Original Research Article

Knowledge, perception, and uptake of cervical cancer screening among women attending antenatal clinic at a tertiary hospital in north eastern Nigeria

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ABSTRACT

Background: This study assessed the knowledge, perception, and uptake of cervical cancer screening among women attending the antenatal clinic in Modibbo Adama University Teaching Hospital Yola, Nigeria.
Methods: This was a cross-sectional study among 141 ante-natal clinic clients where data was collected using an interviewer-administered questionnaire. Data collected were analyzed using the IBM SPSS software. Multivariable logistic regression was used to determine the predictors of the uptake of cervical cancer screening. A p value of <0.05 was considered statistically significant.
Results: Thirty-six (25.5%) respondents had good knowledge of cervical cancer screening, 12 (9%) had a positive perception of cervical cancer screening, and 14 (9.9%) had previously undergone screening. Health worker request was the major reason for undertaking screening while lack of awareness of the screening was the chief reason for not screening previously. Multivariable logistic regression showed knowledge to be the only predictor of the uptake of cervical cancer screening, respondents with good knowledge were about six times more likely (AOR: 5.97, 95% CI: 1.57-22.66, p=0.009) to have ever been screened.
Conclusions: The predominantly poor knowledge, negative perception, and poor uptake of cervical cancer screening in this study suggest the need to improve clients' education to boost the uptake of screening services.

Keywords: Antenatal clinic, Cervical cancer screening, Knowledge, Perception, Uptake

INTRODUCTION

Cervical cancer is a highly preventable, treatable, and curable condition if detected at an early stage.[1] It is the fourth most common cancer and cause of death in women, worldwide, while sub-Saharan Africa (SSA) is the region with the highest incidence and mortality rates, as it is home to over 90% of the countries with high cervical cancer incidence (>25 cases per 100 000 women-years).[1,2] Unlike other regions of the world, it is forecasted that SSA is not capable of achieving the cervical cancer elimination target (four or fewer cases per 100,000 women-years) through human papillomavirus (HPV) vaccination alone. Screening is required to complement vaccination in SSA if the region must achieve elimination, it can prevent an additional 4·6 million cervical cancer cases between 2020 to 2060.[2]

Though most regions of the world have recorded a remarkable decline in the number of new cases of cervical cancer over the past few decades, a feat owed majorly to widespread screening coverage, SSA, conversely,

recorded a rise in incidence due to the absence of effective screening programmes, poor awareness, and poor access to healthcare services, among other factors.[3] This trend of the rising incidence of cervical cancer in SSA may continue unabated into the next couple of decades if the status quo of poor screening access and uptake is not remedied through the scaling up of the screening services.[4]

Despite the recognition of screening as one of the strategies for eliminating cervical cancer, through early detection and prompt treatment of treatable precancerous conditions, there is generally a poor uptake of cervical cancer screening in low and middle-income countries (LMICs). Only about 44% of women in LMICs have ever been screened, on average it is 17% in SSA, which is the lowest among the regions comprising LMICs.[5] The poor uptake of cervical cancer screening services has been attributable to fear of positive results, low-risk perception, lack of awareness, and concerns bordering on violations of religious and cultural obligations of modesty during screening procedures.[6,7]

Literature from the study area that contributes to the understanding of the uptake of cervical cancer screening is insufficient, hence we attempted to fill this gap by assessing the knowledge, perception, and uptake of cervical cancer screening among women attending antenatal clinics (ANCs) at a tertiary health facility in Yola, Nigeria. Our findings may provide evidence useful for informing interventions that can scale up cervical cancer screening in the study area.

METHODS

Study area

The study was carried out in Modibbo Adama University Teaching Hospital (MAUTH) situated in Yola metropolis of Adamawa State, North-Eastern Nigeria, the only tertiary hospital and largest health facility in the state. In MAUTH, the department of obstetrics and gynecology (OBGYN) runs ANCs on three days of the week (Mondays, Tuesdays and Thursdays). On average the facility sees about 1600 ANC clients annually. The facility for cervical cancer screening is at the gynecological emergency unit and is manned by a resident doctor and nurses, it has a capacity for Papanicolaou test and visual inspection with iodine and acetic acid.

Study population

The study was conducted among clients on ANC follow-up visits aged 18 years and above. Clients presenting with emergency obstetric conditions were excluded.

Study design

A clinic-based cross-sectional study among randomly selected ANC attendees. The study instrument was a pretested interviewer-administered questionnaire comprising the following sections: socio-demographic information, knowledge of cervical cancer screening, perception of cervical cancer screening, and uptake of cervical cancer screening.

