



## Knowledge, Attitude and Practices of Cervical Cancer Screening among Female Teachers in an urban community in Lagos, Nigeria

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### Abstract

**Background:** In Nigeria, inadequate regular screening services for cervical cancer as well as poor uptake of available cervical cancer screening modalities continue to challenge cervical cancer prevention. This study seeks to assess the knowledge, attitude and practices of cervical cancer screening among female secondary school teachers whose effective role in the communication and motivation of young students have been largely documented in literature.

**Methodology:** This was a descriptive cross-sectional study conducted among 273 female teachers in Oshodi-Isolo Local Government Area of Lagos State selected by the multi-stage sampling method. Data was collected using self-administered questionnaire and analyzed using Epi info 7.2 statistical software. The Chi-square tests was used to determine statistical associations. A p-value of <0.05 was considered statistically significant.

**Results:** The mean age of the respondents was  $39.7 \pm 8.6$ . Respondents were mostly married 219(80.2%) in monogamous family setting 175(64.1%). Majority 224(80.2%) had an overall poor knowledge of cervical cancer and only 73(26.7%) could correctly link HPV as a cause of cervical cancer. Multiple sexual partners 52(19.1%), and early sexual onset 45(16.5%) were the commonest risk factors known by respondents. Although majority had a positive attitude 249(91.2%) towards cervical cancer screening, overall practice was however majorly poor 246(90.1%).

**Conclusion:** Our result demonstrates an overwhelming majority of female teachers had poor knowledge and poor cervical cancer screening practices. This highlights the need for effective dissemination of information on cervical cancer and screening to teachers to foster effective transmission of accurate information about cervical cancer to young students.

**Keywords:** Cervical cancer; Teachers; Knowledge; Screening.

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## Introduction

Cancer is a global problem of public health importance. Among the various types of cancers existent is cervical cancer which is the development of abnormal cells in the cervix.[1] It is the fourth most common cancer and also the fourth leading cause of cancer-related deaths in women globally.[2] Cervical cancer is a disease that occurs in women, and is usually linked to Human papilloma virus (HPV), which accounts for about 99.7% of cervical cancer cases.[3] It is a preventable disease, yet it is the most common cancer in the African Region where it accounts for 22% of all female cancers and 12% of all newly diagnosed cancer in both men and women every year.[4] Most women in Africa with the disease present late and are diagnosed at advanced stage of cancer which is affiliated with most of the poor outcomes.[5] It is expected that the incidence of cervical cancer in developing countries will rise from 444,546 to 588,922 between 2012 and 2025.[2]

Teachers have been shown to intellectually challenge and motivate students by setting standards and encouraging learning.[6] They are encouraged to not only be concerned with their students' academic goals but with other aspects of their lives including their reproductive and sexual health.[7] As regards cervical cancer, content knowledge cannot be over-emphasized for any effective teacher. It is important that teachers are adequately aware about the subject matter as what is transmitted as information to students is what is known by the teachers. Poor knowledge of cervical cancer and screening options among Teachers ultimately translates into poor quality of learning for students. [8] Teachers use different types of teaching method to communicate to their students and one of such methods is teaching by example which is important when it comes to encouraging young adolescents to take up healthy practices such as uptake of screening options. Students can become motivated when they are aware of the screening habits of their teachers. [9]

The high burden of cervical cancer in Nigeria, like most of the low and middle income countries (LMICs), is majorly due to the high prevalence of Human Papilloma virus (HPV) infection, poor awareness and knowledge about cervical cancer and its screening strategies amongst other factors.[10,11]The formulation of the HPV vaccine has been attributed to the recorded decline in the incidence rate of cervical cancer.[12] In developed countries, the rates of cervical cancer have been seen to have reduced drastically due to the use of various screening tests that aid early detection of pre-cancerous lesions before the development of invasive cancer.[13,14] This unfortunately has not been possible in resource-limited countries such as Nigeria, because of the poor availability screening tests and poor uptake of available screening options.[15,16]

