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Knowledge of Cervical Cancer and Attitudes Towards Its Prevention Among Women Attending Antenatal Clinics in Primary Health Centres in a Niger Delta Capital City

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Abstract: *Introduction* Cervical cancer is the fourth commonest cause of cancer and cancer-related deaths among women worldwide and commonest gynaecological cancer in Nigeria. This study sort to determine the awareness of cervical cancer, its prevention and determine the attitude and practice of these women towards screening. *Materials and methods:* This was a descriptive cross-sectional questionnaire-based study to assess the knowledge, attitude and utilisation of cervical cancer screening among pregnant women attending antenatal clinics in primary health centres in Uyo, South-south Nigeria. *Results:* The mean age of respondents was 34.7±8.9 years. The majority (76.7%) had post-secondary education, were married (69.6%), had 2 or more lifetime sexual partners (>60%) and had been pregnant twice (25%). Most (87.5%) have heard about cervical cancer, mainly from health workers, 116 (44.8%). The top 2 clinical features known were abnormal vaginal bleeding 177 (59.8%) and foul-smelling vaginal discharge 157 (53.0%) while the commonest risk factors mentioned were sex at early age 145 (49.0%) and multiple sexual partners 135 (45.6%). Preventive strategies known include quitting smoking (53.4%), avoiding early sexual intercourse (49%) and avoiding multiple sexual partners (48.3%). The majority, 186 (62.8%) knew about screening measures but less than a quarter knew that all sexually active women should be screened 46 (15.5%), while only 24.7% were aware of free services, 15.2% had ever been screened. The commonest reasons for non-screening were not feeling at risk 68 (27.1%) and being unaware of screening 57 (22.7%) while most had a positive attitude towards screening for cervical cancer. 167 (56.4%). *Conclusion:* The good knowledge of cervical cancer and attitude towards its screening was not matched by action as only a few had ever been screened despite their high lifetime risk for it. There is therefore the need for further awareness creation on cervical cancer prevention with the aim of increasing their uptake of available screening services in the state.

Keywords: Cervical Cancer, Knowledge, Awareness, Attitudes, Prevention, Primary Health Centres

1. Introduction

Cervical cancer is the fourth commonest cause of cancer and cancer-related death among women worldwide after breast cancer, colorectal cancer and lung cancer; with most of these in low and middle-income countries (LMIC). [1, 2] This cervical cancer burden in the LMIC is aggravated by the prevailing poor health systems, lack of access to screening services and absence of national policies on vaccines which informed the desperate call to action by the World Health Organisation (WHO) for all stakeholders to support the global efforts in ending cervical cancer. [3, 4] In Nigeria, cervical cancer is the second most frequent

cancer in women after breast cancer as well as the second commonest cause of cancer-related deaths in women with an estimated nearly 12000 newly diagnosed cases and 8000 deaths in 2020. [5, 6].

The human papilloma virus (HPV) is a major aetiologic factor for the development of cervical cancer; with its persistence and the presence of co-factors including herpes simplex-2 virus and human immunodeficiency virus (HIV) reported to increase the risks. [7, 8] Sexual intercourse has been identified as an important factor in the acquisition and transmission of HPV with early age at first sexual intercourse, multiple sexual partners/ risky sexual behaviours and high parity being associated with infection of both oncogenic and non-oncogenic sub-types of HPV. [9-11] Other documented risk factors include long term use of combined oral contraceptives and cigarette smoking. [12, 13].

Cervical cancer may be asymptomatic, but early features include abnormal vaginal bleeding, usually postcoital, vaginal discomfort and malodorous discharge while dysuria, constipation, haematuria and fistula may develop later. [8].

