BARRIERS TO UTILIZATION OF CERVICAL CANCER SCREENING SERVICES AMONG NON-MEDICAL FEMALE PERSONNEL IN TERTIARY HOSPITALS IN SOUTH WEST NIGERIA.

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ABSTRACT

Context: Cervical cancer is the second most common cancer among women and contributes significantly to cancer related deaths among women worldwide. Women knowledge and practice of screening for pre malignant lesions vary significantly. Studies on this subject had focused mostly on either medically informed health care workers or lay community persons but hardly on non-medically informed hospital workers who forms the bulk of health workers and influences health behaviors equally or even more.

Objectives: To assess women's knowledge, attitude and practices towards cervical cancer screening and the barriers to utilizing cervical cancer screening services among non-medical female personnel in two tertiary centers in South West Nigeria

Study Design, Setting and Subjects: The study is a descriptive cross-sectional study among female non-medical personnel in OOUTH Sagamu and LAUTECH Ogbomosho in southwestern Nigeria. A self-administered questionnaire was used to collect data from 280 women, which was analyzed using SPSS 21 statistical software.

Main Outcome Measures: The study measured knowledge, practices and barriers to utilization of screening services.

Results: Awareness is 84.3% and knowledge of screening is 77.5%. Utilization rate is low at 15%; indecision, 32.4%, feeling of good health, 28.2% and fear of positive results, 18.1% are the main reasons for not screening. Low level of education and poor knowledge of the disease are discovered as the most significant barriers and determinants of utilization rate.

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Conclusion and Recommendation: Women education in context specific terms is recommended as the intervention to improve screening practices amongst women of reproductive age group.

INTRODUCTION

Cervical cancer is the second most common cancer and a leading cause of death among women worldwide representing 15-25% of female cancers, . According to the World Health Organisation (WHO) in 2012, there was more than 530,000 new cases worldwide and 270,000 death with over 85%occurring in developing countries[1].

The true incidence of cervical cancer in many African countries is unknown as there is grossunder-reporting. An estimated number of 70 722 new cases of invasive cervical cancer (ICC) occur annually in sub-Saharan Africa and it is responsible for one-quarter of all female cancers[2]. ICC incidence in sub-Saharan Africa is one of the highest in the world with an estimated overall age-standardized incidence rate (ASR) of 31 per 100 000 women and varies by region with 42.7 in East Africa, 38.2 in Southern Africa, 28 in Central Africa and 29.3 in Western Africa[3],[4]

In Nigeriadata analyzed from two population based cancer registries, the Ibadan Population Based Cancer Registry (IBCR) and the Abuja Population Based Cancer Registry (ABCR) covering a 2 year period 2009-2010 showed that the age standardize rate (ASR) for Cervical cancer was 36.0 per 100000 and 30.3 per 100000 respectiively[5].

Human Papilloma Virus (HPV) is the primary etiologic agent of cervical cancer and over 100 types of HPV strains exist. High risk types HPV-16, -18, -31, - 45accounts for more than 90% of cervical carcinoma. HPV-16 is the most often foundandin Nigeria HPV 16 accounts for 41% of cervical malignancies[6]. Transmission of HPVoccurs primarily by sexual contact or by skin-to-skin contact[7].

Known predisposing factors for HPV infection and hence cancer of the cervix include early age atfirst sexual intercourse, multiple sexual partners, a male consort who in turn has hadintercourse with multiple women also confers a significant risk, smoking and in womenwho are immunosuppressed[8].In addition to screening for precursor lesions, vaccination of young women, promoting sexual health, limiting the number of sexual partners, avoiding or quitting smoking andminimizing exposure to environmental tobacco and consuming diet rich in freshvegetables and fruits may help reduce the risk of cervical cancer[9].ThePapanicolaou smear screening for cervical cancer is the gold standard for screening, but issues around its access and affordability has led to development of alternate low technology screening modalities like visual inspection with acetic acid (VIA) which has demonstrated high sensitivity fordetecting Cervical Intraepithelial neoplasm (CIN) and cervical cancer, but limited by its low specificity[10].In Nigeria, as in other Sub-Saharan African countries, screening is very rudimentary and uptake as well as coverage is very low[11], [12]. Studies in the past on knowledge of screening services has shown varying levels especially among medical personnel; knowledge rates ranged between 52.8% of the respondents in a study in mixed population in Owerri[13]to 87% among nurses in Nnewi, South East Nigeria.[11]. This high level of awareness raises questions of possible bias due to the occupation and clinical exposure of the population studied; this study is therefore designed to help understand the perceived and real barriers

towards screening for premalignant cervical lesions among a homogenous population of non-medical female personnel in health facilities.

