

ORIGINAL ARTICLE

Knowledge of Cervical Cancer among Females in North Central Nigeria

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ABSTRACT

Background: Cervical cancer is a major cause of mortality among women of reproductive age group despite several measures initiated to halt the disease. Organized cytology-based screening is an effective technique in reducing the incidence and mortality of the disease. However, some women do not know what the screening is for. This study examined the knowledge on cervical cancer among women in North Central Nigeria. **Method:** This cross-sectional study was carried out on 242 females of age group 15 -55 years using an explorative structured questionnaire-based method from October - December 2023. Statistical Package for the Social Sciences (SPSS) version 26 was used for analysis. **Results:** The study found that 76.9% of the study population had never gone for cervical screening and the majority who are willing (60.2%) do not know when and where to get a screening test. The access to cervical cancer screening services is a major difficulty in the community. In addition, majority (93.8%) participants who held a higher education certificate or were currently pursuing an undergraduate degree, lack a clear understanding of the risk factors of cervical cancer and HPV vaccine. **Conclusions:** There is paucity of knowledge of the risk factors of cervical cancer among the study participants. To improve the knowledge, we advocated for awareness campaigns and affordable cervical cancer screening services.

Keywords: Cervical screening, Demographic factors, HPV vaccination, Nigeria

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INTRODUCTION

Cancer of the cervix is one of the most common cancer affecting women of reproductive age group. In 2018, the global figures estimate 570,000 new cases and 311,000 deaths due to cervical cancer annually ¹. In finding a lasting solution, The World Health Organization advocated a feasible “see and treat” method (single visit) approach for screening cervical cancer. North African countries like Morocco which had 3,388 new cases and 2,465 deaths in 2019 ² had implemented the World Health method compared to the 12,075 new

cases and 7,968 deaths in Nigeria ³. Some factors associated with cervical screening uptake include poverty, marital status, and the risk perception ^{4,5}. To date, many women of reproductive age group do not know what cervical cancer screening is for ^{6,7}.

Organized cytology-based screening (Pap Smear) is an effective method in reducing the incidence and mortality from cervical cancer and the success of the preventive strategies are predicated on achieving high levels of screening uptake at the population-level ⁸. However, the high

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screening uptake is dependent on women finding the strategies acceptable and incorporating HPV testing into established cervical cancer screening programme is uncertain⁹. In Nigeria, available centers for cervical screening are still few and the uptake is very poor. Previous studies conducted in Eastern, Northern, and Southern parts of Nigeria reported poor uptakes of cervical cancer screening which ranged between 4.2-20.5%^{10, 11}.

Furthermore, concerns have been expressed regarding the potential effect of HPV vaccination on screening participation since women's views on the transformation of cervical cancer prevention is poorly investigated⁹. The goal of cervical cancer screening programme is to decrease the prevalence of cervical cancer among women of reproductive age group by intercepting the progress from pre-cancerous lesion to an invasive cancer¹². In order to inform policy makers and those undertaking service delivery, we aimed to explore women's knowledge on cervical cancer and HPV vaccination in North Central Nigeria.

MATERIALS AND METHOD

Ethical consideration

Ethical clearance was obtained from The College of Medicine and Health Sciences, Bingham University, Karu, Nigeria. A written informed consent was obtained from participants and all participants were also assured personal privacy in the questionnaire.

Study design

The study designed followed a descriptive cross-sectional survey was carried out on 242 females ages 15 to 55 years from October to December 2023. Prior to obtaining consent, the participants were informed of the study's objective. Participants information were collected using validated questionnaires on the knowledge and practices related to cervical cancer and HPV vaccine, as well as demographics traits.

Participants

Inclusion criteria: Eligible participants are females ages 15-55 years who gave their informed consent to participate living in the North Central States of Nigeria.

Exclusion criteria: Excluded patients were those who were <15-year-old or older than 55 years of age, and those who did not consent.

Sampling tool

Quantitative questionnaire survey was used to pull together information on demographic factors including age, educational level, marital status, parity, occupation, and income level. In addition, the structured questionnaire elicited information on the knowledge, attitude, and perception to cervical cancer and the HPV vaccines. Partial entries and none responses were excluded and 242 responses were processed.

Statistical analysis

Percentage and frequency proportions of respondents on the knowledge and socio-demographic factors were assessed using Statistical Package for the Social Sciences (SPSS) version 26. Hypothesis was tested by the Chi square and Crammer's V methods at a significance of level of $P \leq 0.05$.

