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Determinants of cervical cancer screening uptake among women attending selected family planning clinics in Ibadan, Oyo state, Nigeria

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ABSTRACT

Background: Cervical cancer screening (CCS) continuously has low awareness and is poorly utilized in developing countries despite higher incidence of cervical cancer (CC). Increasing incidence of CC has been associated with late reporting of symptoms, ignorance about the disease, and its preventive measures. This study was conducted to further investigate the determinants of CCS uptake among women attending selected family planning clinics in Ibadan, Nigeria.

Materials and Methods: Adopting a cross-sectional design, 205 consenting respondents attending family planning clinics were interviewed using an interviewer-administered questionnaire. The data collected were analyzed using Statistical Package for the Social Sciences version 21. The hypotheses were tested using Chi-square, odds ratio, and logistic regression at $P < 0.05$.

Results: The mean age of the respondents was 33 ± 8 years; 176 (85.9%) were married and 72 (35.1%) had tertiary education. Although 71% of the respondents were aware of CC, only 37.1% had good knowledge and 16.1% had previously utilized CCS. About two-thirds (68.8%) of the respondents were willing to uptake CCS, except for perceived barriers such as lack of understanding of the disease and inadequate information about the services coupled with limited availability of the CCS services. There was a significant association between uptake of CCS and knowledge ($\chi^2 = 17.944, P < 0.001$), education ($\chi^2 = 7.724, P < 0.024$), and income ($\chi^2 = 32.22, P < 0.001$). On logistic regression, the uptake CCS remained influenced mainly by income of $>40,000$ Naira (OR = 5.355, CI = 1.678–17.083) and knowledge (OR = 3.112, CI = 1.247–7.768).

Conclusion: Family planning clinics are readily available centers for increasing the knowledge base of the women on the need for regular CCS. This needs to be duly incorporated into our routine services.

Keywords: Cervical cancer, family planning, knowledge, screening, uptake

Introduction

Cervical cancer (CC) constitutes a major public health threat to women in many low- and medium-resourced countries.^[1] It continues to cause extreme distress and anxiety for patients and their families and continuously posing challenging clinical problems.^[2] Worldwide, over 85% of CC deaths occur yearly in developing countries.^[3] In 2017, over 300,000 deaths and above

500,000 new cases were recorded with most of the deaths occurring among young mothers.^[4]

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In Nigeria, approximately 10,000 women have developed CC and about 8,000 women die from this disease each year.^[5] Poor knowledge of CC and cervical cancer screening (CCS) programs as well as poor health seeking behavior has been documented as part of the factors which result in poor utilization of the screening services.^[5,6]

Cervical cancer (CC) is a preventable and curable disease through effective screening programs.^[7] Uptake of the CCS has remained very low in Nigeria, whereas the mortality and morbidity associated with CC has remained high.^[8] This could be partly due to the lack of appropriate health-care resources to sustain the programs^[9] or due to very low awareness as well as lack of established screening programs in the country.^[8]

However, it has been observed that women in developing countries like Nigeria tend to utilize health facilities for antenatal care and family planning or when faced with various gynecological problems, thus creating a gap of opportunity for ensuring that they are enlightened and screened in order to reduce incidence of CC.^[8] Therefore, this study is set to study the determinants of CCS uptake among women attending selected family planning clinics in Ibadan, Oyo State.

Materials and Methods

This study adopted a cross-sectional design to investigate the determinants of CCS uptake among women attending selected family planning clinics in Ibadan, Oyo State. The study was conducted in family planning units of three selected primary and one secondary health-care centers in Ibadan, Oyo State, Nigeria, with good clientele. The facilities were Adeoyo Maternity Teaching Hospital, Bashorun Primary Health Centre, Agbongbon Primary Health Center, and Idi Ogungun Health Centre.

The populations for this study were women of childbearing age (15–49 years), attending family planning clinic in the selected health facilities in Ibadan. The facilities had an average of 395 reproductive aged women attending family planning clinic distributed as follows: Agbongbon Health Centre, 70; Bashorun Primary Health Care Centre, 50; Idi Ogungun Primary Health Care, 45; and Adeoyo Maternity Hospital Ibadan, 230.