Screening ensures that cervical cancer is detected at an early stage when it can be treated more effectively. [17] Current evidence-based recommendation for cervical cancer screening supports the use of Papanicolaou (Pap) smear.[18] Other alternatives are Visual Inspection with acetic acid [VIA], Visual inspection with Lugol's iodine [VIL], speculscopy and cervicography. These have been explored in developing countries that lack sufficient resources.[8] and although these alternative tests are less invasive, faster and less cumbersome, they have been found to be less sensitive compared to the Pap smear.[19] This study seeks to assess the level of knowledge, attitude and practice of cervical cancer screening among female secondary school teachers who play an effective role in the communication and motivation of young students. Teachers have the capability to enhance healthy behaviors among generations thus an assessment of their knowledge, attitude and practices is essential to ascertain any potential gaps in cervical cancer information to future generations The findings from this study will add to the body of knowledge on cervical cancer and could also serve as a baseline for future research.

## Subject and Methods

### Study design and Setting

The study was a descriptive, cross-sectional study among female teachers in Oshodi -Isolo Local government Area (LGA), an urban community in Lagos, Nigeria conducted over a two-month period from August to November 2016.

### Brief description of the study area

Oshodi- Isolo LGA is located in the Lagos-West Senatorial District of Lagos state. It consists of 20 administrative wards. The study was conducted in public schools located in Oshodi-Isolo LGA. There are six education districts in Lagos state. Oshodi-Isolo LGA is the sixth district, and it is divided into three zones which include; zone 1 (Ikeja), zone 2 (Mushin), zone 3 (Oshodi-Isolo). Zone 3(Oshodi-Isolo) division has 47 public secondary schools which comprises of 22 senior secondary schools and 25 junior secondary schools. There are about 1500 teachers in Oshodi-Isolo division and there are about 980 female teachers out of which 539 teachers are for the junior secondary schools and 441 teachers are for the senior secondary schools.

### Study population (inclusion criteria, exclusion criteria)

Female teachers who were 18 years and above.

### Inclusion criteria

Female teachers below 18 years of age who had been teaching in secondary schools in Oshodi-Isolo LGA for over 6 months.

#### Exclusion criteria

Female teachers with a personal history of cervical cancer were excluded from the study.

#### Sample Size Estimation

The minimum sample size was determined using the formula

with absolute error margin of 5% ( $d = 0.05$ ), type 1 error of 5% ( $Z = 1.96$ ), and proportion of women with cervical screening uptake ( $p$ ) of 11.1% from the previous study. [20] The calculated minimum sample size required for the study was 273. This was further adjusted to compensate for non-response rate of 10% to give a final minimum sample size of 300.

#### Sampling Method

The participants were selected by multistage sampling; firstly, using simple random sampling by balloting, fifteen out of a list of forty-seven (47) public secondary schools obtained from the educational district (VI) were selected. The schools selected include central junior high school, Ansarudeen senior high school, Ijeshatedo senior high school, Central junior high school, Okota senior high school, Okota junior high school, Irekari junior high school, Ajumoni junior high school, Central senior high school, Ijeshatedo junior high school, Oshodi junior high school, Ansarudeen junior high school, Ewutuntun junior high school, Ewutuntun Senior high school, Illamoye junior grammar School, Oshodi senior high school. In the second stage, twenty teachers were selected within each of the 15 schools by systematic sampling using a sampling fraction of 15. A total of 300 respondents in all.

#### Data collection method

A pretested structured and self-administered questionnaire was used as the survey tool to collect the data in the study. The questionnaire was developed from previous studies.[21-24] The questionnaire was divided into five sections (A-E) seeking information about the socio-demographic characteristics, Reproductive and Sexual History of Respondents, knowledge of cervical cancer, attitude and practices of cervical cancer screening services among the female teachers. Sociodemographic detail of respondent collected include age, marital status, nationality, religion, and ethnicity. Cognitive Knowledge of cervical cancer was assessed using a total of 15 questions on awareness, risk factors, symptoms of cervical cancer, and screening options. Attitude to cervical cancer screening was assessed using 11 questions on 5-point Likert scale and lastly, practice was assessed using 3 close-ended questions.