Cervical cancer can be prevented by measures typically categorised as primary and secondary. The acquisition of the oncogenic HPV subtypes, and the subsequent development of cervical cancer, may be prevented by primary measures which include the use of effective vaccines against sub-types available in only 40% of LMIC compare to 80% of high-income countries (HIC). [3, 14] The WHO has proposed to have 90% of adolescent girls fully vaccinated against HPV by the age of 15 years. [15] This is part of a global strategy to eliminate cervical cancer as a public health problem. Cervical cancer screening is an essential secondary measure deployed to identify the pre-malignant lesions including the moderate/high grade cervical intraepithelial neoplasias (CIN 2 and CIN 3) as well as HPV nucleic acid testing. [8, 16] The WHO proposes to have 70% of women screened by 35 years of age by 2030 for these pre-cancerous lesions using a high-performance test equivalent to or better than HPV nucleic acid testing. [15] The modalities for cervical cancer screening have evolved from visual inspection with acetic acid (VIA), visual inspection with Lugols iodine (VILI), conventional (Papaniculaou) cytology, liquid-based cytology, and cytology with HPV co-testing to HPV testing alone as a primary screening measure. [16] The International Agency for Research in Cancer (IARC) Working Group concluded from the analyses of various studies that HPV DNA testing was superior to the other screening measures in reducing cervical cancer incidence and mortality. [17] Currently, WHO recommends HPV nucleic acid testing as a primary screening modality for cancer of the cervix, but in resource, limited settings cytology and, VIA can be used until a full transition to using HPV DNA. [18].

Generally, screening programs are believed to be less implementable in countries with low source settings, weak health systems lacking in well-trained health professionals and a low level of awareness about the disease accounting for the increased cervical cancer mortality rate in developing countries. [19] While some studies have shown that women in sub-Saharan Africa generally have a low level of awareness of cancer of the cervix, the risk factors and screening modalities. [20, 21] none was found among PHC attendees in this area.

The Medical women association of Nigeria (MWAN), Akwa Ibom state chapter operates a Well Woman Clinic that offers health education and free health services including Cervical cancer screening using the VIA technique to consenting women in the state and environs. The Clinic collaborates with the Gynaecological oncology unit of the University of Uyo Teaching Hospital where positive cases are referred to for further evaluation and treatment. The antenatal clinics receive women of reproductive age with clients from all strata of the socioeconomic divide who are at risk of cervical cancer. This study aimed to determine the awareness of antenatal clinic attendees in primary health centres in Uyo metropolis about cervical cancer, its risk factors and preventive modalities as well as determine the attitude and practice of these women towards screening.

2. Materials and Method

2.1. Study Area/Centres

Uyo is both a local Government Council and capital of Akwa Ibom state in South-south Nigeria. Located between latitude 5.05° North and Longitude 80° East, had a total population of 429,900 people as of 2016 projected from the 2006 National census.

The Nigeria Health Facility Registry (HFR) of the Federal Ministry of Health identified 817 health facilities in Akwa Ibom state, 87 of which are situated in Uyo; 27 of them are primary health centres. [22] In this study, three PHCs health facilities were selected within Uyo Metropolis Viz PHC Operational Base, Wellington Bassey Way, PHC, Abak road and PHC Itam all within Uyo Urban based on consideration for higher patronage for antenatal care (ANC) services.

2.2. Study Design

A descriptive cross-sectional questionnaire-based study design was used to assess the knowledge, attitude and utilisation of cervical cancer screening among pregnant women attending antenatal clinics in Uyo, South-south Nigeria.

2.3. Study Population

The study population was the pregnant women who were attending the antenatal clinics (ANCs) in the designated primary health centres in Uyo, Akwa Ibom State, South-south Nigeria during the study period. The calculated sample size was distributed to the chosen PHC using the ratio of the

preceding year's total antenatal care client attendance from their registers.

2.4. Sample Size

The minimum sample size for this study was made up of 317 women. This was determined using a previous study in Ebonyi state, Nigeria, in 2012 where 25.0% of the women were aware of cervical screening methods. [23].

The formula below was used to determine the minimum sample size for the study:

Fisher's formula [24]:

$$n = \frac{z^2pq}{d^2}$$

Where: n = minimum sampling size;

z = standard normal deviate, usually constant given as 1.96;

p = prevalence of the factor from previous study p = 25.0% =25.0/100, p = 0.25;

q = probability of something not happening (given as 1- p, 1- 0.25 q = 0.75;

d = degree of precision was (given as 0.05^2);

By substitution n = 288, plus 10% attrition rate = 317, which was rounded 320 and used.

2.5. Sampling Technique

The chosen sample size of 320 was carried out conveniently and purposively through total coverage of women who attended the clinics in the period between June to August 2018. This was done serially to all consenting women till the desired number for sample size was attained per centre. The ratios of the total antenatal clinic attendance for the preceding year was used for the distribution of questionnaires to the three selected primary health centres.

