Original Article

Cytopathological Evidence Of Cervical Lesions In Women Attending Federal Medical Centre, Asaba, Nigeria

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Abstract

Background: Human papillomavirus (HPV) is an important determinant of cervical cancer, especially in women of childbearing age. Adequate awareness of the burden of these diseases and early diagnosis are still limited in Nigeria due to lack of knowledge and socioeconomic status.

Aim: This was a prospective study conducted to determine the cytopathological evidence of cervical lesions as well as relevant cervical cancer risk factors in women attending Federal Medical Center, Asaba, Nigeria, between August and October 2022.

Methodology: One hundred and fifty (150) consented women aged 18 - 60 (38.0 ± 7.3) years were selected for the study. The researchers adopted a purposive sampling method, and a standard questionnaire was administered to ascertain their sociodemographic characteristics. Pap smears were done, and the results were reported by a pathologist.

Results: The prevalence of cervical cytological abnormalities was 41 (27.3%). Thirty five (23.3%) of the women had low-grade squamous intraepithelial lesions (LSILs), three (2%) had atypical squamous cells of undetermined significance, 2 (1.3%) had high-grade squamous intraepithelial lesions while, 1 (0.7%) had atypical squamous cells. The abnormal cells were more numerous in participants between the age of 31 and 40 years (P = 0.0002). The result shows that women with their first sexual experiences were significantly higher among the ages of 19 to 25 years (P = 0.0046) as well as women with five or more children (P = 0.0015). Significant associations appeared among age, coitarche, parity, and cervical cell abnormalities (P = 0.0002, 0.0046, and 0.0015, respectively).

Conclusion: The results showed a high prevalence of LSILs in reproductive-age women, which indicates infection with certain types of HPV. A routine module for HPV screening and vaccination program among reproductive-age women is highly advocated at both primary and tertiary care levels to curb future progression to cervical cancer and its complications.

Keywords: Cervical cancer, Cytology, HPV, Pap smear, Risk factors, Nigeria.

INTRODUCTION

Human papillomavirus (HPV) is a sexually transmitted virus. A great number of hypersexual individuals are exposed to HPV infection at least once in a lifetime, though most of the time it goes away on its own [1]. However, the persistence of this infection in infected individuals often leads to various types of cancers, especially cervical cancer [2, 3]. Previous research has shown that almost all cervical cancers are caused by HPV, especially “high-risk” HPV infections like HPV 16 and 18 [1, 4]. Being at a young age, especially at first coitus, is a common risk factor for HPV infection, even though it is usually briefly intact in the immune system [5, 6]. Other factors include low socioeconomic status, smoking, and having multiple sexual partners [7].

Almost 90% or more of cervical cancer is a result of long-standing infection with one of the HPV types [7]. It is estimated that about 40% of women will be infected with a high-risk HPV at some point in their lives, and most infections are successfully controlled by the immune system and resolve on their own within 2 years [7]. HPV can also spread through skin-to-skin contact, with more risk of infection coinciding with the replacement of differentiated somatic cells, which occurs at puberty and the first pregnancy and declines after menopause. [6]. Hypersexual young women between 18 and 30 years of age are mostly affected, after which it suddenly decreases. Nevertheless, cervical cancer is more common in women older than 35 years, suggesting infection at a younger age and slow progression to cancer [6, 8-9]. Considering the pivotal role of HPV infection in the

advancement of squamous cell carcinoma, a relevant study is necessary to discern the incidence, risk factors, and affordable and effective methods of screening in our health care system in Nigeria.

METHODS

This was a prospective cross-sectional study conducted at Federal Medical Centre (FMC), Asaba, in Oshimili South Local Government Area, Delta State. One hundred and fifty consenting women were randomly recruited into the study. The study participants were mainly females within childbearing age at FMC, Asaba.

The study was explained to the participants and consenting women were enrolled. Ethical approval was collected from the board of ethics committee of FMC, Asaba, Delta State, Nigeria. Social-demographic data for the participants were collected using a semi-structured questionnaire. The reproductive history, sexual history, and number of pregnancies were obtained. Women on their menstrual cycle, HIV-infected women, pregnant women, patients with tuberculosis, and those who had undergone a hysterectomy at the time of the study were excluded.

In Pap smear testing, a sample was collected from each of the participants using a small brush and speculum to expose the cervix, and then, with the aid of a sterile spatula, cells were curated gently from the surface of the cervix. Smears were then made on the glass slides and fixed immediately in 95% alcohol, after which it was ready for cytological staining and microscopic examination for the presence of abnormal cervical cells as characterized by anaplasia, hyperchromatism, and large nuclei. The staining was done through the Papanicolau conventional method, and a pathologist read all the slides and reported them following the Bethesda classification.

RESULTS

Sociodemographic characteristics of women who underwent Pap smear testing

One hundred and fifty adult females aged between 18 and 60 (38.0 ± 7.3) years participated in the study. In all, 18.7% of the participants (n = 28) were aged between 21 and 30 years, 40.7% (n = 61) aged between 31 and 40 years, 26.7% (n = 40) between 41 and 50 years, 12.7% (n = 19) were over 50, and 1.3% (n = 2) were under 21. Most of the women (60%; n = 90) were from Igbo. As well, 89.3% (n = 134) of the participants were married, whereas 36.7% (n = 55) had five or more children. Overall, 51.3% (n = 77) of the women had fewer than five children, and 12% (n = 18) of reproductive-age women had no live births prior to the study. A total of 18.7% (n = 28) had experienced their first coitus before age 18, and 13.3% (n = 20) of the participants have done a Pap smear test prior to the study. A total of 38% (n=38) of women have had two or more partners, whereas 61.3% (n=92) had one partner (see Table 1).