METHODOLOGY:

The study is adescriptive cross-sectional study with stated objectives as above. Study participants are Non-medical female personnel aged between 15 and 60 years **old**in OOUTH Sagamu, Ogun State and LAUTECH, Ogbomosho Oyo state Nigeria. Medically qualified staff i.e. Nurse, doctor, Community Health Extension Workers (CHEWs) are excluded.

The sample size was determined using the statistical formula:

$$N = \frac{Z^2 pq}{d^2}$$

Where

N= minimum sample size required, Z= constant; a confidence level of 95% = 1.96,

p= measure of prevalence or proportion of event in percentage = 15.4% = 0.15, q= opposite of p = 1-p = 1- 0.15 = 0.85 and d= precision value (95% confidence interval) = 0.05

Therefore, $N = \frac{(1.96)^2 \times 0.15 \times 0.85 = \textbf{195.9}}{0.05 \times 0.05}$

20% non-respondent value was added to the value above:$(= \frac{20 \times 196 = \textbf{39.2}}{100})$

Hence, minimum sample size = **196 + 39 = 235**

Recent study by Saad Aliyu Ahmed et al in a KAP study on cervical cancer screening among market women in Zaria documented a practice level of 15.4% among participants[15]**Allnon-medical female personnel in all the non-medical units of the** **hospitalswereincluded in the study (Total sampling method)..** The total number of staff identified in both institutions was 295 personnel.

Data obtained from the questionnaires (Appendix A)wasentered and analyzed using Statistical Package for Social Sciences (SPSS) version 22.0. Results were presented as list formats, frequency tables, charts, ratios and simple proportions. The degree of association were measured using odd ratio in linear regression analysis. Confidentiality of study participants were assured and we didnot collect any identifiable responders information

RESULTS:

A total of 280 non-medical female staff of both teaching hospitals filled and returned the questionnaires (94.5% response rate). The mean age group of the respondents was 34.81 ± 9.75. Christian constitutes 77.1% (216) while 61 (21.8) are Muslims, the rest practice traditional religion. Most of the respondents 171 (61.1%) are married while 97 (34.6%) are single, the rest are either divorced or widowed.

Approximately 98% of respondents had formal education; 280 (68.5%), 71 (25.4%) and 14 (5.0%) had tertiary, secondary and primary education respectively. Majority, 104 (37.1) are junior staff while 23 (8.2%), 101 (36.1%) and 52 (18.6%) are management, senior and casual staffs respectively. Most of the respondents, 148 (52.9%) had between 1-4 children while 25% (71) had more than five (5), the remaining 61(21.8%) are nulliparous.

Awareness on Cervical Cancer:

The level of awareness on cervical cancer is very high; 84.3% from this results. The major source of information is through health care workers (58.5%) and news media (45.3%). Participant's knowledge of the risk factors for cervical cancer is high and appropriate with multiple sexual partners, early

intercourse and HPV virus infection being identified by 58.5% (138), 41.1% (97) and 37.7% (89) of participants respectively for each risk factor. In the same manner, the symptoms of full blown cervical cancer were correctly identified by the respondents; vaginal bleeding, foul smelling vaginal discharge and weight loss were identified by 61.4%, 53.8% and 29.7% of respondents. A high proportion of participants also correctly identified preventive measures; 58.5% (138), 41.5% (98), 37.7% (89) identified avoidance of multiple sexual partners, early intercourse, screening and treating of early stages respectively as means of preventing the disease.

In addition to above findings, majority of the participants is aware that treating cervical cancer is expensive and will require mostly drugs or surgery to manage it.

Knowledge on screening for premalignant lesions

About three quarter (77.5%) of the respondents is aware of screening procedure to detect early cases of cervical cancer, but very few can actually identify any particular screening method, 52.9% did not know any such procedures.