2.6. Inclusion and Exclusion Criteria

All women presenting for antenatal care clinic who consented were recruited till the desired number for the centre was attained; while all women who declined consent or were in the clinic for reasons other than antenatal care were excluded from the study.

2.7. Data Collection and Analysis

Trained Interviewers administered the pretested structured questionnaires at the sites to the respondents. The instrument which was a questionnaire consists of three sections; section A consisted of questions on the participants´ demographic characteristics, section B elicited information on participants' awareness and knowledge of cervical cancer, its screening and other modalities of prevention while section C sort their agreement on certain attitudes and practices. Completed copies of the questionnaires were retrieved the same day, they were administered.

The data was cleaned, entered and analysed using Statistical Package for Social Sciences (SPSS) for windows version 20.0. Results were presented in tables and charts. Descriptive statistics (mean and standard deviation) was performed for continuous variables and categorical using proportions.

2.8. Ethical Clearance

The researchers obtained an introduction letter from the Coordinator of Community Health Officers' Training School, University of Uyo Teaching Hospital to the Heads of selected health facilities to allow the research assistants to carry out the study in the clinic. The participants were informed that participation is strictly voluntary and that they are free to withdraw from the study any time they so wish. Both verbal and written consents were obtained only consenting women were given questionnaires. Ethical clearance was obtained from the Teaching Hospital ethical committee.

3. Results

Out of the 320 questionnaires sent out, 296 were complete and corrDectly filled giving a response rate of 92.5% which was analysed. The mean age of respondents was 34.7 years with a standard deviation of 8.9 years. The majority (76.7%) had post-secondary education. Most 206 (69.6%) were married. A greater proportion had had 2 sexual partners 122 (41.2%). and a quarter (25%) had been pregnant twice. (Table 1).

Table 1. *Sociodemographic and Clinical Characteristics of Respondents.*

Characteristics	Frequency	Percentage
Age Groups		
Less than 40 years	213	72.0
40 years and above	83	28.0
Mean Age 34.7 ± 8.9 (Range 17-80)		
Level of education		
No formal education	3	1.0
Primary education	19	6.4
Secondary education	47	15.9
Post-secondary education	227	76.7
Marital Status		
Never married	62	20.9
Married	206	69.6
Separated/divorced	18	6.1
Widowed	10	3.4
Lifetime Sexual Partners		
1	112	37.8
2	122	41.2
3	46	15.5
4	5	1.7
5	9	3.0
6	2	0.7
No. of times pregnant		
Never	50	16.9
1	66	22.3
2	74	25.0
3	59	19.9
4	29	9.8
5	11	3.7
6	2	0.7
7-9	5	1.7

The majority of respondents 259 (87.5%) have heard about cervical cancer and the commonest source of information about cervical cancer was from health workers 116 (44.8%). The top 2 clinical features known was abnormal vaginal bleeding 177 (59.8%) and foul-smelling vaginal discharge 157 (53.0%). The 2 common risk factors mentioned were sex at early age 145 (49.0%) and multiple sexual partners 135 (45.6%) with the use of oral contraceptive pills being the least risk factor known 91 (30.7%). preventive strategies known by respondents were quitting smoking (53.4%), avoiding early sexual intercourse (49%) and avoiding multiple sexual partners (48.3%) (Tables 2 & 3).

Table 2. *Awareness of Cervical Cancer among Respondents.*

Characteristics	Frequency	Percent
Heard of cervical cancer		
Yes	259	87.5
No	37	12.5
First source of information (n=259)		
News media	38	14.7
Posters, brochures	81	31.3
Health workers	116	44.8
Family friends	13	5.0
Religious leaders	4	1.5
Teachers	7	2.7

Table 3. *Knowledge of Features of Cervical cancer among Respondents.*

Variables	Frequency	Percent
Clinical features		
Abnormal vaginal bleeding	177	59.8
Foul-smelling vaginal discharge	157	53.0
Fever	109	36.8
Abdominal swelling	79	26.7
Risk Factors for Cervical Cancer		
Multiple sexual partners	135	45.6
Sex at an early age	145	49.0
HPV infection	117	39.5
Cigarette smoking	134	45.3
Family history	93	31.4
Use of Oral contraceptive pills	91	30.7
Poor genital hygiene	104	35.1
Prevention Strategies		
Avoid multiple sexual partners	143	48.3
Avoid early sexual intercourse	145	49.0
Quit smoking	158	53.4
HPV vaccination	121	40.9
Good genital hygiene	119	40.2