#### Scoring and data analysis

The respondents' knowledge of cervical cancer screening was scored "good" and "poor" based on the 15 knowledge constructs in the questionnaire. Each question was scored 1 if correctly answered or 0 if a wrong or 'I don't know' response was given. The highest knowledge score obtainable was 15. Respondents' attitudes were assessed based on 11 attitude statements. Scores of 1, 2, 3, 4, 5 were assigned to 'strongly disagree', 'agree', 'Not sure', 'Disagree', or 'strongly agree' responses respectively on the Likert scale. The highest possible obtainable attitude score was 55, and a cut-off for positive or negative attitudes was based on the median score of 27, hence scores of 27 and below were termed "negative" attitude while scores over 27 were termed "positive" attitude. The respondents' cervical cancer screening practice was scored "good" and "poor" based on 3 screening practice constructs in the questionnaire. Each practice question was scored one if the action was practiced and zero if not practiced, the highest possible obtainable practice score was 3. Scores less than 2 were termed poor practice and scores of 2 and above were considered as good screening practice.

Epi Info version 7 was used in data analysis. The results were presented in form of tables showing descriptive frequencies, and proportions. The Chi-square test and the T-test were used to test for associations between knowledge, attitude and practice of cervical cancer screening. Association was statistically significant if the two-tailed probability was less than 5% ( $p < 0.05$ ).

#### Ethical consideration

Ethical approval was obtained from the Health Research Ethics Committee of the Lagos University Teaching Hospital (HREC Number: ADM/DCST/HREC/APP/ 014). Permissions were obtained from the LGA authority at the locations where the study was conducted. Participants were informed about the nature and purpose of the study and written informed consent was obtained from each participant before each interview. They were not required to fill in their names or initials on the questionnaires to maintain anonymity, and all the information collected was treated with confidentiality. Participants were informed of the voluntary nature of their participation and that they could withdraw from the study at any time without any loss of benefits to which they were otherwise entitled.

## Results

A total of 300 questionnaires were administered and retrieved. Eventually 273 questionnaires were properly filled and submitted for analysis, yielding a response of 91%. Most 122(44.7%) of the teachers were between the ages of 31 and 40 years with a mean of  $39.7 \pm 8.6$ . There was a greater proportion 209(76.6%) of Christian teachers compared to other religions and most of them were married 219(80.2%). More than half 158(57.9%) of the female teachers were of Yoruba origin (Table 1).

The age of sexual debut for most 189(73.5%) of the teachers was between the ages of 16 and 25 years. Majority 181(66.5%) of the teachers had a single lifetime sexual partner with only 26(11.4%) giving birth to 5 or more children. Majority 177(77.0%) had their first marriage between 21-30 and were found to have mostly 192(85.7%) birthed their first child between 21-30 (Table 2).

The study found that more female teachers 164(60.1%) practiced family planning however majority 151(55.3%) were not currently on any. Natural method 32(26.2%) and injectables 27(22.1%) were the most commonly used methods of family planning. (Table 2) All the teachers 273(100.0%) had heard of cervical cancer majorly from hospital visits and health workers 77(28.2%), many however were unfamiliar with the cause of cervical cancer 116(97.5%), its symptoms 144(52.8%) and risk factors 133(48.7%) (Table 3).

Majority of the Female teachers in the study area knew that cervical cancer could be detected early 134(49.1%) mostly by Pap smear 17(29.8%) information which they majorly acquired from visits to the hospital and from health workers 40(22.8%). Most female teachers believed cervical cancer survival chances increases with early detection 74(55.2%) and screening should be for mostly sexually active ladies 75(56.0%) which should be done once a year 48(45.7%). Many did not know about the HPV vaccine 186(68.1%) and which age groups should receive them 40(46.0%) (Table 4).

Majority 163(59.7%) strongly agreed that cervical cancer is a deadly disease and would avail themselves for screening/check-up if it was free 120(44.0%). Only 62(22.7%) of the teachers have been screened for cervical cancer. Reasons mostly sighted for not screening include not having heard about screening options 71(35.7%), not feeling at risk 28(14.1%) as well as presumed expensive cost 25(12.1%) (Table 5, Table 6).

Although majority 248(90.8%) of them had never been vaccinated with HPV vaccine, most however 176(64.5%) were willing to vaccinate their daughters. (Table 6). Respondents' knowledge and attitude towards cervical cancer screening showed a statistically significant association with screening practice of cervical cancer ( $p < 0.001$  respectively) (Table 6, Table 7).

