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Cervical intraepithelial neoplasia: Prevalence, risk factors, and utilization of screening services among an urban population in Nigeria

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ABSTRACT

Background: Cervical intraepithelial lesion is a precursor lesion for cancer of the cervix. It is usually asymptomatic and can only be detected through screening.

Purpose: This study was designed to determine the prevalence, risk factors, and utilization of screening services for cervical intraepithelial neoplasia among the women.

Methods: It was a cross-sectional study during an organized screening program for cervical intraepithelial neoplasia (CIN) using Pap smear among women in July 2013 at the University Teaching Hospital, North Central Nigeria.

Results: Out of the 286 women interviewed, 208 agreed to be screened giving a response rate of 72.7%. Most (72.1%) of them were 31–50 years, 78.4% were married, and 65.4% had a tertiary level of education. Approximately, 77% became sexually active as teenagers. CIN 1 and CIN 2/3 accounted for 4.8% and 2.9%, respectively. Overall, low-grade squamous intraepithelial lesion and high-grade squamous intraepithelial lesion amounted to 7.7%. The risk of intraepithelial lesion is higher among those with multiple sexual partners, early coitarche, and ever use of oral contraceptive pills (odds ratio 1.76, 0.8, and 1.4). Only 9.8% of the total population interviewed had ever screened at least once in the past. Even among those with a positive result for CIN, only 18.8% had ever screened.

Conclusion: Organized screening programs for early detection and treatment of CIN, modification of risky social behaviors, and vaccination of teenage women should be promoted as crucial steps to preventing cancer of the cervix.


Key words: Cervical cancer; human papillomavirus; organized screening; Pap smear; premalignant lesion; vaccination.

Introduction

Cancer of the cervix is the most common female genital tract malignancy in developing countries of the world.^[1,2] It is, however, a preventable and curable disease. This is due to the fact that the disease has a precancerous phase, clinical features are also not so difficult to identify, and the organ in question is easily accessible. Unfortunately,

most women present to the hospital late and as such not much is done in advanced cases to significantly improve on the prognosis.^[1]

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The incidence and deaths from this cancer in developing countries have persistently remained on the high side. About 500,000 new cases are diagnosed annually worldwide. Approximately, 250,000 deaths are also reported annually.^[1-3] It is believed that every hour a woman dies of cervical cancer in Nigeria.^[4] So many factors have been identified as contributors to the numerous deaths in the developing world. These include a high level of illiteracy, poverty, poor awareness, high-risk social behaviors, and poor utilization of screening services among others.^[3]

Cervical cancer screening which aims at studying the cellular characteristics of the exfoliated cells is crucial to preventing deaths from the disease. The precancerous lesions take years before they become frankly invasive cancers.^[4] Early detection and treatment of cervical intraepithelial neoplasia (CIN) will certainly improve patient's outcome.^[5] Organized rather than opportunistic screening is recommended in this regard.^[6] In Nigeria, awareness creation, enlightenment, and screening programs are not so common and are majorly championed by nongovernmental organizations, professional associations, and religious bodies.^[7]

Judging by the understanding that low-grade squamous intraepithelial lesion (LSIL) (human papillomavirus [HPV] infection and CIN1) and high-grade squamous intraepithelial lesion (HSIL) (CIN 2 and CIN3) are the potential lesions that could regress, persist, or progress to invasive cancer, this study was aimed at identifying the prevalence of these precancerous lesions, risk factors for these lesions, and rate of utilization of screening services in Makurdi, Northcentral Nigeria.

Methods

This was a cross-sectional study conducted in the Gynaecology Clinic at the University Teaching Hospital during an organized screening program in July 2013. The research was approved by the Ethics Committee of the State Ministry of Health. Clients were mobilized through public rally and announcements [Figure 1]. The clients were interviewed by trained research assistants using a pretested interviewer-administered questionnaire. The consent of clients that were sexually active was sought before inclusion into the study [Figure 2]. Women who had active vaginal bleeding, total abdominal or vaginal hysterectomy, virgins, and those that were diagnosed with cancer of the cervix were excluded from the study. After cleaning the vulva and vagina, Cusco's speculum was used to expose the cervix. Ayre's spatula was used to obtain the specimen from the ecto- and endocervix. Smears were made on the glass slide and fixed immediately in 95% alcohol in coupling jars [Figure 3]. These

slides were stained with Papanicolaou reagent and read by the cytopathologist. The slides were reported as normal, inflammatory cells, atypical squamous cells of undetermined significance, LSILs, and HSILs. Data were entered into SPSS statistical software version 20 IBM (international business machine); New York, USA. Chi-square and Fisher's exact test were used where appropriate. $P < 0.05$ was considered statistically significant. Odds ratios (ORs) with confidence intervals were used to quantify the risk.