Table 1. Sociodemographic characteristics of the study participants (N = 150)

Characteristics	Frequency (%)
Age in years	
<21	2 (1.3)
21–30	28 (18.7)
31–40	61 (40.7)
41–50	40 (26.7)
≥51	19 (12.7)
Marital status	
Married	134 (89.3)
Single	11 (7.3)
Widow	5 (3.3)
Sex before age 18	
Yes	28 (18.7)
No	122 (81.3)
Multiple partners	
Yes	38 (38)
No	92 (61.3)

Characteristics	Frequency (%)
Number of children	
0	18 (12)
<5	77 (51.3)
>5	55 (36.7)
Knowledge of Pap smear	
Yes	20 (13.3)
No	130 (86.7)
Vaccinated against HPV	
Yes	0 (0)
No	150 (100)

Frequency of cervical epithelial cell abnormalities among participants

The results showed 27.3% (n = 41) abnormal cells in the study participants. The most frequent epithelial cell abnormalities were low-grade squamous intraepithelial lesions (LSILs; 23.3%; n = 35), followed by atypical squamous cells of undetermined significance (ASCUS; 2%; n = 3), then high-grade squamous intraepithelial lesions (HSILs; 1.3%; n = 2), and atypical squamous cells (ASC-H; 0.7%; n = 1; see Table 2).

Table 2. Types of cervical epithelial cell abnormalities in the study participants (N = 150)

Type of Abnormality	**n (%)**
LSIL	35 (23.3)
ASCUS	3 (2)
HSIL	2 (1.3)
ASC-H	1 (0.7)
None	109 (72.7)

Cervical cancer risk factors and abnormal cervical epithelial cells in the study participants

Abnormal cells occurred more often in reproductive-age females aged 31 to 40 years (P = 0.0002). It was also observed that the results were high for women who had their first sexual experience between 19 and 25 years of age (P = 0.0046) and for women with five or more children (P = 0.0015; see Table 3).

Table 3. Possible cervical cancer risk factors and abnormal cervical epithelial cells in the study participants (N = 150**)**

	Frequency	**Percentage**	**Chi-square**	**Degree of freedom**	**P value**
Age			22.293	4	0.0002
<21	2	4.9			
21-30	3	7.3			
31-40	17	46.3			
41-50	8	19.5			
≥51	9	22			
Coitarche			10.771	2	.0046
>19	12	29.3			
19-25	23	56.1			
<25	6	14.6			
Parity			12.946	2	.0015
<5	21	51.2			
>5	17	41.5			

	Frequency	Percentage	Chi-square	Degree of freedom	P value
Null	3	7.32			
Partners			0.610	1	.4349
Multiple	23	56.1			
One	18	43.9			

DISCUSSION

Nigeria is still somewhat behind in terms of awareness of, screening for, and vaccinations against HPV infection and its complications. Our study observed 27.3% abnormal cells. This is consistent with previous reports from elsewhere in Nigeria; a prevalence of 19.3% was reported in Jos [10] and 29.7% in Nnewi [11], whereas findings in Ibadan recorded 19.5% and 26.3% in sexually active women at different times [12] and Enugu 12.2% [13]. The variations in the figures reported could be due to study-specific characteristics such as age, environment, timing, and screening methods used. Our earlier reports have also noted that cervical HPV infection prevalence varies with different environments [8].

In the current study, LSILs were noted to have the highest prevalence (23.3%). Previous research in Nnewi [11], however, confirmed that LSIL in 25 (17.9%) had the highest prevalence and that ASCUS was more prevalent in Jos (10.3%), whereas our study observed decreased incidence of ASC-H in the study participants (0.7%). HSILs were lower (1.3%) compared with the study done in Nnewi (8.6%) and Jos (3.8%).

The observed low and absolute knowledge of Pap smear testing (13.3%) among the participants in this study is quite alarming. This may be due to inadequate information and promotion of cervical cancer screening, lack of education, and poverty among the study population. This is consistent with a similar report in Enugu [13] and in the northern part of the country, with an awareness rate of 4.2% for Pap smear testing [14]. The authors noted extremely low awareness and total ignorance of the cervical cancer screening methods among the general population. The death rate due to cervical cancer have decreased considerably in developed countries, due to standardized screening systems. However, the availability of such adequate screening methods are still limited in Nigeria and Africa generally, where cervical cancer screening is done only when the opportunity arises, and even with that, some high-risk populations are less likely to be screened.

In the present study, age has been found to be linked with abnormal cells lining the surface of the cervix, which conforms to the results of other studies conducted elsewhere [15, 16]. However, some previous studies recorded no significant association between age and cervical cytology abnormalities [17, 18]. This may be attributed to genetic differences and geographical and racial diversity. Previous research has proposed early and regular cytopathological screening in women, especially for those of reproductive age [19]. This was recommended as a result of increased incidences of abnormal cell cytology in women of reproductive age. [12].

Furthermore, other factors such as coitarche and parity were observed to have an association with squamous cell lesions and other risk factors. This is consistent with studies done elsewhere [20]. However, there is no significant connection with multiple partners as observed in the study, its traditional links to malignant tumors notwithstanding.

CONCLUSIONS

LSILs was more common in reproductive-age women, which indicates infection with certain types of HPV. The routine module for HPV screening and vaccination program among reproductive-age women is highly advocated at both the primary and tertiary care levels to curb future progression to cervical cancer and its complications.

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