A structured questionnaire that comprised open- and closed-ended questions was used for data collection. The reliability of the instrument was tested using Cronbach's alpha. The reliability coefficient (r) was = 0.7. Following ethical approval by the Oyo State Ethics Committee, data were

collected from the four selected health facilities after duly obtaining an informed consent from each of the respondents.

Retrieved data were sorted, coded, and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21.0 (IBM Inc, Armonk, New York, USA). Frequency and percentages were used to present descriptive data in line with the objectives. Knowledge was categorized into good and poor using average score of 50% on 16 items scale; thus, 0–8 was poor knowledge and 9 and above was good knowledge level. Awareness, willingness to utilize, and previous uptake of CCS services were answered categorically. Hypotheses were tested using Chi-square statistics for categorical data, whereas logistic regression was used to measure the strength of influence of the significant variables, setting level of statistical significance at 5%.

Results

Of the 395 women attending the family planning clinics, 205 satisfactorily responded to the study questions and were found to have provided data that are suitable for analysis. The sociodemographic characteristics of the respondents are presented in Table 1, showing the mean age of the respondents to be 33 ± 8 years. Majority, 176 (85.9%), of the respondents were married and 136 (66.3%) had minimum of secondary education. Although 168 (81.9%) of the respondents have at least one form of employment, above half, 105 (51.2%), of all the respondents earn below 20,000 Naira (USD54) in a month with majority, 147 (71.7%), earning below 40,000 (USD108).

Table 1: Respondents' sociodemographic characteristics (n=205)

Variables	Frequency (%)
Age	
15-24	31 (15.1)
25-34	78 (38)
35-44	71 (34.6)
≥45	25 (12.2)
Mean age (years)	33±8
Marital status	
Single	23 (11.2)
Married	176 (85.9)
Divorced/separated	2 (1.0)
Widow	4 (2.0)
Highest level of education	
Primary school and below	16 (7.8)
Secondary school	64 (31.2)
Tertiary	125 (61.0)
Employment status	
Employed (formal)	87 (42.4)
Self-employed	81 (39.5)
Unemployed/students	37 (18.1)
Monthly Income/month (N370=1USD): < N20000	32 (15.6)

More than two-thirds of the respondents, 145 (71%), had ever heard about CC, with the media platforms (radio and television) being the most common source of information (36.6%) followed by the health-care providers. Most respondents, 129 (62.9%), have poor knowledge of the disease and the screening process. Furthermore, a total of 141 (68.8%) were willing to uptake CCS services, 17.1% were not sure, and only 14.1% were not willing to be screened. On the other hand, only 33 (16.1%) of the respondents had ever utilized CCS services, while majority, 172 (83.9%), had never been screened for CC [Table 2]. The uptake of CCS among the women in this study can be seen as very low.

The common barriers to uptake of CCS presented in Table 3 were lack of understanding of the disease condition in 51.7% and lack of information about CC in 39.5%. Other barriers had to do with lack of access to the CCS as 37.1% claimed the services were unavailable in their local health facilities, while 35.1% identified long distance to appropriate health facility with screening services as their main challenge.

The association between the participants' selected variables and uptake of CCS is presented in Table 4, showing significant association between income. The study showed a statistically significant association between the knowledge of CC and uptake of CCS services ($\chi^2 = 17.944$, $P 0.001$) on Table 4.

The strength of association as determined by regression analysis is shown in Table 5. It showed that respondents who earn above 40000 (USD104) were 5 times more likely to be screened for CC compared to those who earned <20,000 (USD54) (OR = 5.355, CI = 1.678–17.083). In addition, the level of knowledge about of CC is highly associated with uptake as those with good knowledge were 3 times more likely to be screened (OR = 3.112, CI (2.3–11.61).