Results

Out of the 286 women interviewed, 208 agreed to be screened giving a response rate of 72.7%. Most (72.1%) of them were aged 31–50 years, 78.4% were married, and 65.4% of them had a tertiary level of education [Table 1]. Approximately, 77% became sexually active as teenagers. CIN 1 and CIN 2/3 accounted for 4.8% and 2.9%, respectively. Overall, LSIL and HSIL amounted to 7.7% [Table 2]. The risk of squamous intraepithelial lesions was higher among those with multiple sexual partners, early coitarche, and ever use of oral contraceptive pill (OR 1.76, 0.8 and 1.4) though this was not statistically significant [Table 3]. Only 9.8% of the total population interviewed had ever screened at least once in the past. Even among those with a positive result for SIL, only 18.8% had ever screened.

Discussion

The overall proportion of women with precancerous lesions of the cervix in this study was 7.7%. The value is higher than 4.8% reported in Zaria, Northern Nigeria but comparable to reported rates of 7% in Tanzania and 7.7% in Egypt.^[8-10] Furthermore, the prevalence rate in the study was higher than reported rates in other parts of the world such as Costa Rica, Pakistan, the United Kingdom, and the United States of America.^[11-13] The difference in prevalence among the continents of the world is likely due to efficient cervical screening policies and other preventive measures that are



Figure 1: Road walk creating awareness against cervical cancer during the screening program



Figure 2: Participants waiting to be screened



Figure 3: Pap smear procedure during the screening

Table 1: Sociodemographic characteristics of subjects

Sociodemographic characteristics	Frequency (n=208)	Percentage
Age		
≤20	5	2.4
21-30	28	13.5
31-40	70	33.7
41-50	80	38.4
≥51	25	12.0
Educational level		
None	19	9.1
Primary	21	10.1
Secondary	32	15.4
Tertiary	136	65.4
Marital status		
Married	163	78.4
Separated/divorced	7	3.3
Single	13	6.3
Widowed	25	12.0
Occupation		
Trading	25	12.0
Farming	12	5.7
Homemakers	17	8.2
Civil servants	90	43.3
Applicant	36	17.3
Military/paramilitary	28	13.5
Parity		
0	10	4.8
1-2	46	22.1
3-4	68	32.7
≥5	84	40.4

Table 2: Cytology report

Results	Frequency	Percentage
Normal/inflammatory cells	191	91.8
CIN 1	10	4.8
CIN 2/3	6	2.9
ASCUS	1	0.5
Total	208	100

ASCUS - Atypical squamous cells of undetermined significance; CIN - Cervical intraepithelial neoplasia

been promoted in the developed parts of the world compared with the developing countries.

Although not all of these lesions may eventually progress to frank malignancy, the proportion of those with the potential of becoming cancerous if untreated, as showed in this study is high. This makes early detection and treatment of these lesions a key strategy in preventing the occurrence of the disease. To prevent is better than attempting to achieve cure.

The finding that 77% of the women became sexually active during the teenage years is alarming and with evidence of decreasing age at sexual debut,^[13] efforts must be made by reproductive health experts to protect these young girls from the virulent havoc of HPV which is the known major etiological agent implicated in cancer of the cervix. Thus, the availability, accessibility, and affordability of HPV vaccines become imperative. The development of Gardasil 9 which has a wider coverage against oncogenic strains compared with the older quadrivalent Gardasil is a step in the right direction. This shows that consistent efforts are been made by medical researchers in enhancing the fight against HPV virus.