RESULT

The findings from Table 1 depict the socio-demographic characteristics of the respondents. The results shows that 155 individuals (64%) were aged between 15-25, 69 (28.5%) were aged 26-35, 14 (5.8%) were aged 36-45 and 4 (1.7%) respondents were within 56-65 years old. The majority of respondents were single 72.7%, while married women accounted for only 27.3% of the sample. In terms of education, only 5.8% of the participants had a secondary school certificate, while 93.8% either held a higher education certificate or were currently pursuing an undergraduate degree. This shows that the majority of the respondents are educated. Most of the respondents, about 56.6% are from low income families. The geographic distribution of the participants is also presented in the table. Additionally, 79.8% of the respondents lived in urban areas, while the remaining 20.2% lived in rural areas. About 53% has never engaged in sexual intercourse while 46.3% have (Table 1).

Approximately 30% of the study's participants exhibit a high level of familiarity with cervical cancer, while a slight familiarity is reported by 55.4%, and only 14.5% are unacquainted with the disease. Regarding education on cervical cancer, 73.1% of respondents had received prior information, while 26.9% had not. Likewise, 66.1% had prior information about HPV, while 33.9% had not. Concerning the awareness

Table 1: Demographic Characteristics

		Frequency	Percent
Age	15-25	155	64.0
	26-35	69	28.5
	36-45	14	5.8
	46-55	4	1.7
	Mean	24.86 (S.D = 6.68)	
Parity	0	182	75.2
	1-4	53	21.9
	5-8	7	2.9
	Mean	0.67 (S.D = 1.4)	
Marital Status	Single	176	72.7
	Married	66	27.3
Level of Education	None	1	.4
	Secondary	14	5.8
	Tertiary	227	93.8
Household Monthly Income	Low	137	56.6
	Middle	92	38.0
	High	13	5.4
State of Residence	Benue	25	10.3
	Kogi	29	12.0
	Kwara	12	5.0
	Nasarawa	60	24.8
	Niger	96	39.7
	Plateau	20	8.3
Location	Rural Area	49	20.2
	Urban Area	193	79.8
Have you ever engaged in sexual intercourse?	No	130	53.7
	Yes	112	46.3

Low Income = less than ₦100,000, Middle Income = ₦100,000 - ₦500,000, High Income = above ₦500,000.

Table 2: HPV and Cervical Cancer Awareness

		Frequency	Percent
How familiar are you with cervical cancer?	Not Familiar	35	14.5
	Slightly Familiar	134	55.4
	Very Familiar	73	30.1
	Total	242	100.0
Have you ever received any information or education about cervical cancer?	No	65	26.9
	Yes	177	73.1
	Total	242	100.0
If YES, where?	Family/Friends	12	6.8
	Hospital	35	19.8
	Others	9	5.1
	Outreach	8	4.5
	School	76	42.9
	Social Media	37	20.9
Total	177	100.0	
Have you ever received any information or education about HPV?	No	82	33.9
	Yes	160	66.1
	Total	242	100.0
If YES, where?	Family/Friends	5	3.1
	Hospital	35	21.9
	Others	11	6.9
	Outreach	6	3.8
	School	78	48.8
	Social Media	25	15.6
Total	160	100.0	
Are you aware of the risk factor(s) of cervical cancer?	No	74	30.6
	Yes	168	69.4
Does only HPV cause Cervical Cancer?	No	67	27.7
	Not Sure	137	56.6
	Yes	38	15.7

platform where the participants gained knowledge of the disease, school had the highest proportion, as indicated by 42.9% and 48.8% of the respondents for cervical cancer and HPV, respectively. In terms of cervical cancer's risk factors, 66.5% of the respondents are knowledgeable. Furthermore, 15.7% of participants agree that HPV is the sole

cause of cervical cancer, while 27.7% disagree, and 56.6% are unsure. On the overall knowledge, there is a positive knowledge of the illness among the participants, although there exist a lack of clear understanding of the risk factors among a majority of the participants (Table 2).

Our data shows mean knowledge score of 1.73 out of 2. By implication, 45% of the participants are aware of the HPV vaccine while 43% are not. 40.5% of the respondents believes that HPV vaccine is effective in preventing cervical cancer, 53.7% are not sure while a smaller proportion (5.8%) do not. A high proportion of 62% are willing to take the HPV vaccine. On the overall knowledge, there is a positive knowledge of the illness among the participants, although there exist a lack of clear understanding of the risk factors among a majority of the participants (Table 3).