Table 1: Sociodemographic Characteristics, Reproductive and Sexual History of Respondents

Variable	Frequency (n = 273)	Percentage (%)
<b>Age group (years)</b>		
<30	43	15.8
31 – 40	122	44.7
41 – 50	74	27.1
>50	34	12.5
<b>Tribe</b>		
Yoruba	158	57.9
Igbo	93	34.1
Hausa	14	5.1
Others	8	2.9
<b>Marital Status</b>		
Married	219	80.2
Single	43	15.8
Widowed	6	2.2
Separated	4	1.5
Divorced	1	0.4
<b>Type of marriage</b>		
Monogamous	175	64.1
Polygamous	44	16.1
<b>Religion</b>		
Christianity	209	76.6
Islam	55	20.2
Traditional	9	3.3

Table 2: Reproductive, Gynecological and Social History of Respondents

Variable	Frequency	Percentage (%)
<b>Ever had sex (n = 273)</b>		
Yes	257	94.1
No	16	5.9
<b>Age at onset of sexual activity (years) (n = 257)</b>		
≤15	5	1.9
16-25	189	73.5
26 – 35	51	19.8
36 and above	12	4.7
<b>Number of current sexual partners (n = 257)</b>		
<2	230	89.5
≥2	27	10.5
<b>Number of lifetime sexual partners (n = 257)</b>		
<2	181	66.5
>2	75	29.2
<b>Number of lifetime pregnancies (n = 257)</b>		
0	28	10.9
1-3	118	45.9
>3	111	43.2
<b>Number of children delivered (n = 229)</b>		
0	5	2.2
<5	198	86.5
>5	26	11.4
<b>Age at first marriage (years) (n = 230)</b>		
≤20	32	13.9
21 – 30	177	77.0
>30	21	9.1
<b>Age at first birth (years) (n = 224)</b>		
Below 20	5	2.2
21 – 30	192	85.7
>30	27	12.1
<b>Ever used family planning (n = 273)</b>		
Yes	164	60.1
No	109	39.9
<b>Presently on family planning (n =273)</b>		
No	151	55.3
Yes	122	44.7
<b>Type of family planning presently used (n = 122)</b>		
Natural method	32	26.2
Injectables	27	22.1
IUCD	24	19.7
Barriers	23	18.9
Pills	9	7.4
Traditional	4	3.3
Others	3	2.5
<b>Ever been a smoker (n = 273)</b>		
No	257	94.1
Yes	16	5.9

Table 3: Knowledge of Cervical Cancer Risk factors and Symptoms Among Respondents

Variable	Frequency (n = 273)	Percentage (%)
<b>Ever heard of cancer of the cervix</b>		
Yes	273	100.0
No	0	0.0
<b>Sources of information*</b>		
Hospital visit/Health workers	77	28.2
Friends/Relatives/Colleagues	58	21.3
Television	41	15.0
Radio	40	14.7
Newspaper/Magazine	21	7.7
Books	15	5.5
<b>Know the primary cause of cervical cancer</b>		
No	207	75.8
Yes	66	24.2
<b>Causes of cervical cancer*</b>		
---	116	97.5
Human papilloma virus	73	26.7
Curse from the village	35	12.8
Prolonged use of IUCD	28	10.3
Having gonorrhoea	26	9.5
Use of contraceptives	18	6.6
Having multiple children	8	2.9
Internet	2	1.7
Church	1	0.8
<b>Cervical cancer is sexually transmitted</b>		
No	200	73.3
Yes	69	25.3
Don't know	4	1.5
<b>Symptoms of cervical cancer*</b>		
Don't know	144	52.8
Foul smelling vaginal discharge	45	16.5
Intermenstrual bleeding	34	12.5
Pain during sexual intercourse	32	11.7
Post-coital bleeding	24	8.8
Post-menopausal bleeding	18	6.6
Lower abdominal pain	16	5.9
Back pain	2	0.7
<b>Risk factors for cervical cancer*</b>		
Don't know	133	48.7
Having multiple sexual partners	52	19.1
Early sexual onset	45	16.5
Sexually transmitted diseases	39	14.3
Use of contraceptive pills	17	6.2
Family history of cervical cancer	13	4.8
Poor hygiene	9	3.3
Having many children	8	2.9
Smoking	6	2.2
Being HIV positive	6	2.2
Low socio-economic status	4	1.5
Being above 40 years	2	0.7
Poor diet	2	0.7

