer (52.9%) and HPV vaccination (36.6%) were the most recorded preventive measures. In **Table 3,** the majority of the respondents, 215 (75.2%), had heard about cervical cancer screening. Among the 215 women who knew about cervical cancer screening, 36.3% and 31.6% of them had the knowledge that sexually active women and women above 20 years, respectively, should be screened.

Table 3:knowledge of cervical cancer screening and Uptake

Cervical Cancer Screening knowledge	No of Respondents	Percentage
Heard about cervical cancer screening (n=286)		
Yes	215	75.2
No	71	24.8
Sources of awareness/ knowledge** (n=215)		
Health workers	89	41.4
Radio	65	30.2
Television	38	17.7
Social network	33	15.3
Friends	32	14.9
Family members	27	12.6
Lectures/ Seminar/ Outreaches	24	11.2
Print media	19	8.8
Those to be screened for cancer (n=215)		
Sexually active women	78	36.3
Women above 20years	68	31.6
Married women only	17	7.9
Promiscuous women only	8	3.7
Do not know	44	20.5

Frequency of doing cervical screening (n=215)		
Once a year	56	26.0
Every 3years for women between 21-65years	48	22.3
Every 5years with HPV DNA testing	11	5.1
Do not know	100	46.5
Methods of cervical screening** (n=215)		
Pap smear	73	34.0
HPV testing	60	27.9
Visual inspection with acetic acid or Lugols iodine	39	18.1
Colposcopy	16	7.4
Do not know	73	34.0
Ever been screened for cervical cancer (n=215)		
Yes	77	35.8
No	138	64.2
Frequency of cervical cancer screening (n=77)		
Once	39	50.6
Twice	27	35.1
Three times or more	11	14.3
Time of last screening for cervical cancer (n=77)		
1year	33	42.9
2years	20	26.0
3years	16	20.8
More than 3years	8	10.4

Table 3: The Majority of the respondents had heard about cervical cancer screening, but had never been screened. Among the 215 women who knew about cervical cancer screening, some of them had the knowledge that sexually active women and women above 20 years respectively should be screened.

The majority (46.5%) did not know the frequency of screening. Pap smear (34%) and HPV testing (27.9%) were the most common methods known among the respondents. The majority (64.2%) of the women who heard about cervical cancer have never been screened. Among 77 (35.8%) women who had ever screened, 50.6% of them had been screened at least once, and 42.9% had screened in the past year. shows motivators towards cervical cancer screening among the respondents that has screened in the past. The majority (46.8%) believed that cervical screening was important, as seen in **Table 4**.

Table 4: Motivators and barriers of cervical cancer screening among the respondents

Motivators of Cervical Cancer Screening	No of Respondents (n=77)	Percentage
Reason for undergoing cervical cancer screening		
I thought it was important	36	46.8
I did the screening when I went for other medical Treatment	12	15.6
A family member/ friend has suffered from cervical Cancer	10	13.0
It was recommended by a healthcare practitioner	7	9.1
I did the screening during free outreach programs	9	11.7

The screening centre was close to my area	3	3.9
Reasons for not getting screened		
I do not know where to go for the screening	59	42.8
I do not think it was necessary	30	21.7
I do not think I am at risk of getting cervical cancer	16	11.6
Fear of being diagnosed with cancer	9	6.5
Fear of procedure	7	5.1
Cost of the procedure	7	5.1
I do not have time for the screening	6	4.3
I am too young to go for the screening	4	2.9

Table 4 showed that the majority believed that cervical screening was important, but did not know where to get screened. It also showed barriers towards cervical cancer screening.

There is no significant relationship between the demographic variables of the respondents and the uptake of cervical cancer screening (P>0.05) as shown in **Table 5**.

Table 5: Relationship between the socio-demographic variables and the level of uptake of the cervical cancer screening

Demographic Variables	Uptake of Cervical Screening No (n=317)	Yes (n=77)	$\chi 2$	P-value
Age (years)				
≤25	66 (76.7%)	20(23.3%)	1.446	0.485
26-35	200(82.3%)	43(17.7%)		
≥36		14(21.5%)		
51(78.5%)				
Marital Status				
With spouse	270(80.1%)	67(19.9%)	0.169	0.681
without	spouse	10(17.5%)		
47(82.5%)				
Religion				
Christianity	302(79.7%)	77(20.3%)	3.788*	0.050
Others**		0(0.0%)		
15(100%)				
Occupation				
Unemployed	38 (77.6%)	11(22.4%)	0.429	0.807
Govt employed	91(82%)	20(18.0%)		
Self-employed	188(80.3%)	46(19.7%)		
Educational Status				
≤Primary	22 (78.6%)	6 (21.4%)	2.087	0.352
Secondary	114(77.0%)	34(23.0%)		
Post-secondary	181(83.0%)	37(17.0%)		
Number of Children				
0	96 (85.0%)	17(15.0%)	5.016	0.081
1-3	198(80.2%)	49(19.8%)		
Above 3	23 (67.6%)	11(32.4%)		

There is no significant relationship between the demographic variables of the respondents and the uptake of cervical cancer screening (P>0.05), as well as willingness to undergo screening.