Table 3: Knowledge and attitude of respondents towards HPV Vaccine

		Frequency	Percent
Have you ever heard of the HPV vaccine?	No	104	43.0
	Not Sure	29	12.0
	Yes	109	45.0
	Total	242	100
Do you believe that the HPV vaccine is effective in preventing cervical cancer?	No	14	5.8
	Not Sure	130	53.7
	Yes	98	40.5
	Total	242	100.0
Would you be willing to get the HPV vaccine?	No	31	12.8
	Not Sure	61	25.2
	Yes	150	62.0
	Total	242	100.0

Mean Knowledge score: 1.73 out of 2.

Only a small percentage, about 5.8% and 8.7% of the respondents acknowledged that either they, family or friends had been affected by the diseases for HPV and cervical cancer respectively (Table 4).

Table 4: Prevalence of HPV/Cervical cancer on self and Close Relations

		Frequency	Percent
Have you or any of your friends or family members been affected by HPV?	No	188	77.7
	Not Sure	40	16.5
	Yes	14	5.8
	Total	242	100.0
Have you or any of your friends or family members been affected by cervical cancer?	No	190	78.5
	Not Sure	31	12.8
	Yes	21	8.7
	Total	242	100.0

A significant proportion of the respondents (88.8%) are in agreement that cervical cancer constitutes a significant health issue for women. In contrast, a minority (2.5%) hold the opposite view, while a small percentage (8.7%) remain uncertain. Furthermore, almost 70% of the participants consider the prevention of cervical cancer as a crucial aspect of their overall health, while only a tiny fraction (3.7%) does not share this sentiment. The majority of the respondents (80.2%) do not view cervical cancer as a taboo topic, whereas a small proportion (7%) regards it as such. When it comes to discussing cervical cancer, a considerable percentage (64.5%) feels very comfortable talking about it with family and friends. A smaller proportion (14%) feels slightly comfortable, while a few respondents (8.3%) feel slightly uncomfortable and a negligible fraction (2.9%) feels very uncomfortable. Similarly, a majority of the participants (64.9%) express a high level of comfort discussing cervical cancer with their doctor. A smaller percentage (13.2%) feels slightly comfortable, while a few respondents (5.8%) feel slightly uncomfortable and a negligible fraction (4.5%) feels very uncomfortable. Almost half of the respondents (47.5%) do not know where to obtain a cervical cancer screening test, while a similar percentage (47.1%) are aware of the screening locations. A few respondents (5.4%) are unsure. More than half of the participants (55.4%) believe that access to cervical cancer prevention services is a problem in their community, whereas a sizeable percentage (27.7%) do not share this

view. Notably, the majority of the participants (76.9%) have never undergone a Pap smear test. The rate at which respondents go for pap smear testing is illustrated in Table 5. Overall, Table 5 illustrates the respondents' attitude and perception towards cervical cancer.

Table 5: Respondents' attitude and perception

		Frequency	Percent
Do you think that cervical cancer is a significant health issue for women?	No	6	2.5
	Not Sure	21	8.7
	Yes	215	88.8
	Total	242	100.0
How much importance do you give to cervical cancer prevention in your overall health and wellness?	Not Important	9	3.7
	Not Sure	20	8.3
	Slightly Important	44	18.2
	Very Important	169	69.8
	Total	242	100.0
Do you think that cervical cancer is a taboo subject?	No	194	80.2
	Not Sure	31	12.8
	Yes	17	7.0
	Total	242	100.0
How do you feel about discussing cervical cancer with your friends and family?	Very Uncomfortable	7	2.9
	Slightly Uncomfortable	20	8.3
	Not Sure	25	10.3
	Slightly Comfortable	34	14.0
	Very Comfortable	156	64.5
	Total	242	100.0
How do you feel about discussing cervical cancer with a Doctor?	Very Uncomfortable	11	4.5
	Slightly Uncomfortable	14	5.8
	Not Sure	28	11.6
	Slightly Comfortable	32	13.2
	Very Comfortable	157	64.9
	Total	242	100.0

		Frequency	Percent
Do you know where to get a cervical cancer screening test?	No	115	47.5
	Not Sure	13	5.4
	Yes	114	47.1
	Total	242	100.0
Do you think that access to cervical cancer prevention services is a problem in your community?	No	67	27.7
	Not Sure	41	16.9
	Yes	134	55.4
	Total	242	100.0
How frequent do you go for a pap smear test?	Every six months	4	1.7
	Every three months	5	2.1
	Never	186	76.9
	Once a year	11	4.5
	Only when recommended by my healthcare provider	36	14.9
	Total	242	100.0