Attitudes towards screening for pre malignant lesions

In line with the attitudes demonstrated on cervical cancer, majority of the respondents either agreed 150 (53.6%)or strongly agreed 84 (30.0%) that screening for premalignant lesions prevent carcinoma and reduce deaths. Majority also believed that screening is not expensive.

Practice towards screening for premalignant lesions

Despite the encouraging attitude and the knowledge towards cervical cancer screening, the uptake rate for the procedure is very low at 15; this low level of uptake may not be unconnected with the fact that they actually do not know what test to request for by name among other reasons.

For those who had never undergone the screening,

the most important reason is indecision to screen (77 (32.4%)) which may not be unconnected with the believe of being healthy (n=67; 28.2%)) which is the next most important reason. Thereafter, is the fear of a positive result 43 (18.1%), which indicates for increased education of women to improve screening decision.

Despite the above barriers to screening, and overwhelming majority of respondents agree to screen if they are assured of safety and no harm 242 (86.4%); making the service free will be additional incentive to screening.

The cost of the service does not seem to be a barrier to utilizing screening services from this study. Only about 10% of the study group gave this as a reason why they will not screen.

Determinants of attitude and Practice to Screening for premalignant lesions:

From the multivariate analysis shown in the table below, low level of education and poor knowledge are the most important factors that constitute barriers to screening for pre malignant lesions.

Being of middle age 20-29 years (OR 9.74, P=0.021), having children (OR 7.83, P=0.005), married (OR 8.21 P=0.004, and being a Muslim are factors positively correlated with utilizing screening services. While low levels of education and poor knowledge of cervical cancer and screening are likely barriers to utilizing screening services.

DISCUSSIONS

The major findings in this study includes the following:

Eighty Three per cent (84.3%) of participants showed a high level of awareness of cervical cancer and screening for its precursor lesions; knowledge on risk factors, prevention and treatment of cervical cancer was also commensurately high. Despite the high knowledge and awareness, utilization of screening services was very low at 15 per cent. The

major barrier to utilizing services is low educational status and poor education of women of the consequences of not screening.

The major strength of tis study is in its ability to validly document practice standards across all cadres of women irrespective of medical knowledge thus demonstrating a key health behaviour peculiar of women; it is a also a multicenter study thus helping to remove selection bias based from participant geographical location. The major weakness is being an observational study, scientific associations are difficult to establish between documented barriers and possible reasons.

Women in their reproductive age, especially those in health care setting are now aware of a lot about cervical cancer and screening for its precursor lesions; 84.3% of study participants demonstrated high levels of awareness on cervical cancer similar to other hospital based studies in Nigeria; Udigwe et al in Enugu (87%)[11], Kajoe et al in Sokoto (98.6%)[14] and Adefuye PO in Sagamu (78.3%)[18]; however the knowledge level demonstrated in community based studies are much lower as reported by Balogun MR et al (4.2%)[16], Audu et al (10%)[17] and Saad Aliyu et al (43.5%)[15]. Most of the participants in this study are informed through health care workers (58.5%), families and friends (21.6%); the need to scale up other sources of cervical cancer education especially through sociocultural and religious avenues, which ranks the lowest, is clearly indicated from this study.

Knowledge on risk factors for cervical cancer, clinical symptoms and signs, prevention and treatment options were commensurately high and appropriate.

Expectedly, majority of the participants, 77.5%, is aware that there are effective screening tests to detect the early cases of cervical cancer, however as shown in the results majority, 52.9% do not know which screening test to use and of those who knows only 37.1% is aware of PAP smear, 13.9% knew of VIA

and only 9.3% knew of VILLI. This indicates the need to further intensify women education about types of tests and their relative benefits.

The attitude of participants in this study also reflected the level of awareness displayed above; this study shows that women believes that screening for cancer of the cervix is a tool for prevention (30% strongly agrees, 53.6% strongly agrees), it causes no harm (28.6%A, 51.4% SA) and it is not expensive.