\*Multiple responses allowed

Table 4: Knowledge of Cervical Cancer Screening and Vaccination Among Respondents

Variable	Frequency	Percentage (%)
<b>Cervical cancer can be detected early(n = 273)</b>		
Yes	134	49.1
No	77	28.2
Don't know	62	22.7
<b>Ever heard of tests to detect cervical cancer early(n = 134)</b>		
No	71	52.9
Yes	57	42.5
Don't know	6	4.5
<b>Tests for early detection of cervical cancer *(n = 57)</b>		
Pap smear	17	29.8
Visual inspection with acetic acid (VIA)	8	14.0
Don't know	26	45.6
<b>Sources of information* (n = 57)</b>		
Hospital visit/Health workers	40	22.8
Television	27	15.4
Friends/Relatives/Colleagues	21	12.0
Books	15	8.6
Radio	9	5.1
Newspaper/Magazine	8	4.6
<b>Early detection of cervical cancer improves chances of survival (n = 134)</b>		
Yes	74	55.2
No	60	44.8
<b>Know anyone who has had cervical cancer(n = 273)</b>		
No	237	86.8
Yes	36	13.2
<b>Know if there is a vaccine for HPV (n = 273)</b>		
No	186	68.1
Yes	87	31.9
<b>Who is to receive the vaccine (n = 87)</b>		
< 15 years	18	20.7
> 25 years	9	10.3
15 - 25years	20	23.0
Don't know	40	46.0
<b>When should screening commence(n = 134)</b>		
Once she is sexually active	75	56.0
Don't know	29	21.6
When she is still a virgin	24	17.9
When she is no longer sexually active	6	4.5
<b>How often screening should be done(n = 105)</b>		
Once a year	48	45.7
Don't know	27	25.7
Once in two years	16	15.2
Once in three years	12	11.4
Once in 4 years	2	1.9
<b>Overall knowledge on cervical cancer (n = 273)</b>		
Poor Knowledge	224	82.0
Good Knowledge	49	18.0

\*Multiple responses allowed

Table 5: Attitude Towards Cervical Cancer Screening Among Respondents

Variable (n = 273)	Strongly agree (%)	Agree (%)	Not sure (%)	Disagree (%)	Strongly disagree (%)
Cervical cancer is a deadly disease if not screened and treated	163 (59.7)	62 (22.7)	35 (12.8)	11 (4.0)	2 (0.7)
Cervical cancer is a disease that can be gotten through unsafe sexual practices	97 (35.5)	79 (28.9)	52 (19.1)	24 (8.8)	21 (7.7)
Any woman including you can acquire cervical cancer	101 (37.0)	76 (27.8)	61 (22.3)	12 (4.4)	23 (8.4)
People should go to a health care provider for check-up even though they are feeling well	156 (57.1)	38 (13.9)	48 (17.6)	21 (7.7)	10 (3.7)
Cervical cancer cannot be cured if one has it	74 (27.1)	54 (19.8)	77 (28.2)	43 (15.8)	25 (9.2)
Screening/ check-up helps in preventing cervical cancer	108 (39.6)	87 (31.9)	46 (16.9)	27 (9.9)	5 (1.8)
Do you think it is helpful to detect cervical cancer early	128 (46.9)	83 (30.4)	49 (18.0)	11 (4.0)	2 (0.7)
Screening/check-up causes no harm to a woman	100 (36.6)	85 (31.1)	67 (24.5)	19 (7.0)	2 (0.7)
Screening/check-up for cervical cancer is not expensive	87 (31.9)	67 (24.5)	92 (33.7)	21 (7.7)	6 (2.2)
I will screen for cervical cancer, if screening/check-up is free	120 (44.0)	78 (28.6)	53 (19.4)	21 (7.7)	1 (0.4)
I will screen for cervical cancer if check-up causes no harm	117 (42.9)	88 (32.3)	49 (18.0)	13 (4.8)	6 (2.2)
<b>Attitude toward cervical cancer screening</b>	<b>Frequency (n = 273)</b>	<b>Percentage (%)</b>			
Negative attitude	24	8.8			
Positive attitude	249	91.2			