Table 2: Respondents' knowledge of cervical cancer and uptake of screening services

Variables	Frequency (%)
Aware of cervical cancer	
Yes	145 (71)
No	60 (29)
Level of knowledge of cervical cancer	
Good	76 (37.1)
Poor	129 (62.9)
Ever had cervical cancer screening	
Yes	33 (16.1)
No	172 (83.9)
Willingness to uptake CCS	
Yes	141 (68.8)
No	29 (14.1)
Not sure	35 (17.1)

CCS - Cervical cancer screening

Discussion

Awareness of CC was good as findings revealed that most of the respondents have heard about CC and most of them heard from media and health workers. Although most of them had poor level of knowledge and screening uptake was quite poor, majority expressed the willingness to utilize screening services. These findings differ with that of Singh *et al.*, in Delhi, which reported that 85.1% of their study participants were aware of CC but were in agreement with those willing to uptake CCS.^[10] Similarly, Patra *et al.* in 2017 on awareness of CC and willingness to participate in CCS among an urban resettlement colony of Delhi, India, reported that half of the study population was aware of CC, but only a quarter was willing to participate in CCS.^[11] A similar study in Eastern China by Dhaher (2019) indicated that only 43% of their participants were aware of CC and their primary source of information was the social media.^[12] Mruts and Gebremariam also reported that 40.5% of their participants had heard of CC, but only 35.6% had good knowledge toward CC and of the study participants.^[13]

On the contrary, a recent community-based study conducted in Lagos, Nigeria, showed very low awareness as only 12.8% had ever heard about CC.^[14] Knowledge of CC and screening uptake (0.7%) were equally poor although majority of the participants were willing to undergo screening.^[14] Similarly, in a study conducted among antenatal attendees, Ndikom *et al.* had reported that awareness of CC was quite low as 84.4% of the respondents had never heard of CC and uptake of CCS was only 2.1%.^[15] However, Fasanu *et al.* (2014) in a study among health workers in South Western Nigeria found out that 4 out of every 5 of the health workers were aware of CC, but about two-thirds had poor knowledge and only 10% of the health workers had ever done Pap smear. In another study by Idowu *et al.*, it was reported that about three quarters of their study population claimed to be aware of CC out of which 92% demonstrated poor knowledge on the disease.^[16] Another study conducted by Ingwu on knowledge and screening practices of CC among pregnant women attending antenatal clinic in tertiary hospitals in Enugu South-Eastern Nigeria revealed poor knowledge of CC among pregnant women and only 39.5% identified pap smear as a form of screening test.^[17]

There was low awareness of CC which is majorly due to lack of understanding and lack of information on CC among the respondents in this study. The other major barrier is lack of access to the CCS facilities. According to Ndikom *et al.*, 2017, over 53.5% of respondents said that unavailability of

Table 3: Perceived barriers to uptake of cervical cancer screening

Uptake perceived barriers	Yes (%)	No (%)	Don't know (%)	No response (%)
Little understanding of cervical cancer	106 (51.7)	62 (30.2)	4 (2)	33 (16.1)
Cervical cancer screening is painful	75 (36.6)	86 (42)	11 (5.4)	33 (16.1)
Fear of vaginal examination	76 (37.1)	87 (42.4)	9 (4.4)	33 (16.1)
Lack of husband/partner approval	46 (22.4)	119 (58)	7 (3.4)	33 (16.1)
Not allowed by religion/culture	29 (14.1)	136 (66.3)	7 (3.4)	33 (16.1)
Lack of female screeners at the health facility	38 (18.5)	126 (61.5)	8 (3.9)	33 (16.1)
Attitude of health workers	47 (22.9)	118 (57.6)	7 (3.4)	33 (16.1)
The screening is expensive	65 (31.7)	98 (47.8)	9 (4.4)	33 (16.1)
Not offered at the nearest health facility	76 (37.1)	87 (42.9)	8 (3.9)	33 (16.1)
Long distance to a health facility	72 (35.1)	91 (44.1)	9 (4.4)	33 (16.1)
Lack of information about cervical cancer	81 (39.5)	86 (42.4)	4 (2.0)	33 (16.1)

