

HETEROSEXUAL BEHAVIOUR, AWARENESS AND PRACTICE OF CERVICAL CANCER SCREENING AMONG FEMALE STAFF AND STUDENTS IN A PRIVATE TERTIARY INSTITUTION IN SOUTH-SOUTH, NIGERIA

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Abstract

Background: Cervical cancer is preventable and curable if detected early enough through regular and timely screening programmes.

Objective: To determine the heterosexual behaviour, awareness and practice of cervical cancer screening among female staff and students of a private tertiary institution in South-south Nigeria.

Methods: A descriptive cross sectional study of 393 female respondents using semi-structured, self-administered questionnaires designed for this study. Data was analyzed using statistical package for social sciences (SPSS) version 17. Tests of statistical significance were carried out using chi square tests for proportions. **A p value of < 0.05 was considered significant.**

Results: About forty six percent of respondents had penetrating sex before the age of 20years. Half of the respondents had sexual intercourse in the last one year but less than half of them have screened for cervical cancer. The awareness level about cervical cancer screening was high, (73.77%). The difference in the awareness level between students and staff of the institution was statistically significant ($\chi^2 = 7.38$, $p=0.0065$, $df=1$). The practice of cervical cancer screening was also low (22.4%). There was a statistical significance between the ages of respondents and the practice of cervical cancer screening ($\chi^2 = 132$, $p= 0.0000$, $df =4$) and also marital status and practice ($\chi^2 = 7.52$, $df=1$, $p=0.006$).

Conclusion

The study shows that most of the sexually active respondents have one sexual partner. High awareness level of cervical cancer screening did not equate to high practice of the screening procedures.

Introduction

Cervical cancer is a major public health problem world over. It is the most common gynaecologic cancer in women¹ and most common type of cancer in women worldwide after breast cancer.² It is the most common cancer in women in the third world, where over three quarters of the estimated half a million newly diagnosed cases occur annually.^{3,4}

As many as 80% of diagnosed cases are detected in the advanced stages in which treatment, even when available has a markedly reduced likelihood of success.⁵ The World Health Organization (WHO) estimates that the contribution of cervical cancer to adult female death is 35%.⁶ The incidence rate of cervical cancer in Nigeria is 25/100,000 while the reported prevalence rates for Human Papilloma Virus (HPV) in the general population and HPV in women with

cervical cancer are 26.3% and 24.8% respectively.⁷ The HPV is a known infectious risk factor for cervical cancer. In Bayelsa state, Nigeria an incidence of 1.5% in 2011 was reported.⁸

Cervical cancer is a key reproductive health problem for women particularly in the developing countries where screening services are lacking or inaccessible for the majority.⁹ However, it is preventable because a detectable and treatable pre-invasive disease precedes it by about a period of 10-15 years.¹⁰ The incidence, morbidity and mortality of cervical cancer have all been on decline in developed countries due to the availability of cervical cancer screening programmes.^{11,12} Unfortunately in developing countries like Nigeria, the morbidity and mortality from the disease is very high due to lack of organised screening programmes.¹³ The success of any screening programme however depends on its acceptance and utilization by the target population.¹⁴

In a previous study in Nigeria among 159 female health workers in Sokoto, revealed high awareness level (96.7%) of cervical cancer screening but a low screening rate of 4.4%.¹⁴ In a pilot study that assessed the knowledge and attitude towards cervical cancer and human papilloma virus in Gwagwalada Area Council of Abuja, among 400 urban and rural dwellers, it was found out that very small proportions knew about this disease. Knowledge was higher among the old and those with higher level of education.⁷ In another study done in Sokoto among female health workers, there was high awareness level of cancer of the cervix and cervical screening (98.6%) and good knowledge ($\geq 50\%$) about cancer of the cervix.¹⁵ A study done among female students and staff in a tertiary institution in the Niger Delta revealed a high awareness level of cervical cancer (70% of students, 80% of staff) but awareness of cervical cancer screening was higher among the students than staff (56.2% versus 36%) and the difference in the level of awareness was statistically significant ($\chi^2 = 11.73$, $P=0.001$).¹⁶

In Kenya, similar studies among female primary school teachers in Kasarani division showed that 87% of the women were aware of cervical cancer, while 75% knew about the Pap smear test.¹⁷ Among them only 39% knew that HPV infection was a risk factor for developing cervical cancer while only 41% have ever had a Pap smear test done.