More than half of the respondents 186 (62.8%) knew that there are screening measures for cervical cancers and less than a quarter knew that all sexually active women should be screened 46 (15.5%). The 2 common screening method known was HPV DNA test 140 (47.3%) and pap smear 117 (39.5%) respectively. The majority 186 (62.8%) have heard of cancer prevention with health workers 103 (38.4%) as the commonest source of information. More than half of respondents 176 (59.5%) were aware of cervical cancer screening n the state with most respondents 73 (24.7%) knowing that MWAN offers such screening services. Only 15 (15.2%) of respondents have ever been screened and the commonest reasons for non-screening were respondents not feeling at risk 68 (27.1%) and unaware of screening 57 (22.7%) (Table 4).

Table 4. *Respondents' knowledge of screening procedures for cervical cancer.*

Characteristics	Frequency	Percent
Are there screening procedures for ca cervix		
Yes	186	62.8
No	110	37.2
How frequent should screening be Done?		
Once per year	85	28.7
Once every 3 years	47	15.9
Once every 5 years	22	7.4
Don't know	142	48.0
Who to screen for cervical cancer		
Girls	146	49.3
All sexually active women	46	15.5
Women 25 years and above	19	6.4
Prostitutes	32	10.8
Elderly women	18	6.1
Don't know	35	11.8
Awareness of free cervical screening in the state		
Yes	176	59.5
No	120	40.5
Awareness of organizations offering services		
Akwa Ibom state government	29	9.8
Nigerian Medical Association	43	14.5
National Assoc of Nig. Nurses and midwives	40	13.5
Medical women association of Nigeria	73	24.7
Ever been screened for cervical cancer		
Yes	45	15.2
No	251	84.8
Reasons for not screening (n=251)		
Unaware of screening	57	22.7
Not feeling at risk	68	27.1
May be painful	33	13.1
Screening may be embarrassing	31	12.4
Afraid of a positive outcome	21	8.4
Husband declines	8	3.2
Afraid cervical cancer may be revealed	8	3.2
Screening expensive	25	10.0
Haven't just decided	35	13.9
Other reasons	8	3.2

The majority of respondents had a positive attitude towards screening for cervical cancer. 167 (56.4%) agreed that ca cervix is highly prevalent in Nigeria, 177 (60%) agreed that it is a leading cause of death among all female malignancies, 213 (72%) agreed that any adult woman can acquire ca cervix. (Table 5).

Table 5. *Attitude of respondents towards cervical cancer screening.*

Variables	Strongly agree N (%)	Agree N (%)	Indifferent N (%)	Disagree N (%)	Strongly disagree N (%)
Carcinoma of the cervix is highly prevalent in our country	69 (23.3)	98 (33.1)	54 (18.2)	43 (14.5)	32 (10.8)
Cervical cancer is a leading cause of death among all female malignancies	68 (23.0)	109 (36.8)	51 (17.2)	44 (14.9)	24 (8.1)
Any adult woman including you can acquire cervical carcinoma	82 (27.7)	131 (44.3)	37 (12.5)	21 (7.1)	25 (8.4)
Cancer of the cervix cannot be transmitted from one person to another	71 (24.0)	92 (31.1)	25 (8.4)	86 (29.1)	22 (7.4)
Screening helps in the prevention of cancer of the cervix	83 (28.0)	144 (48.6)	24 (8.1)	30 (10.1)	15 (5.1)
Screening causes no harm to the client	67 (22.6)	160 (54.1)	38 (12.8)	22 (7.4)	9 (3.0)
Screening for premalignant cervical lesions is not expensive	52 (17.6)	128 (43.2)	67 (22.6)	37 (12.5)	12 (4.1)
HPV vaccine can prevent cervical cancer	56 (18.9)	154 (52.0)	47 (15.9)	29 (9.8)	10 (3.4)
HPV is dangerous and causes harm to children	54 (18.2)	77 (26.0)	51 (17.2)	79 (26.7)	35 (11.8)
HPV vaccine is expensive	57 (19.3)	55 (18.6)	85 (28.7)	71 (24.0)	28 (9.5)

4. Discussion

Cervical cancer is associated with serious morbidity and mortality, especially among women living in sub-Saharan Africa, hence knowledge of the risk factors and other associated features is necessary for timely presentation for care and intervention.