Discussion

Cervical cancer is the most common genital cancer in Nigeria and the major cause of cancer-related morbidity and mortality among women.[1,2] This study shows that the majority of the women attending the antenatal clinic in Mater Misericordiae hospital Afikpo, were aware of cancer of the cervix and cervical screening. This is comparable to findings in a similar study conducted by Idowu et al that recorded a high number of respondents with knowledge of cervical cancer and screening.[7] The high number of respondents with cervical cancer awareness is also seen in other studies in Nigeria.[12,13]The finding in this study may be associated with the greater number of respondents with secondary and tertiary levels of education who have an increased opportunity to listen to electronic media where information on cervical cancer is likely to be heard. Health workers, radio and television formed the major source of awareness to the respondents as seen from this study.

This study shows that a greater proportion of women who were aware of cervical cancer were aware of cervical cancer screening. However, the high index of cervical screening awareness did not translate to increased uptake. The result shows that only a few of the respondents who knew about cervical screening had ever undergone screening. This poor uptake is comparable to other studies in the country.[12,14-16] The low uptake noted in this study and generally in many studies in Nigeria underscores the lack of a standard cervical cancer screening protocol and policy as opposed to what is obtainable in developed countries with well-organized cervical cancer screening programs and with associated low incidence of cervical cancer.[1,5]

Other barriers as identified in this study were: not knowing where to go for the screening, poor perception of the necessity of the screening, and many others did not see themselves at risk for cervical cancer. These were similar to findings by Urom et al.[15] Not knowing where to access the cervical screening services was the most important barrier to cervical screening in this study. This is not surprising as cervical cancer screening in many developing countries, including Nigeria, has remained opportunistic and sporadic, with most of the screening centers located in the urban centers where facilities and personnel are available. Another major barrier to cervical screening uptake is a lack of awareness about cervical cancer screening. It was observed in this study that 24.8% of the respondents who knew about cancer of the cervix did not know about cervical cancer screening, and a high proportion of the women also did not know any type of cervical screening method. Similar findings are seen in other studies where these factors contributed significantly to barriers to screening.[6,7,15,17,18] Other barriers to the uptake of cervical cancer screening reported by the respondents were fear of the procedure, cost of the procedure and lack of time for the procedure. Fear of being diagnosed with cancer was noted to be a barrier in 6.5% of the women who had never undergone cervical cancer screening, contrary to the study by Okunowo et al were this factor acted as a motivator to uptake of cervical screening in 10.5% of the women.[17] However, it was noted that the majority of the women who had never screened were willing to undertake cervical screening in the future. From this study, 46.8% of the women who had undergone cervical cancer screening knew the importance of it. This was the greatest motivator identified in the study. Many other women in this study did the screening when they went for other medical attention. This portrays the sporadic pattern of cervical screening in Nigeria, and until a standard protocol for cervical screening becomes effective, health care practitioners are encouraged to recommend and counsel about cervical screening to their eligible clients at any given opportunity. As was noted in this study and in a similar study, where recommendation by healthcare practitioners (doctors and nurses) were the most important motivator towards uptake of cervical screening.[17] The reason for this finding directly relates to the fact that the hospital is the most important and major place patients come in contact with health personnel, listen to health talks, and more so, they tend to heed the advice of their doctors and are likely to comply with their recommendations.

Another important motivator towards uptake of cervical screening is the influence of family members and friends. Friends and family play a vital role in creating awareness about cervical screening, as was seen in this and other studies. [6,8,14,17-19] They also play a crucial role in the uptake. This is particularly important in Igbo culture, where a high premium is placed on advice and support from fellow womenfolk and relatives who have done cervical screening, managed a pre-malignant lesion or suffered cancer of the cervix encourage another person who was unwilling to undergo screening. These friends and family impacts were also noted in other similar studies in the country. [20,21]

The cost of undergoing screening for cervical cancer was identified as a factor that could either motivate or act as a barrier towards the uptake. This study showed that 11.7% of the respondents did the cervical screening during free outreach programs. Importantly, this may be related to the free cost of the procedure and the closeness of the screening facility to the respondents during the free medical outreaches. Inability to afford the cost prevented some of the respondents in this study that have heard of cervical cancer from screening for cervical cancer. These findings are similar to those reported in other studies.[7,8,17] It is therefore pertinent that the cost of cervical cancer screening be made free or at least subsidized by the government so as to encourage many willing women to undergo screening.

This study showed that there was a significant relationship between the number of children had by the respondents and the level of uptake of the cervical screening ($p< 0.05$). From the result, the women who had more than 3 children are 2.7 times more likely to undergo cervical screening than those who had no children (OR= 2.7, 95% C.I 1.115- 6.540). This finding is comparable to the study by Mbachu et al, where it was found that women who had 3-4 children were 4.99 times more likely to have screened for cervical cancer than those who did not have any children.

Surprisingly, this study shows that among the women who undertook cervical screening, there is no significant relationship between the educational status of the respondents and the uptake of cervical screening ($P>0.05$). The result is comparable to other findings in the studies by Urom et al. [21], Okunowo et al [17], and Rimande-Joel et al [20], where the majority of the respondents had formal education, but the rates of cervical screening uptake were low. This is contrary to the study by

From the study, those who were government-employed were 6.5 times less likely to have a willingness to undergo cervical screening in the future (AOR = 0.154, 95% C.I of AOR= 0.026-0.901) than the unemployed. This finding was similar to findings by Mbachu et al and Ilevbare et al. [22, 23]

Conclusion

The majority of the women attending the antenatal clinic in Mater Misericordiae Hospital, despite demonstrating good knowledge of cervical cancer, had poor uptake of cervical cancer screening. Knowing the importance of cervical screening, utilizing the opportunity to get free screening will be of great importance in reducing the scourge of cervical cancer.

Conflict of interest

The authors declare no conflict of interest

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