At present, there is a paucity of data from the study area on heterosexual behaviour, awareness and practice of cervical cancer screening. This if available, could provide useful information to researchers and policy makers in identifying specific problems and developing strategies for improvement. It is against this backdrop that this study was designed to determine the heterosexual behaviour, awareness and practice of cervical cancer screening in a private tertiary institution in South-south, Nigeria.

Methodology

Study area

Madonna University is one of the first generation private universities in Nigeria. It has its administrative headquarters in Elele, South south Nigeria and two other campuses in Okija, Anambra state and Akpugo, Enugu state. The institution has a total population of about 15,000 students and staff strength of 2000. This study was done in Elele campus.

Study design

This was a cross-sectional descriptive study.

Study population

This comprises all the female staff and students of Madonna University Elele Rivers state at the time of this study.

Sample size determination

The minimum sample size of 384 was calculated using the Cochran formula for cross sectional surveys.¹⁸⁻²⁰

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

Where n= sample size; E = Tolerable Error of margin = (0.05); p= is the proportion in the target population estimated to have a particular characteristic. p is therefore the proportion of staff and students with awareness about cervical cancer screening. Since there are no studies regarding this topic in this locality, p is taken as 50%. q= proportion of people = 100-50 = 50% (0.5), while z= standard normal deviate at 95% confidence interval= (1.96).

A total of 400 questionnaires were administered to allow for attrition. However after data cleansing 393 questionnaires were available for analysis.

Inclusion and exclusion criteria

Consenting female staff and students of the institution, who are of reproductive age (15-49 years), were used for the study. While those less than 15 years as well as those who were within the age brackets needed for the study but were unwilling to participate were also excluded.

Sampling Technique

Multistage sampling was used for the recruitment of study participants.

Stage one: The female staff and students had a population of 500 and 4000 respectively. This gave a ratio of 1:8. Stratified sampling method was used for the selection of the number to be studied from the population of female staff and students. Thus by proportionate allocation for a sample size of 400, 44 female staff and 356 students were selected.

Stage two: There are five faculties in Elele campus, so simple random sampling method (balloting) was used to select five departments (one department from each faculty), from which the students to be used for the study were selected. These are departments of Pharmaceutical Science, Medical Laboratory Science, Medicine and Surgery, Microbiology and Computer Science were selected. The sample size for students was equally divided among these five departments. This gave 71 respondents from each department.

Stage three: Using simple random sampling method (balloting), two classes were further selected from each department; 200 and 300 levels (Pharmaceutical Science), 200 and 500 levels (Medical laboratory Science), 400 and 500 levels (Medicine), 200 and 300 levels (Microbiology) and 300 and 400 levels (computer Science).

Stage four: The number of respondents for each department (71) was further divided between the two classes. This gave 36 respondents for each class in a department. And simple random sampling method (balloting), was used to select study subjects from these classes.

Simple random sampling method by table of random numbers was used to select the female staff to be studied. The selected individuals who refused to participate were replaced by the next available persons.

Data collection technique

Data collection in this study employed pretested, self administered semi-structured questionnaires. Information obtained was on socio- demographics as well as hetero-sexual behaviour; awareness and practice of cervical cancer screening among female staff and students in Madonna University Elele, Rivers state.

Data management and analysis

Data was analyzed using statistical package for social sciences (SPSS) version 17. Tests of statistical significance were carried out using chi square tests for proportions. Results were presented in tables for easy appreciation.

Ethical consideration

Approval to conduct the study was obtained from the department of community medicine, Madonna University, Elele Rivers State. Informed consent was sought and obtained from the respondents

Limitations of the study

Limitations of the study include; those inherent to questionnaire-based studies such as subjective response and recall bias. However, on the administration of the questionnaires, time was taken to explain some of the questions to avoid ambiguity. Respondents who could not fill the questionnaires immediately were given a minimum of two days before collection. Reminding phone calls were also put up where necessary.