Knowledge was assessed using 12-item multiple choice questions, perception was assessed using a 10-item 5-point Likert response scale, while uptake was assessed using this statement- "have you ever done a Pap test before?".

Sample size determination

The minimum sample size (n) was determined using the formula for determining the sample size for cross-sectional study ($n=Z_\alpha^2pq/d^2$), where Z_α is the standard normal deviate at a 95% confidence level (1.96), p is the proportion of the target population estimated to have undergone cervical cancer screening (9.4%) which was extrapolated from the findings a previous study, q (0.906) is 1-p, d is the desired level of precision set at 5% (0.05).[8,9] Taking into account a 10% non-response rate, the sample size was 144.

Statistical analysis

Data were analyzed using the IBM-SPSS software. A correct response to the knowledge questions was scored 1 while 0 was given for an incorrect response. Perception scoring was done as follows: strongly agree =5, agree =4, not sure =3, disagree =2, and strongly disagree =1. The total score for knowledge was calculated as the sum of scores for each of the 12 items in the knowledge section with a maximum obtainable score of 12. The total score for the perception was calculated as the sum of scores for the 10 items in the perception section with a maximum obtainable score of 50.

In categorizing the total knowledge scores, a score of ≥6 corresponding to at least 50% of the maximum obtainable score was categorized as good knowledge and <6 as poor knowledge. For the total perception score, a score equivalent to ≥80% (≥40), corresponding to a minimum score of 4 (agree) per item, was categorized as positive perception and <80% (<40) as negative perception. Uptake of cervical cancer screening was defined as responding "yes" to the question- "have you ever done a Pap test before?"

Chi-square test followed by a multivariable logistic regression for variables found statistically significant in the Chi-square test was used to determine the predictors of the uptake of cervical cancer screening. A p value of <0.05 was considered statistically significant.

RESULTS

One hundred and forty-one (141) respondents completed the interviews giving a response rate of 98%.

Table 1: Sociodemographic characteristics of the study respondents (n=141).

Variables	Frequency	%
Age group (years)		
18-24	27	19.1
25-34	87	61.8
35-44	27	19.1
Mean age ±SD	29.4±6.0 years	
Marital status		
Currently married	121	85.8
Not currently married*	20	14.2
Ethnicity		
Adamawa indigenous tribe	105	74.5
Non-Adamawa indigenous tribe	36	25.5
Employment status		
Employed	92	65.2
Unemployed	49	34.8
Educational qualification		
No formal education	8	5.7
Primary	10	7.1
Secondary	36	25.5
Tertiary	87	61.7
Monthly income		
<N30,000	102	72.3
≥N30,000	39	27.7
Family setting		
Monogamous	101	71.6
Polygamous	40	28.4
Place of residence		
Urban area	126	89.4
Rural area	15	10.6

SD = Standard Deviation, * Single, divorced, separated, + Bajju, Ebira, Hausa, Igbo, Isoko, Kanuri, Yoruba, Shuwa

Table 2: Gynecological history of the study respondents (n=141).

| Variable	Frequency	%
Parity		
Nullipara	36	25.5
Primipara	33	23.5
Multipara	56	39.7
Grand multipara	16	11.3
Gravidity		
Primigravida	35	24.8
Multigravida	75	53.2
Grand multigravida	31	22.0
Age at sexual debut		
<18 years	21	14.9
≥18 years	120	85.1
Mean age at sexual debut ±SD	21.5±4.2 years	
Family history of cervical cancer		
Yes	15	10.6
No	126	89.4

The age of the study respondents ranged from 18-44 years with a mean of 29.4±6.0 years. One hundred and twenty-one (85.8%) were currently married, 102 (72.3%) earned less than N30,000 monthly, 87 (61.7%) had tertiary level education, and 126 (89.4%) resided in an urban area (Table 1).

Thirty-six (25.5%) respondents were nulliparous, 35 (24.8%) were primigravidae, and 15 (10.6%) had a family history of cervical cancer (Table 2).

Table 3: Knowledge of cervical cancer screening among study respondents (n=141).