Table 6: Practices on Cervical Cancer Screening Among Respondents

Variable	Frequency	Percentage (%)
<b>Ever been tested for cervical cancer(n = 273)</b>		
No	199	72.9
Yes	62	22.7
I am intending to	12	4.4
<b>Ever had a visual inspection of the cervix(n = 62)</b>		
No	47	75.8
Yes	10	16.1
Don't know	5	8.1
<b>Ever had a pap smear(n = 62)</b>		
No	47	75.8
Yes	11	17.7
Don't know	4	6.5
<b>Reasons for not testing for cervical cancer*(n = 199)</b>		
Never heard of it	71	35.7
Not at risk	28	14.1
Costly	25	12.6
Afraid	25	12.6
Partner will not allow	20	10.1
No time	18	9.1
Poor health worker attitude/facilities	8	4.0
Not sexually active	3	1.5
Never thought of it	1	0.5
<b>Ever been vaccinated with the HPV vaccine(n = 273)</b>		
No	248	90.8
Yes	25	9.2
<b>Would consider vaccinating your daughter(n = 273)</b>		
Yes	176	64.5
No	97	35.5
<b>Reasons for not considering to vaccinate daughter*(n = 97)</b>		
Unknown future side effects	31	32.0
Costly	12	12.4
Not at risk	10	10.3
Safety of vaccine administration	7	7.2
Short-term side effects	5	5.2
Conformity with religious beliefs	4	4.1
Availability	4	4.1
Effectiveness of vaccine	3	3.1
No time	3	3.1
Social acceptability	3	3.1
Afraid	3	3.1
Poor health worker attitude/facilities	3	3.1
<b>Overall practice of cervical cancer screening(n = 273)</b>		
Poor practice	246	90.1
Good practice	27	9.9

\*Multiple responses allowed

Table 7: Association Between Respondents' Knowledge/Attitude and Screening Practice of Cervical Cancer

	Practice		X <sup>2</sup>	p-value
	Good	Poor		
<b>Knowledge</b>				
Good	21(42.9)	28(57.1)	72.856	<0.001
Poor	6(2.7)	218(97.3)		
<b>Attitude</b>				
Good	19(7.6)	230(92.3)	16.227	<0.001
Poor	8(33.3)	16(66.7)		

## Discussion

This study was carried out to determine the level of knowledge of cervical cancer screening among female teachers in Oshodi-Isolo local government, Lagos, assess their attitude towards cervical cancer screening and find out their practices towards cervical cancer screening. Lack of awareness has been identified as one of the contributing factors to the high prevalence of cervical cancer in developing countries compared to the developed world. [25] This study reports that all the respondents 273(100.0%) had heard of cervical cancer. This comes as expected given that the study was conducted among respondents whom most had attained a tertiary level of education. A higher level of education enables easier access to relevant information and resources about different subjects. This high awareness reported is in contrast to previous studies conducted in Ogun [26] and Lagos [27] states where only 6.5% and 15% were aware of the disease respectively. This may be linked to the low educational level of the respondents in the previous studies which may limit their access to information. Also Living in peri-urban and urban areas such as our study location has been associated with better access to information about cervical cancer. [28]

The commonest source of information about cervical cancer screening was from health workers and hospital visits 77(28.2%), same as a study carried out in Ogun State [26] and in Zaria [20] both in Nigeria. This is however in contrast to a study conducted in Aleshinloye community in Ibadan where it was found that most respondents got information from radio, family and friends [29]. Accessible health insurance schemes these days which have been extended to cover more of the population now provides improved health-seeking behavior as many people can now get information during hospital visits.[30,31] The lower cadre workers and lower levels of education in the respondents in the Ibadan study may explain why most of their information was not from health workers which they would have access to if they visited the hospitals more often.