Results

A total of 393 questionnaires were analysed out of the 400 administered giving a response rate of 98.25%. Of the 393 questionnaires, 44 were staff and 349 students. Table 1 shows the socio-demographic distribution of respondents. The age range was between 15-42 years with a mean age of 22.6 ± 5.0 years. Majority of our respondents, 349, (88.8%) were not married.

Table 2 shows the awareness of cervical cancer screening by respondents. Most of them have heard of cervical cancer screening but the difference in the awareness level of cervical cancer screening between the students and staff of MUTH is statistically significant ($\chi^2=7.38$, $p=0.0065$, $df=1$). For those that demonstrated awareness, the highest source of information was obtained from radio/television followed by physician/health workers and then seminar/workshop.

High vaginal swab was the most recognized cervical screening test mentioned by respondents (52.2%) while vaginal examination was wrongly thought to be a screening test by 45.0% of respondents only 27.5% were aware of PAP smear and 10.2% for VIA.

Table 4 shows the sexual behaviour of respondents and their corresponding cervical cancer screening practice. About 46.2% of the respondent had their first coital exposure before the age of 20years, of these only 5.5% had done cervical cancer screening of any kind. The table shows that the older the respondents were before first coital exposure the more likely they were to be screened for cervical cancer. There was a statistical significance between the age at first coital exposure and the practice of cervical cancer screening ($\chi=158.34$, $df=2$, $p=0.0000$).

About 23.3% of the sexually active respondents have multiple sexual partners while 76.7% claim to have one sexual partner. Respondents that had 2-3 multiple sexual partners practiced cervical cancer screening the most (64.9%). Those with only one sexual partner were next in practice of cervical cancer screening (42.7%). There was a statistically significant difference between the number of sexual partners of respondents and their corresponding cervical cancer screening practice (fisher's Exact = 6.74, $df=2$, $p=0.0039$). Also 46.4% of the staff who had sexual intercourse in the last one year under review have screened for cervical cancer while 45.5% of students who had sexual intercourse in the last one year screened for cervical cancer. There was no statistical significance between the sexual exposure in the last one year of staff and student and the corresponding cervical cancer screening. ($\chi^2 = 0.01$, $p= 0.92$, $df=1$).

Table: 5 shows the reason for non-uptake of cervical cancer screening and most of the respondents (44.27%) saw embarrassment as the major reason followed by fear.

Table: 6 show the general practice of cervical cancer screening by respondents. It was found out that respondents between the ages of 30 – 34year (60%) have undergone more cervical cancer screening test compared to others. This was followed by those between the ages of 25 – 29 years. There was statistical significance between the ages of respondents and the practice of cervical cancer screening. ($\chi^2 = 132$, $df=4$, $p= 0.0000$). About 21.5% of students and 29.6% of staff have screened for cervical cancer. There was no statistical significance between the occupation and the practice of cervical cancer screening.

Also about 38.6% and 20.3% of the married and single respondents have screened for cervical cancer respectively. There is a statistically significant difference between marital status and practice of cervical cancer screening ($\chi^2 = 7.52$, $df=1$, $p=0.006$). Parous respondents of more than 3 children were the most screened for cervical cancer (71.4%) followed by those who had between 2-3 children. The higher the parity, the more likelihood of cervical cancer screening uptake among respondents. Though there was no statistically significant difference between parity of respondents and their corresponding practice of cervical screening (Fisher's Exact= 2.88, $df=2$, $p=value =0.2117$).

Discussion

Most of the respondents were aware of cervical cancer screening, about three-quarters of students and more than half of the staff). This high awareness level may be as a result of the study being done within the university environment and the students were in science departments. Similar studies done among female health workers in Sokoto State Nigeria yielded high level of awareness among these group^{14, 15}. Also the study carried out among female students and staff in a tertiary institution in Niger Delta revealed a higher level of awareness of cervical

cancer screening among students when compared to staff (56.2% versus 36%)¹⁶. This result is slightly lower than what we obtained in our study (75.93% students and 56.81% staff). The difference in the level of awareness among the students and staff in both studies were statistically significant ($\chi^2=11.73$, $p=0.001$ and $\chi^2= 7.38$, $P=0.0065$) respectively¹⁶.