Variables	Frequency	%
Ever heard of the Pap test		
Yes	76	53.9
No	65	46.1
Source of information (n=76)		
Health worker	37	48.7
Mass media	15	19.7
Family/friends	14	18.4
Social media/internet	7	9.3
School	3	3.9
Knows where Pap test is done		
Yes	43	30.5
No	98	69.5
Knowledge level		
Good	36	25.5
Poor	105	74.5

Seventy-six (53.9%) respondents had heard of the Pap test before, and health workers were the most common source of information- 37 (48.7%). Forty-three (30.5%) respondents knew where Pap test was conducted, while 36 (25.5%) had a good level of knowledge of cervical cancer screening (Table 3).
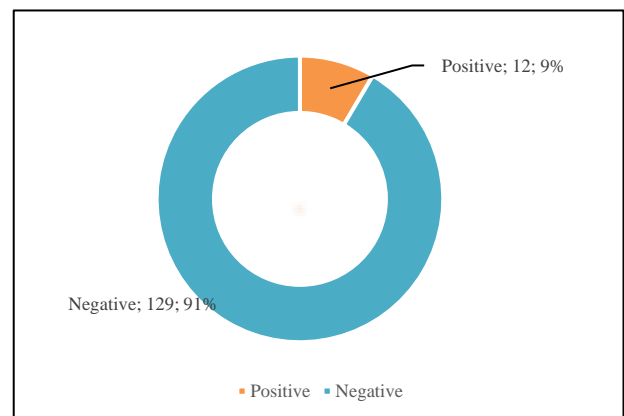
Figure 1: Perception of cervical cancer screening among study respondents (n=141).

Twelve (9%) respondents had a positive perception towards cervical cancer screening (Figure 1).

Table 4: Uptake of Pap test among study respondents (n = 141).

Variables	Frequency	%
Ever done a Pap test		
Yes	14	9.9
No	127	90.1
Reason for doing Pap test (n=14)		
Requested by health worker	8	57.1
Part of a general check-up	6	42.9
Major reason for not doing Pap test (n=127)		
Not aware of the test	70	55.1
Not requested by a health worker	18	14.2
I am healthy	17	13.4
Didn't think about the test	7	5.5
I have no symptoms	6	4.7
Don't where the test is done	6	4.7
Fear of the result/outcome	2	1.6
Fear of the procedure	1	0.8

Table 5: Bivariate analysis of factors associated with the uptake of Pap test.

Variables	Uptake of Pap test No (n=127) f (%)	Yes (n=14) f (%)	χ^2	df	P value
Age group (years)					
18-24	26 (96.3)	1 (3.7)			
25-34	79 (90.8)	8 (9.2)	3.380+	2	0.221
35-44	22 (81.5)	5 (18.5)			
Marital status					
Not currently married#	19 (95.0)	1 (5.0)	0.633+	1	0.692
Currently married	108 (89.3)	13 (10.7)			
Ethnicity					
Adamawa Indigenous Tribe	94 (89.5)	11 (10.5)	0.138+	1	1.000
Non-Adamawa Indigenous Tribe	33 (91.7)	3 (8.3)			
Employment status					
Employed	79 (85.9)	13 (14.1)	5.225+	1	0.035*
Unemployed	48 (98.0)	1 (2.0)			
Educational Qualification					
No formal education	8 (100.0)	0 (0.0)			
Primary	10 (100.0)	0 (0.0)	8.716+	3	0.037*
Secondary	35 (97.2)	1 (2.8)			
Tertiary	74 (85.1)	13 (14.9)			
Income					
< N30,000	94 (92.2)	8 (7.8)	1.794+	1	0.211
≥ N30,000	33 (84.6)	6 (15.4)			
Family setting					
Monogamous	90 (89.1)	11 (10.9)	0.368+	1	0.757
Polygamous	37 (92.5)	3 (7.5)			
Place of residence					
Urban area	114 (90.5)	12 (9.5)	0.218+	1	0.646
Rural area	13 (86.7)	2 (13.3)			
Family history of cervical cancer					
Yes	14 (93.3)	1 (6.7)	0.200+	1	1.000
No	113 (89.7)	13 (10.3)			
Parity					
Nullipara	34 (94.4)	2 (5.6)	5.497+	3	0.204
Primipara	29 (87.9)	4 (12.1)			

Variables	Uptake of Pap test No (n=127) f (%)	Yes (n=14) f (%)	χ^2	df	P value
Multipara	52 (92.9)	4 (7.1)			
Grand multipara	12 (75.0)	4 (25.0)			
Gravidity					
Primigravida	33 (94.3)	2 (5.7)			
Multigravida	67 (89.3)	8 (10.7)	1.136+	2	0.567
Grand multigravida	27 (87.1)	4 (12.9)			
Age at sexual debut					
<18 years	21 (100.0)	0 (0.0)			
≥18 years	106 (88.3)	14 (11.7)	2.720+	1	0.129
Knowledge of cervical cancer screening					
Poor	101 (96.2)	4 (3.8)			
Good	26 (72.2)	10 (27.8)	17.221+	1	<0.0001*
Perception of cervical cancer screening					
Negative	119 (92.2)	10 (7.8)			
Positive	8 (66.7)	4 (33.3)	8.034+	1	0.019*

+Corrected chi-square, #single, divorced, separated, *statistically significant.