The knowledge of cervical cancer was awfully poor 224(82.0%) from the study among female teachers in Oshodi-Isolo local government and only slightly over a quarter of respondents could correctly link HPV as a cause of cervical cancer. This result reflects that information on cervical cancer in Nigeria as seen in the level of awareness has not been significant enough in creating good knowledge as demonstrated by the respondents overall poor knowledge level. A similar study conducted in Gabon corroborates our finding of poor knowledge of cervical cancer as the study reports an overall poor knowledge on cervical cancer with only 22.7% of women knowing the causes of cervical cancer. [32] This finding is also corroborated in an Ethiopian study.[33] This reported poor knowledge can be ascribed to the inadequate health education programs regarding cervical cancer which is believed to be the problem of most developing countries.[34]

A greater proportion of women knew nothing about the cause, risk factors, symptoms and preventive measures against cervical cancer. In similar studies conducted in Ethiopia and Gabon majority of the respondents did not know about the risk factors for cervical cancer.[32][35]This poor knowledge about risk factors discovered in these African studies appear contrary to findings obtained from an urban city in England, where majority were aware of the risk factors of cervical cancer.[36] This difference may be due to the possible average educational level of the respondents in the different studies and their access to information. This poor knowledge of cervical cancer risk factors may explain the low screening rate and will therefore mean many women will be unaware of their status.

While majority of the female teachers felt that cervical cancer can be detected early, over half of the respondents who knew about cervical cancer detection had never heard of a test to detect cervical cancer early. In those who had heard of test for early detection, pap smear test was the commonest test known. This is similar to a study carried out in tertiary institution in Niger Delta Nigeria where majority were aware of cervical cancer screening and Pap smear was the most popular screening test mentioned by respondents.[37] The level of awareness of cervical cancer screening methods was discovered to be even much higher in a similar study conducted in Zaria, Nigeria.[38] The popularity of pap smear has also been reported in South-East Nigeria,[39] and North-Central Nigeria.[23] Although The WHO recommends the use of visual inspection with acetic acid (VIA) and visual inspection with Lugol's Iodine (VILI) as the screening methods for cervical cancer in low-resource settings, many women in Nigeria are not aware of these methods possibly due to the fact that there are no programs that implement such screening methods and also because cervical cancer screening in Nigeria is mostly opportunistic as many of the women attend tertiary centers where Pap smears are the available cervical screening options owing to the skills and facilities in these centers.



The findings of poor awareness to other cervical cancer screening options particularly HPV Test is significant because the society of gynecology and obstetrics in Nigeria now recommends HPV testing as the recommended screening method for cervical cancer in Nigeria, yet awareness of this method remains poor among Nigerian women. [40] A similar study in Ruvuma, Tanzania reported overall poor knowledge on cervical cancer screening with over two-fifths of the respondent ignorant about cervical cancer screening for premalignant lesions with less than a quarter of respondents having been screened.[41] This can be ascribed to the largely lower level of education amongst the respondents in the study. Although, many women knew the purpose of screening as a preventive measure against cervical cancer many however did not know people who have had cervical cancer. This figure comes rather surprising despite the increasing incidence of cervical cancer in Nigeria. It is possible that many of these women do know people with the disease however these people have not had a histologic diagnosis owing to poor health seeking behavior among Nigerians that have been repeatedly reported in literature.

Regarding the source of information about pap smear; hospital ranked the highest in this study but this in contrast to the study carried out among the Sudanese women as regards pap smear test where the media ranked the highest. [42] By receiving their source of information from the hospital, problems associated with the use of the media such as omission of many details and, providing avenues for questions and answers are tackled. This buttresses the fact that healthcare providers remain pivotal in educating the general public about cervical cancer.[43] Only few of the respondents knew about a vaccine for HPV, this is similar to a study that was carried out in Sudan in which over three-fifths of the respondent did not know about vaccination.[42] This comes expectedly as Nigeria is still largely at the secondary level of prevention with regards to cervical cancer prevention where attention is being focused on screening the population at risk of the disease.

Most female teachers believed that cervical cancer survival increases with early detection and screening should be mostly for sexually active ladies and should be done once a year. This is similar to studies conducted in Ethiopia and Zimbabwe where most of the respondents agreed that early detection increases survival of early detection. [44,45] This increased knowledge about screening could be due to the effect of improved cervical cancer awareness campaigns. Early detection through screening remains an invaluable tool for reducing the morbidity and mortality caused by cervical cancer.