Information on cervical cancer screening was mostly obtained from radio/TV (43.2%), newspaper 20.9% while only 33.3% got the information from physicians/Health workers. This reveals the need for inclusion of cervical cancer into health talks given to patients and clients that present in the hospital. This result is also similar to that obtained in the Niger Delta¹⁶.

Only 27.5% of respondents knew PAP smear to be a screening test for cancer. This is in contrast with the study done in Kenya among 384 female primary school teachers where 75.0% of them knew PAP smear as a cervical cancer screening test¹⁷. Vaginal examination was wrongly thought to be a screening test by 45.0% of respondent. This is a worrisome finding as many women would undergo vaginal examination for one reason or the other. These may ignorantly think they have been screened for cervical cancer and have a false hope and satisfaction of being free. This underscores the need for passing across correct and adequate information to patients and clients.

Slightly less than half of our respondents had their first sexual intercourse before the age of 20, while 23.4% had multiple sexual partners. This is comparable to a study among 421 undergraduate female students in Ibadan, where 51.7% had their first sexual intercourse before age 20 and 57% had multiple sexual partners²¹. The difference in the number of sexual partners and age at first coital exposure as well as the practice of cervical cancer screening was statistically significant ($\chi^2=6.74$; $df= 2$; Fisher's Exact Test=0.00039 and $\chi^2= 158.34$; $df=2$; $P=0.0000$) respectively. Among respondents who had coital exposure in the past one year under review 46.4% of staff and 45.5% of students had done a cervical cancer screening. The difference between the staff and students was not statistically significant ($\chi^2=0.01$; $df=1$; $P=0.92$)

About 44.3% of respondents saw embarrassment as the major reason for not going for screening and this have similar trend with a study done in Niger Delta¹⁶. The fears associated with cervical cancer screening should be allayed with correct health promotion programmes.

Only 22.4% of our respondents have undergone cervical cancer screening. Various studies from different parts of the country revealed different levels of cervical cancer screening practice. In Sokoto among 159 female health care givers, 4.4% had done cervical cancer screening.¹⁴ Also in Sokoto among 240 female health workers, 10% had done cervical cancer screening.¹⁵ In Ibadan among 421 undergraduates 8.3% had done PAP smear²¹. These proportions are far less than that of a study done in Kenya among 384 female primary school teachers where 41% of respondents have done PAP smear.

Conclusion and Recommendations

The study shows that the high level of awareness of cervical cancer screening among staff and students of Madonna University did not translate to high practice of the screening procedures. Early sexual exposure of respondents gives a worrisome trend as it has been found to be a confounder for the development of cervical cancer while multiple sexual partners is a major risk factor.²¹ Thus there is need to include cervical cancer and other related cancers into the health talks been delivered in hospitals. This will increase source of knowledge for patients and clients. Health promotion programmes as well as cervical cancer screening should be integral parts of antenatal care.

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Table 1: Socio-demographic Characteristics of Respondents

Variables	Frequency (n =393)	Percentage (%)
Age (Years)		
15-19	77	19.6
20-24	254	64.6
25-29	20	5.1
30-34	24	6.1
35 and above	18	4.6
Mean age of respondents = 22.6±5.0		
Marital Status		
Married	44	11.2
Single	349	88.9
Occupation		
Student	349	88.8
Staff (Civil Servants)	44	11.2
Educational Status		
Primary	0	0.0
Secondary	14	3.6
Tertiary	379	96.4

Table 2: Awareness of Cervical Cancer Screening

Variable	Heard of cervical screening? n=393.					
	Yes	(%)	No	(%)	Total	(%)
Students	265	(75.9)	84	(24.1)	349	(100)
Staff	25	(56.8)	19	(43.2)	44	(100)
Total	290	(73.8)	103	(26.2)	393	(100)