Table 4: Associations between selected variables and uptake

	Uptake of cervical cancer screening			χ^2	df	P
	No (%)	Yes (%)	Total			
Marital status						
Single	23 (100)	0 (0.0)	23 (100)	5.597	3	0.133
Married	144 (81.8)	32 (18.2)	176 (100)			
Divorced/separated	2 (100)	0 (0.0)	2 (100)			
Widow	3 (75)	1 (25)	4 (100)			
Total	172 (83.9)	33 (16.1)	205 (100)			
Educational level						
Primary or below	15 (93.8)	1 (6.3)	16 (100)	11.987	2	0.002
Secondary	61 (95.3)	3 (4.7)	64 (100)			
Tertiary	96 (76.8)	29 (23.2)	125 (100)			
Total	172 (83.9)	33 (16.1)	205 (100)			
Number of children						
1-2	81 (81.0)	19 (19.0)	100 (100)	4.327	2	0.115
3-4	62 (82.7)	13 (17.3)	75 (100)			
5 or more	29 (96.7)	1 (3.3)	30 (100)			
Total	172 (83.9)	33 (16.1)	205 (100)			
Monthly income						
<N20,000.00	101 (96.2)	4 (3.8)	105 (100)	32.220	2	0.000
N20,000.00-N40,000.00	35 (83.3)	7 (16.7)	42 (100)			
>N40,000.00	36 (62.1)	22 (37.9)	58 (100)			
Total	172 (83.9)	33 (16.1)	205 (100)			
Knowledge level						
Poor	119 (92.2)	10 (7.8)	129 (100)	17.944	1	0.000
Good	53 (69.7)	23 (30.3)	76 (100)			
Total	172 (83.9)	33 (16.1)	205 (100)			

services was a major hindrance to their screening uptake.^[18] Oluwole *et al.* also documented that the low uptake could also be due to nonavailability of screening services in the rural areas of the state and the poor knowledge of people about CC and its prevention.^[8] It could be seen that even though this is a health facility-based study, women did not receive adequate information. The situation is worse in various community-based studies.

It is important to note that this study, in tandem with most of the previous studies, also confirmed that most respondents were willing to utilize CCS even though uptake

as remained very low. An explanation could be from the positive association found between respondents' income and uptake of the screening, which indicated that the lower income status of most women in the developing countries plays a strong role in achieving the desired uptake for CCS. Only 3.8% of the respondents in the category of income <N20,000 had ever been screened for CC.

Major factors associated with uptake of CCS were income, educational level, and knowledge. These three factors are linked together as a woman's socioeconomic status is linked to their access to information and services

Table 5: Regression analysis showing influence on variables on uptake of cervical cancer screening screening

Variable	OR	SE	P	95% CI
Monthly income (N)				
< 20,000	1.000			
20,000-40,000	3.360	0.627	0.053	0.983-11.487
> 40,000	5.355	0.592	0.011	1.678-17.083
Educational level				
Primary	1.000			
Secondary	1.095	1.228	0.941	0.099-12.163
Tertiary	1.606	1.141	0.678	0.172-15.026
Knowledge level				
Poor	1.000			
Good	3.112	0.467	0.015	1.247-7.768

OR - Odds ratio, SE - Standard error, CI - Confidence interval

in many cases. Most participants in this study had heard about CCS, but have no understanding of what CC.

Designing effective and prompt intervention initiatives that could promote the interest of childbearing age women in both health facilities and at community levels toward CCS is quite crucial. Women need to be provided with detailed information and be encouraged to have CCS. There is an urgent need to review the cost implication of CCS if we are serious about achieving large coverage for CC control. It has become imperative for governments in developing countries to have programs that will focus on strengthening and supporting the health-care centers and other stakeholders in promoting the CCS campaign.

There should be more public service announcements on the radio or television encouraging childbearing age women on CC prevention. Finally, concerted efforts should be made to incorporate CCS information and services into family planning programs to increase access as expected of full reproductive health service points globally.

Ethical Approval Statement

The research protocol was approved by the Ethics Committee of the Oyo State, Nigeria Ministry of Health with reference no. AD 13/479/1149. Following the Ethical Approval the participants were appropriately informed about the procedure involved in the implementation of the study. The study was carried out with utmost confidentiality as information from respondents were not disclosed to others. Participation in the study was voluntary. Written informed consent was obtained from participants using informed consent forms which were duly signed by participants. They were also informed of their right to withdraw from the study at any stage if they so wish.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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