Fourteen (9.9%) respondents had undergone a Pap test in the past, out of whom 8 (57.1%) cited a health worker's request as the reason for undergoing the test. Out of the 127 (90.1%) respondents who had never undergone a Pap test, 70 (55.1%) reported not being aware of the test as the major reason for not doing the test previously (Table 4).

As shown in Table 5, bivariate analysis found a statistically significant association between the uptake of Pap test and employment status (χ^2=5.225, p=0.035), educational level (χ^2=8.716, p=0.037), knowledge of cervical cancer screening (χ^2=17.221, p<0.0001), and perception of cervical cancer screening (χ^2=8.034, p=0.019).

Table 6: Multivariable logistic regression for factors associated with the uptake of Pap test.

Variable	AOR (95% CI)	P value
Educational level		
Tertiary	5.71 (0.67-48.59)	0.110
Below tertiary	1	
Employment status		
Employed	2.57 (0.28-23.61)	0.405
Unemployed	1	
Knowledge of Pap test		
Good	5.97 (1.57-22.66)	0.009*
Poor	1	
Perception of Pap test		
Positive	2.51 (0.56-11.33)	0.230
Negative	1	

*Statistically significant, AOR = adjusted odds ratio, CI = confidence interval

Multivariable logistic regression showed knowledge of the Pap test to be a predictor of the uptake of the test. Respondents with a good level of knowledge of cervical cancer screening were about six times (AOR=5.97, 95% CI =1.57-22.66, p=0.009) more likely to have previously undergone a Pap test (Table 6).

DISCUSSION

This study assessed the knowledge, perception, and uptake of cervical cancer screening among ANC attendees at a tertiary hospital in north eastern Nigeria.

Similar to findings from previous studies, majority of the respondents in this study demonstrated a poor knowledge of cervical cancer screening.[10] The low level of knowledge of cervical cancer screening among the respondents may be attributable to their predominantly low-income status, as low socioeconomic status is associated with poor health literacy.[11] In contrast, other studies revealed relatively higher levels of knowledge of cervical cancer screening, the variation in findings may be related to differences in the selection methods where those studies employed non-random techniques giving room for selection bias in favour of more enlightened respondents.[12,13] Poor knowledge of cervical cancer screening among women can negatively impact the willingness of these individuals to utilize the services when offered as they may not adequately appreciate its usefulness.

In contrast to previous evidence, and similar to other studies, few of the respondents in this study had a positive perception towards cervical cancer screening which is in keeping with the low level of knowledge found among the respondents.[10,14,15] In keeping with the health belief model, the predominant negative perception of the respondents towards the usefulness of cervical cancer screening may weaken their intention to access the services and result in the underutilization of such services.[16]

Despite the benefit of Pap tests to avert more than 90% of cervical cancer cases, only one-tenth of the women in this study had previously undergone the test.[17] This very low

level of uptake aligns with previous findings.[18-20] Nonetheless, a study in Zaria, Nigeria revealed a higher proportion of the respondents had been screened for cervical cancer.[21] The variation in findings may not be unrelated to the sample size and study setting. Most of the women in this study cited health providers' requests as a reason for undergoing the screening, therefore, healthcare workers can exert a huge influence on the uptake of the screening tests. It is plausible that the uptake of cervical cancer screening in this study was quite poor as poor knowledge and perception of cervical cancer screening were predominant among the respondents. The poor uptake of cervical cancer screening by the respondents implies that most of them may lose the benefits of early detection of pre-cancerous changes in the cervix, which if left untreated may transform into a cancer.

The knowledge of cervical cancer screening was positively associated with the uptake of cervical cancer screening among the study respondents, a finding that is corroborated by previous studies.[22,23] This implies that attempts at improving the knowledge of cervical cancer screening among pregnant women can significantly boost the uptake of the service.

CONCLUSION

In conclusion, our study found generally low levels of knowledge, perception, and uptake of cervical cancer screening while revealing the paramount importance of health workers in driving the utilization of screening services. The findings of lack of awareness as the major barrier to screening uptake and the positive association between knowledge and uptake suggest a potential opportunity to scale up the uptake of screening through client education.

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