$\chi^2 = 7.38$; p-value = 0.006; df=1

Source of information for Cervical Cancer

(For those that demonstrated awareness; multiple response applicable) N=290

Source	Frequency	Percentage
Friends	97	24.7
Radio /TV	170	43.2
Newspaper	82	20.9
Seminar/workshop	109	27.7
Physician/health workers	131	33.3
Relations	27	6.9
August meeting	7	1.8
Church	7	1.8

Table 3: Cervical Cancer Screening Tests Mentioned by Respondents (multiple response applicable) N=290

Screening Test	Frequency	Percentage
High vaginal swab	205	52.2
Endocervical swab	66	16.8
Vaginal examination	177	45.0
PAP smear	108	27.5
VIA	40	10.2
No response	87	22.1

Table 4: Association of Sexual Behaviour of respondents and their uptake of cervical cancer screening
Variable:

Age at first coital exposure: n=238

Age	% f/nx100	Screening Done?				Total	(%)
		Yes	(%)	No	(%)		
≤19	46.2	6	(5.5)	104	(94.5)	110	(100)
20-24	20.6	9	(18.4)	40	(81.6)	49	(100)
>24	33.2	73	(92.4)	6	(7.6)	79	(100)
Total	100.0	88	(37.0)	150	(63.0)	238	(100)

$\chi^2=158.34$; df= 2; p-value= 0.0000

Sexual Experience in the last one year: n=193

Occupation	Yes	Screening Done?		Total	(%)	
		(%)	No			(%)
Staff	13	(46.4)	15	(53.6)	28	(100)
Student	75	(45.5)	90	(54.5)	165	(100)
Total	88	(45.6)	105	(54.4)	193	(100)

$\chi^2=0.01$; p-value=0.92; df=1

Number of sexual partners of respondents: n=189

Sexual partners	% f/nx100	Screening Done?				Total	(%)
		Yes	(%)	No	(%)		
1	76.7	62	(42.7)	83	(57.2)	145	(100)
2-3	19.6	24	(64.9)	13	(35.1)	37	(100)
>3	3.7	2	(28.6)	5	(71.4)	7	(100)
Total	100	88	(46.6)	101	(53.4)	189	(100)

$\chi^2=6.74$; df=2; Fisher's Exact Test p=0.0039

Table 5: Main Reason of Respondents' for not Screening for Cervical Cancer.

Main reason	Frequency	Percentage
Fear	28	10.9
Expensive	18	7.7
Religion	7	3.1
Embarrassment	105	44.5
No reason	80	33.8
Total	238	100

Table 6: Association of some variables with uptake of Cervical Cancer Screening

Variable	Uptake of Cervical Cancer Screening		Total Freq.(%)
	Yes (%)	No (%)	
Age			
15-19	6 (3.2)	182(96.8)	188 (100)
20-24	9(11.8)	67(88.2)	76 (100)
25-29	37(56.9)	28(43.1)	65(100)
30-34	27(60)	18(40)	45(100)
Above 35	9(47.4)	10(52.6)	19(100)
Total	88(22.4)	305(77.6)	393(100)
$\chi^2=132.1$	df=4; p-value=0.0000		
Occupation			
Student	75(21.5)	274(78.5)	349(100)
Staff	13(29.6)	31(70.5)	44(100)
Total	88 (22.4)	305(77.6)	393(100)
$\chi^2=1.46$	df= 1; p-value=0.227		
Educational Status			
Secondary	2(14.2)	12(85.7)	14(100)
Tertiary	86(22.7)	293(77.3)	379(100)
Total	88(22.4)	305(77.6)	393(100)
$\chi^2=0.549$	df=1; Fisher's Exact p-value =0.744		
Marital Status			
Married	17(38.6)	27(61.4)	44(100)
Single	71(20.3)	278(79.7)	349(100)
Total	88(22.4)	305(77.6)	393(100)
$\chi^2=7.52$	df=1; p-value=0.006		
Parity (n=33)			
1	4(33.3)	8(66.7)	12(100)
2-3	8(57.1)	6(42.9)	14(100)
>3	5(71.4)	2(28.6)	7(100)
Total	17(51.5)	16(48.6)	33(100)
Pearson's $\chi^2=2.877$	df= 2; fishers Exact p-value=0=2117		