It is a well-established fact that early detection and treatment of these intraepithelial lesions improves the prognosis of the disease. It, therefore, behooves on the women to utilize screening services within their locality. The finding of poor utilization of screening services of 9.8% is comparable to reports of other researchers in different parts of Nigeria. Even among the women who had cervical intraepithelial lesions, only 18.9% had ever screened. The World Health Organization had reported that only 5% of women in developing countries have been screened in the past 5 years.^[14] Several factors are responsible for the low uptake of cervical screening, namely, ignorance, cost, absence of screening centers, nonphysician referrals, or religious reasons, etc.^[15]

Today, a good number of nongovernmental organizations have stepped into making these services available in most communities in Nigeria, especially where governments have failed in their responsibility in providing affordable lifesaving health-care services. This is highly commendable. Campaigns

Table 3: Association between some risk factors and squamous intraepithelial lesions

Risks factors	CIN-present, n (%)	CIN-absence, n (%)	Total, n (%)	OR (CI)/P
Sex partners				
Multiple	12 (75)	121 (63.1)	133 (63.9)	1.76 (0.5-6.7)/0.49
Single	4 (25)	71 (36.9)	75 (36.1)	
HIV infection				
Reactive	2 (12.5)	10 (5.2)	12 (5.7)	2.6 (0.3-14.7)/0.22
Nonreactive	14 (87.5)	182 (94.8)	196 (94.3)	
Alcohol				
Yes	5 (31.2)	58 (30.5)	63 (30.5)	1.0 (0.3-3.4)/0.95
No	11 (68.8)	132 (69.5)	143 (69.5)	
Coitarche				
≤19	10 (62.5)	129 (67.2)	139 (66.8)	0.8 (0.3-2.7)/0.70
≥20	6 (37.5)	63 (32.8)	69 (33.2)	
Injectable				
Yes	5 (31.2)	48 (25)	53 (25.4)	1.3 (0.4-4.5)/0.56
No	11 (68.8)	144 (75)	155 (74.6)	
Implants				
Yes	3 (18.8)	11 (5.7)	14 (6.7)	3.8 (0.7-17.6)/0.08
No	13 (81.2)	181 (94.3)	194 (93.3)	
IUCD				
Yes	5 (31.2)	26 (13.5)	31 (14.9)	2.9 (0.8-10.0)/0.06
No	11 (68.8)	166 (86.5)	177 (85.1)	
OCP				
Yes	9 (60)	92 (47.9)	101 (48.6)	1.4 (0.5-4.4)/0.52
No	7 (40)	100 (52.1)	107 (51.4)	

CIN - Cervical intraepithelial neoplasia; OCP - Oral contraceptive pills; IUCD - Intrauterine contraceptive device

for awareness creation and promotion of utilization of screening services should be sustained. Health facilities, media outfits, religious bodies, and communities have a role to play in making this a reality.

Among the risk factors studied, multiple sexual partners lay credence to the fact that CIN just as invasive cervical cancer is most likely a sexually transmitted disease after all. No wonder it has been reported that the disease is not so common among nuns, virgins, and highly religious groups of women. The role of HIV infection as a cofactor to HPV has also been studied by many medical experts. The likelihood of developing CIN among HIV women has also been observed in our study. Both viruses are sexually transmitted, and the immunosuppressive state created by the HIV infection makes the virulence of HPV in causing cancer of the cervix undoubtful. A study done in Conakry, Guinea reported that the incidence rate for CIN was 4 to 5 times more in HIV-positive patients compared with HIV-negative patients.^[10] Studies in Lusaka, Zambia, and Brazil have agreed with these findings.^[16] The Centers for Disease Control and Prevention has recognized cancer of the cervix as an AIDS-defining disease.^[10] Modification of high-risk sexual behavior is recommended as a primary preventive strategy against CIN.

Hormonal contraceptives and intrauterine device have been reported in certain epidemiological studies to be implicated in the development of precancerous intraepithelial cervical lesions though their positive correlation is not strongly proven. This seems to be the case in our study as well. It is believed that women who take oral contraceptives are more likely to start sexual active early, have more sexual partners, and practice unprotected sex.^[13] It will be difficult to advocate for nonuse of these contraceptives as a strategy for preventing cancer of the cervix. However, women who wish to use any family planning or contraceptive method should consult a medical expert for proper assessment and screening to determine suitability of the chosen method before usage.