Despite the good knowledge and the encouraging attitude documented above, only 15% had ever uptake a cervical cancer screening test; this trend has been similarly demonstrated in previous studies as reported by Udigwe in Nnewi (5.7%), 8.7% by Adefuye in Sagamu, 10% Oche in Sokoto and 15.4% by Saad in Zaria[11,14,15,18].

Several reasons have been put forward as responsible for this low uptake of this potentially life saving screening services; from this study, indecision (32.4%) and fear of positive results (18.1%) are the most important reasons for not screening; this was very similar to a study among Nurses in Nnewi where lack of reason or indecision accounted for 37.1% and fear of outcome was 15%[11]. These reasons were further underscored by the feeling of being healthy in both studies. It is pertinent to note that majority of clients, 86.4% agree to screen, especially if assured of no harm. This calls for intensifying efforts at educating women on the basis for screening to reduce fear, encourage decisions to screen and assuring of effective treatment when positive results are obtained.

Further analysis in this study indeed confirmed the above observations that the greatest barrier to women taking up screening services are low levels of education and poor education about the disease and its consequences.

CONCLUSIONS

It is the conclusion of this study that women education on cervical cancer is still inadequate. Women education should be structured to meet the educational status and level of comprehension of the individuals and a uniform social messaging may not be appropriate for all cadres of women. Other less utilized sources of information should be further explored to improve messaging and communication to women who should be utilizing these services.

LIST OF TABLES (Tables 1-6)

Table 1: Social Demographic characteristics of the Respondents (N=280).

Variable	n (%)	Variable	n (%)
Age		**Occupational Cadre**	
15 - 19	3 (1.1)	Management Staff	23 (8.2)
20 - 24	38 (13.6)	Senior Staff	101 (36.1)
25 - 29	53 (18.9)	Junior Staff	104 (37.1)
30 – 34	52 (18.6)	Casual Workers	52 (18.6)
35 – 39	49 (17.5)	**Religion**	
40 – 44	46 (16.4)	Christianity	216 (77.1)
45 and above	39 (13.9)	Islam	61 (21.8)
Mean =34.81 ± 9.75		Traditional	3 (1.1)
Education		**Marital Status**	
No formal Education	3 (1.1)	Single	97 (34.6)
Primary	14 (5.0)	Married	171 (61.1)
Secondary	71 (25.4)	Separated/Divorced	7 (2.5)
Tertiary	280 (68.5)	Widow	5 (1.8)
Parity			
Nulliparous	61 (21.8)		
1 – 4 Children	148 (52.9)		
5 Children & Above	71 (25.4)		

TABLE 2: RESPONDENTS AWARENESS AND KNOWLEDGE ON CERVICAL CANCER.

Variable	n (%)
2a(i).Awareness on Cervical Cancer (N=280)	
Yes	236 (84.3)
No	44 (15.7)
2a(ii).Sources of Information * (N=236)	
News Media	107 (45.3)
Brochures, posters and other printed materials	58 (24.6)
Health Workers	138 (58.5)
Family, friend, neighbours and colleague	51 (21.6)
Religion leaders	7 (3.0)
Teachers	20 (8.5)
2a(iii).Risk factors for cancer of the cervix * (N=236)	.
Multiple sexual partners	138 (58.5)
Early sexual intercourse	97 (41.1)
Acquiring HPV virus	89 (37.7)
Cigarette smoking	59 (25.0)
Can be inflicted through traditional means	15 (6.4)
2a(iv). Symptoms of cervical cancer * (N=236)	
Vaginal bleeding	145 (61.4)
Foul smelling vaginal discharge	127 (53.8)
Weight loss	70 (29.7)
I don't know	41 (17.4)
2a(v) Prevention of cervical cancer * (N=236)	
Avoid multiple sexual partners	138 (58.5)
Avoid early sexual intercourse	98 (41.5)
Quit smoking	53 (22.5)
Vaccination of HPV	70 (29.7)
Screening and treat for early stages of the disease	89 (37.7)
I don't know	34 (14.4)
2a(vi). Treatment of cervical cancer * (N=236)	
Herbal remedies	14 (5.9)
Surgery	110 (46.6)
Drugs	124 (52.5)
Radiation therapy	98 (41.5)
2a(vii). Cervical cancer can be controlled in earliest stages (N=280)	
Yes	178 (63.6)
No	12 (4.3)
I don't know	90 (32.1)
Cost of treatment of cervical cancer (N=280)	
It is free of charge	17 (6.1)
It is reasonable priced	39 (13.9)
It is somewhat/moderately expensive	46 (16.4)
It is very expensive	64 (22.9)
I don't know	114 (40.7)

TABLE 3: RESPONDENTS KNOWLEDGE ON SCREENING FOR PREMALIGNANT CERVICAL LESION.