This shows the relationship of demographics on the willingness of the respondents to get the HPV vaccine. The test shows a significant relationship with Age ($p=0.021$), marital status ($p=0.004$), parity ($p=0.009$) and history of sexual intercourse ($p=0.004$). There is no significant relationship with the level of education and location of the participants. In other words, the willingness of the respondents to take HPV vaccine is dependent on Age, marital status, parity and sexual history. The associations are shown in Table 6.

DISCUSSION

This study found that 76.9% of the respondents had never gone for cervical cancer screening. The access to cervical cancer prevention services is a major difficulty in the community and the majority who are willing (60.2%) do not know when and where to get a cervical cancer screening test. Although, majority (93.8%) held a higher education certificate or were currently pursuing an undergraduate degree, there are paucity of the knowledge of risk factors of cervical cancer among the study participants. In line with this study, accumulated evidences abound that knowledge

Table 6. Association among some variables

		Would you be willing to get the HPV vaccine?			Test Statistics	Cramer's V
		No	Not Sure	Yes		
Age	15-25	27	43	85	$X^{2a} = 13.515$ $p = 0.021$	0.169 $p = 0.033$
	26-35	3	13	53		
	36-45	1	3	10		
	46-55	0	2	2		
Marital Status	Single	26	52	98	$X^2 = 10.895$ $df = 2$ $p = 0.004$	0.212 $p = 0.004$
	Married	5	9	52		
Parity	0	25	51	106	$X^{2a} = 12.463$ $p = 0.009$	0.159 $p = 0.017$
	1-4	5	6	42		
	5-8	1	4	2		
Level of Education	None	0	0	1	$X^{2a} = 2.425$ $p = 0.756$	0.058 $p = 0.789$
	Secondary	3	3	8		
	Tertiary	28	58	141		
Location	Rural Area	4	15	30	$X^2 = 1.754$ $df = 2$ $p = 0.416$	0.085 $p > 0.416$
	Urban Area	27	46	120		
Have you ever engaged in sexual intercourse?	No	21	41	68	$X^2 = 11.162$ $df = 2$ $p = 0.004$	0.215 $p = 0.004$
	Yes	10	20	82		

X^2 = Chi-Square, X^{2a} = Fisher's Exact Test variant of Chi-Square; *Test statistics is significant at 0.05 level.

of cervical cancer among women of reproductive age group is indispensable for the early detection of precancerous lesions^{11,13,14,15}. In this study, only 30.1% of the participants showed familiarity with the disease while majority (69.9%) are unacquainted with the disease. Previous studies have also connected the paucity of knowledge of cervical cancer among women of reproductive age group to their perceived low risk of susceptibility to the disease and lack of interest^{12,16,17}. This report is consistent with our recent systematic review which found that lack of awareness and problems with health system structure and processes are major barriers associated with cervical screening uptake in Nigeria⁷. Therefore, it is indispensable to create awareness, supply essential equipment, increase access to health facilities, and strengthens follow up system for service improvement¹.

In line with our study also, the older age group have relative high levels of regular attendance for cervical cancer screening and the willingness to receive the HPV vaccine than younger groups, this difference was statistically significant. Previously, younger age has been associated with lower attendance^{18,19}, however, other studies reported that those in an older age category (55–64 years) are more likely to be overdue for screening than a younger category^{20,21}. It is essential to know some women considered that adequate explanation of the screening results should be of paramount importance in order to minimize negative psychological effects associated with testing positive²². It is interesting that we did not observe significant difference in the respondents location and level of education as significant predictors to screen for cervical cancer. No other demographic variables were found to significantly predict

regular cervical cancer screening, except that parity factors and women who were married or who engaged in sexual activity were more likely to be regular attenders than single women in the Cramer's V comparison. These demographic findings could be used to support intervention to those who are least likely to attend (lower household income, and potentially single women or those who have not had an STI) ¹⁵.

However, our study has some limitations. The survey was conducted in English language using google form online, which is a representative

of the online English-speaking population. This may explain why the percentage of participants who held a higher education certificate or were currently pursuing an undergraduate degree were predominant. Consequently, certain segments of the population may not be well represented.

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