Conclusion

Organized screening programs for early detection and treatment of CIN, modification of risky social behaviors, and vaccination of teenage women should be promoted as crucial steps to preventing CIN and invasive cancer of the cervix.

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Conflicts of interest

There are no conflicts of interest.

References

1. Olaniyan OB, Agboghroma OC, Ladipo OP. Knowledge and practice of cervical screening among female health workers in government hospitals in Abuja metropolis, Nigeria. *Trop J Obstet Gynaecol* 2000;17:18-20.
2. Balogun MR, Odukoya OO, Oyediran MA, Ujoma PI. Knowledge of cervical cancer and its risk factors among women residing in two urban slumps in Lagos, Nigeria. *Niger Med Pract* 2012;61:74-9.
3. Aboyeji PA, Ijaiya MA, Jimoh AA. Knowledge attitude and practice of cervical smear as a screening procedure for cervical cancer in Ilorin, Nigeria. *Trop J Obstet Gynaecol* 2004;21:114-7.
4. Afolabi EA, Olaogun AA, Ajenifuja KO, Adereti CS. Prevention of cervical cancer among female undergraduates in two universities in South-Western, Nigeria. *Trop J Obstet Gynaecol* 2013;30:103-8.
5. Daru PH, Pam IC, Musa J, Daniyan MG, Silas OI, Adesina OA, et al. Cervical epithelial changes in a tertiary hospital in Northern Nigeria. *Trop J Obstet Gynaecol* 2013;30:109-14.
6. Adesina K, Saidu R, Aboyeji A, Fawole A, Olarinoye A, Ibrahim K. Factors contributing to low uptake of cervical screening in a population at risk. *Trop J Obstet Gynaecol* 2009;26:35-41.
7. Dada OA. Prevention of cervical cancer using visual inspection with acetic acid (VIA) and treatment of precancerous lesions by cryotherapy: The demonstration project and national scale up. *Trop J Obstet Gynaecol* 2010;27:49.
8. Sanad AS, Kamel HH, Hasan MM. Prevalence of cervical intraepithelial neoplasia (CIN) in patients attending Minia Maternity University Hospital. *Arch Gynecol Obstet* 2014;289:1211-7.
9. Adekunle OO, Samaila MO. Prevalence of cervical intraepithelial neoplasia in Zaria. *Ann Afr Med* 2010;9:194.
10. Kafuruki A, Rambau PF, Massinde A, Masalu N. Prevalence and

- predictors of cervical intraepithelial neoplasia among HIV infected women at Bugando Medical Centre, Mwanza-Tanzania. *Infect Agent Cancer* 2013;8:45.
11. Henk HJ, Insinga RP, Singhal PK, Darkow T. Incidence and costs of cervical intraepithelial neoplasia in a US commercially insured population. *J Low Genit Tract Dis* 2010;14:29-36.
 12. Kelly RS, Walker P, Kitchener H, Moss SM. Incidence of cervical intraepithelial neoplasia grade 2 or worse in colposcopy-negative/human papillomavirus-positive women with low-grade cytological abnormalities. *BJOG* 2012;119:20-5.
 13. Chandra MD, Nasreen S, Ambreen G, Farkhunda K, Zakia Z. Prevalence and risk factors for cervical intraepithelial neoplasia in patients attending gynaecological outpatient department of tertiary care hospital. *J Liaquat Univ Med Health Sci* 2013;12:44-8.
 14. Memiah P, Mbuthia W, Kiiru G, Agbor S, Odhiambo F, Ojoo S, *et al.* Prevalence and risk factors associated with precancerous cervical cancer lesions among HIV-infected women in resource-limited settings. *AIDS Res Treat* 2012;2012:953743.
 15. Utoo BT, Ngwan SD, Ajen AS. Utilization of screening services for cancer of the cervix in Makurdi, Nigeria. *J Reprod Biol Health* 2013. Available from: <http://www.hoajonline.com/Journals/pdf/2053-6623-1-3.pdf>. [Last accessed on 2016 Sep 16].
 16. Teixeira NC, Araújo AC, Correa CM, Lodi CT, Lima MI, Carvalho Nde O, *et al.* Prevalence and risk factors for cervical intraepithelial neoplasia among HIV-infected women. *Braz J Infect Dis* 2012;16:164-9.