The majority of the participants (87.5%) in our study had heard of cervical cancer mostly from health workers, printed literature and news media. This outcome was not unexpected as more than 75% of the participants had attained a post-secondary level of education, were antenatal clinic attendees where health information dissemination is cardinal and integral to service provision. The awareness level of cervical cancer among our participants was not significantly different from a study among female undergraduates by Getaneh et al where 90.1% of respondents were aware of cervical cancer. [25] In a Teaching Hospital in Khartoum-Sudan and two other studies in Zaria Nigeria however, the awareness rate was less than ours at 50.0%, 66.7% and 66.9% respectively. [26-28] The women in our study demonstrated an overall better level of knowledge of the symptoms and risk factors for cervical cancer compared to the participants in Ethiopia and Zaria. [25, 27, 28] Earlier studies in two rural suburbs in Lagos showed a very low awareness rate of 4.2% and 12.8% in 2012 and 2018 respectively. [29, 30] The reason for these differences is uncertain; one would expect little difference or even none as about half of the participants in our study, and virtually all the participants in the Ethiopian study were educated respectively. The difference may be a function of the variation in other sociodemographic characteristics of the populations studied and the time difference between the various studies as a repeat in the sites of earlier studies may show an improvement in awareness of cervical cancer. [30].

More than 60% of the participants in this study had had at least more than one-lifetime sexual partner while over 80% of the women had been pregnant at least once. Earlier studies in Lagos, Nigeria similarly showed a high prevalence of major risk factors for cervical cancer among respondent. [29] These findings are consistent with the observations of Wilson et al. [31] which suggested that women with more lifetime partners and those who engaged in unprotected sexual activities were more likely to be at an increased risk for the HPV acquisition and progression to cancer of the cervix.

More than 60% of the respondents in our study were aware of cervical cancer screening with nearly the same proportion (59.5%) of women being aware of the availability of cervical cancer screening services within their immediate locality. However, only 24.7% were aware of the free cervical cancer screening offered by the Medical women association of Nigeria (MWAN), Akwa Ibom state chapter, and fewer still (only 15.2%) had ever been screened for cervical cancer. This shows a very low uptake and utilisation of available cervical cancer screening services. Although the rate of cervical cancer screening among respondents reported by Humeriya et al (26.2%) [29] may have been higher than that in our study, the reasons given for not screening were similar to those given by our respondents including concerns about a positive test, pain and embarrassment. A low level of cervical cancer screening practice/uptake was found by other earlier researchers. [29, 33, 34] A rather interesting finding by Ferreira de Melo et al [35] showed that, although the women demonstrated low knowledge about screening (35.2%) a much higher proportion (70.6%) underwent screening for cervical cancer. It was thought that a promise of financial benefits may have been the motivation.

Despite the poor screening uptake of only 15%, most of the respondents in our study agreed that cancer of the cervix was highly prevalent in our environment, and believed that screening was safe and could help prevent cervical cancer. In a study by Omotunde and Ademola, [36] respondents also agreed that screening for cervical cancer would prevent the condition as well as its associated serious morbidities.

5. Conclusion

The knowledge of cervical cancer for both the disease, its risk factors and screening was good; but despite a positive attitude towards screening modalities and the respondents` inherent high lifetime risk for cervical cancer, only a few are aware of the free services offered by MWAN and fewer had ever been screened. There is therefore the need for further awareness creation and health education programs on cervical cancer prevention to increase their uptake of available screening modalities among women attending these

clinics. The failure of their knowledge to translate to good practise should be addressed targeting the mitigators to screening such as cost, fear of outcome, availability and more information on available free services. There is also the need to replicate this study in primary health centres in rural and other settings to understand the true state of knowledge and practice of cervical cancer and its screening in the region.

Conflict of Interest

There are no conflicts of interest.

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