Our study on attitude of the female teachers showed that, majority had very good attitude towards cervical cancer screening. A study conducted in Limpopo, South Africa reported positive attitude to cervical cancer screening. [46] Most respondents believed that screening helps in early detection of the disease, this is similar to a study carried out in Zimbabwe.[50] Screening tests help ensure cervical cancer detection is early when treatment can be most successful. Screening prevents most cervical cancers by finding pre-cancerous cells so treatment can be instituted promptly before malignant transformation. Despite the poor knowledge, the attitude towards Pap smear tests was positive, with majority acknowledging that they would be worried and seek medical attention if they felt any signs of cancerous lesions.[50] Most of the female teachers were willing to be screened if offered free screening or if it was inexpensive, this is similar to a systematic review conducted in sub-Saharan Africa which showed that removal of screening costs and increasing women's perceived benefits of screening does leads to increased uptake of screening modalities.[47] The cost related concern expressed by respondents from these studies comes expectedly owing to the poverty level described in many developing nations with many individuals barely having enough and hence have little funds set aside to seek for health care services.

The uptake of cervical cancer screening among female teachers is sadly low and this is really alarming. While majority of respondents have not been screened, only very few said they intended to. This is similar to a study conducted among women living in an urban community in Lagos where majority had low awareness rate and uptake of cervical cancer screening including Pap smear despite a relatively good awareness of the disease.[48] Other studies in Nigeria as well as among other developing countries have reported poor uptake in Nigerian urban cities.[49,50, 51,52] This finding supports the submission that cervical cancer screening in many low- and middle-income countries is mostly opportunistic for most women attending health facilities where available.[53] Sadly even as health facilities make effort to make available these services, the uptake of cervical cancer screening, especially with Pap smear has still remained low.[54] It is possible that as countries begin to make advancement in healthcare and generally improve awareness about cervical cancer, an increased uptake of screening modalities will be recorded.

The most frequently cited reason for not being screened among respondents was that they had never heard of it. This is similar to a study carried out in Ogun state, where only a few had been screened and the major reason sighted for non-uptake of screening services was the lack of awareness.[26] This is also similar to a study done in Enugu where less than a quarter had received at least a Pap smear test with all of the screening done as an opportunistic screening exercise and majority had not screened due to unawareness.[55] The provision of a national screening program as well as making cervical cancer screening services available, may therefore, not be the only major factor concerned parties must tackle to enhance cervical cancer screening rate in our environment; as this has not translated to increase in uptake of cervical screening options women in low-

and middle-income setting like Malaysia [56]. Hence more efforts need to be put in place as regards increased awareness concerning cervical cancer screening.

Disapproval from partners and fear have been identified as possible reasons for non-uptake of cervical cancer screening options. This comes expectedly as Nigeria like many African countries has strong cultural values and family ties and husbands are the key decision takers in most homes. Women would often seek the approval of their spouses concerning their health care. They are seen also expressing caution with regards to requesting certain health care services from healthcare providers to avoid being tagged women of low virtues by their spouses. Almost two-fifths of the respondents said they won't vaccinate their daughters mostly due to unknown future side effects. This comes expectedly as the fear of potential side effects of medications has always plagued new vaccines hence it is the responsibility of concerned bodies to organize awareness campaigns centered around dispelling myths surrounding HPV vaccination.

From our study there was statistical significance between the knowledge and attitude towards cervical cancer and screening uptake as respondents that had good knowledge and positive attitude towards cervical cancer had good screening practices ( $p < 0.001$  respectively). This comes expectedly as respondents that have good knowledge are more likely to have good attitude.

### Conclusion

This study shows that although the awareness of cervical cancer among female teachers in Oshodi-Isolo Local government is adequate, majority lacked sufficient knowledge of the disease. With the incidence of cervical cancer on the increase in this part of the world there ought to be adequate awareness and knowledge about the disease especially to teachers as they are pivotal in transmitting information to young adolescents. Information should be accurate, concise, easy to understand and communicated in a way that cuts across any barriers which may be posed by religious and cultural beliefs. Affordable screening and vaccination will also help in reducing the high incidence of cervical cancer in this part of the world.

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