Variable	n (%)
3a(i). Availability of screening procedure to detect premalignant cervical lesion (N=280)	
Yes	217 (77.5)
No	17 (6.1)
I don't know	46 (16.4)
3a(ii). Procedure used in screening for premalignant lesion	
VIA	39 (13.9)
VILI	26 (9.3)
Pap Smear	104 (37.1)
I don't know	148 (52.9)

TABLE 4: RESPONDENTS ATTITUDE TOWARD CERVICAL CANCER AND SCREENING FOR PREMALIGNANT LESION

4.1. Screening help to prevent cervical carcinoma and reduce death

Strong agree	84 (30.0)
Agree	150 (53.6)
Neither agree or disagree	32 (11.4)
Disagree	12 (4.3)
Strongly disagree	2 (0.7)

4.2 Screening is not expensive

Strong agree	33 (11.8)
Agree	108 (38.6)
Neither agree or disagree	77 (27.5)
Disagree	46 (16.4)
Strongly disagree	16 (5.7)

4.3 Screening causes no harm to the clients

Strong agree	80 (28.6)
Agree	144 (51.4)
Neither agree or disagree	35 (12.5)
Disagree	17 (6.1)
Strongly disagree	4 (1.4)

TABLE 5: UPTAKE OF CERVICAL CANCER SCREENING

VARIABLE	N (%)
5.1. Uptake of cervical cancer screening test (N=280)	
Yes	42 (15.0)
No	238 (85.0)

5.2 Reason for not undergoing cervical cancer screening test * (N=238)

May be painful	30 (12.6)
Feel shy	35 (14.7)
Healthy	67 (28.2)
Husband would not agree	24 (10.1)
Fear of positive result	43 (18.1)
It is expensive	24 (10.1)
Not knowledgeable about it	41 (17.2)
Haven't decided	77 (32.4)
No facility for screening	13 (5.5)

5.3. If screening is free and cause no harm, will you screen (N=280)

Yes	242 (86.4)
No	10 (3.6)
I don't know	28 (10.0)

TABLE 6: DETERMINANTS OF SCREENING FOR CERVICAL CANCER.

Variable Cadre	Yes n (%)	No n (%)	Total n (%)	X^2	p-value
Age					
<20	0 (0.0)	3 (1.3)	3 (1.1)		
20 – 29	7 (16.7)	84 (35.3)	91 (32.5)	9.744**	0.021
30 – 39	15 (35.7)	86 (36.1)	101 (36.1)		
= 40	20 (47.6)	65 (27.3)	85 (30.4)		
Marital status					
Married	34 (81.0)	137 (57.6)	171 (61.1)	8.215	0.004
Unmarried	8 (19.0)	101 (42.4)	109 (38.9)		
Parity					
Have children	42 (100.0)	215 (90.3)	257 (91.8)	7.831**	0.005
Have no children	0 (0.0)	23 (9.7)	23 (8.2)		
Education					
No formal education	1 (2.4)	2 (0.8)	3 (1.1)		
Primary	1 (2.4)	13 (5.5)	14 (5.0)	2.683**	0.443
Secondary	8 (19.0)	63 (26.5)	71 (25.4)		
Tertiary	32 (76.2)	160 (67.2)	192 (68.6)		
Religion					
Christianity	33 (78.6)	183 (76.9)	216 (77.1)		
Islam	7 (16.7)	54 (22.7)	61 (21.8)	4.746**	0.032
Traditional	2 (4.8)	1 (0.4)	3 (1.1)		
Knowledge					
Poor (<50%)	11 (26.2)	50 (25.8)	61 (25.8)	0.003	0.955
Good (=50%)	31 (73.8)	144 (74.2)	175 (74.2)		

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