



Knowledge and Acceptability of Cervical Cancer Screening among Women of Reproductive Age in a rural community in Rivers State Nigeria.

Benjamin O Osaro¹, Ngozi V Ben-Osaro², Grace O Ikewelu³, Laurenda S Abbi⁴, Miracle E Agbanyim⁴, John I Alale⁴, Tamunomiebaka R Atelibo⁴

1. Department of Community Medicine, Rivers State University, Port Harcourt.

2. Department of Adult Education and Community Development, Rivers State University, Port Harcourt.

3. Department of Community Medicine, Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Awka.

4. Department of Community Medicine, PAMO University of Medical Sciences, Port Harcourt.

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*Corresponding Author

Benjamin Osaro

E-mail: benjamin.osaro@ust.edu.ng

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ABSTRACT

Background: Cervical cancer is the fourth most frequent cancer in women globally. About 90% of its burden occur in low- and middle-income countries. It is preventable through screening. Knowledge and acceptance of cervical cancer screening among women of reproductive age is low in developing countries. This study aimed at assessing knowledge, perception, and acceptability of cervical cancer screening among women of reproductive age in Ikwerre Local Government Area.

Methodology: A total of 213 women of reproductive age participated and provided information on their biodata, reproductive history, knowledge of cervical cancer, its screening, perception, and acceptability. Data was analyzed using SPSS version 22 and results were presented in frequency tables. Bivariate analysis was done using Chi (X^2) square test ($P < 0.05$).

Results: The mean age was 30.3 ± 7.9 years, 84 (39.4%) had knowledge of cervical cancer, 13 (6.1%) had very good knowledge of cervical cancer screening, 127 (59.6%) had a positive perception, and 156 (81.7%) were willing to accept cervical cancer screening. Knowledge of cervical cancer screening was associated with the level of education of respondents ($X^2 = 43.661$; $P < 0.0001$) and their sources of information about cervical cancer ($P < 0.00001$).

Conclusion: The knowledge of cervical cancer as well as its screening among women of reproductive age is poor while positive perception and the acceptability of cervical cancer screening were high. There is need for more health education programs on cervical cancer screening in the rural areas to increase the level of knowledge of cervical cancer screening.

INTRODUCTION

Cervical cancer is currently a global public health problem accounting for an estimated 560,000 new cases and about 275,000 deaths in women yearly. Over 80% of these occur in low- and medium-income countries (LMIC).¹ It is the fourth leading cause of death among women worldwide and the commonest gynecological cancer among women in Sub-Saharan African.^{2,3} In Nigeria, cervical cancer is only second to breast cancer among women of reproductive age with an estimated cost of illness between \$524 - \$2,743.^{1,4} It is caused by infection with some strains of Human Papilloma Virus (HPV) particularly serotype 16 and 18, which accounts for about 70% of cases among sexually active males and females.¹ About 14,550 new cases of Human Papilloma Virus (HPV) were reported in Nigeria in 2008.⁵ Cervical cancer can be prevented by primary prevention strategy involving vaccination of young adults 9 – 15 years, before they become sexually exposed and by secondary prevention through screening using cervical cytology (Pap smear) or by visual inspection of the cervix following the application of Acetic acid (VIA) or Lugol's iodine.^{3,6,7}

In LMIC countries, the knowledge of cervical cancer and its screening method among women of reproductive age is generally low. For instance, studies done in Nigeria show that the awareness of cervical cancer and screening method respectively was only 6.5% and 4.8% of women in Ogun State Nigeria,⁸ 16% of women of reproductive age have the awareness of cervical cancer screening in Aba⁹ and 15.5% in Enugu State.¹⁰ In other parts and populations in Nigeria the knowledge of cervical cancer and screening is high for instance 68.4% of female undergraduates in Babcock University had high knowledge of cervical cancer,¹¹ 66.9% have the awareness and 43.5% the knowledge of cervical cancer screening among market women in Zaria.¹²

The acceptance of cervical cancer screening among women of reproductive age in Nigeria is high and the provision of screening services still limited to tertiary healthcare facilities located in urban areas.¹³ Women of reproductive age who were willing to accept cervical cancer screening was reported by Balogun et al (2012) in their study to be 73.3% among urban slum dwellers in Lagos Nigeria however Omowhara et al (2022) found only 4.3% among women of reproductive age in a rural community in Delta State, Nigeria.^{3,13} This study sought to assess the knowledge, and acceptance of cervical cancer screening among rural childbearing women in Ikwerre Local Government Area of Rivers State Nigeria.

METHODOLOGY

Study area

The study was carried out in Ikwerre Local Government Area (LGA), one of the twenty rural LGAs in Rivers State

Nigeria, located in Rivers East Senatorial District of Rivers State. Its headquarters is Isiokpo. The LGA is comprised of twelve political wards: Isiokpo, Omagwa, Omudeme, Elele, Omuanwa, Apani, Ipo, Omerelu, Igwuruta, Ubima, Ozuaha and Aluu. It has a landmass of 667.5km² and population of 271,700 with females being 91,355.^{14,15} The occupation of the people includes farming, trading, and other commercial ventures. Communication in the LGA is mainly through the English language, local dialect (Ikwerre) as well as 'pidgin English.' Health care services is basically at the level of primary healthcare and is provided at the Primary Health Centre as well as in private health facilities and patent medicine vendors in communities in the LGA.

Study design and sampling method

A descriptive cross-sectional study design was adopted for this study which was carried out among childbearing women aged 15 – 49 years resident in Ikwerre LGA. Women who were very ill and those on treatment for cervical cancer were excluded from the study.

Sample size determination

The sample size was calculated using the Cochran formula for single population, $N = Z^2 PQ/d^2$ where N = Sample size, Z = Standard normal deviate corresponding to 95% level of significance given as 1.96, P = Assumed prevalence of knowledge of screening method¹³ = 0.094, Q = 1- P = 0.906, d = degree of precision = 0.05. Thus, the calculated sample size was 131. However, this was increased to 213 to accommodate for non-response.

Sampling technique: Respondents were recruited using a multistage sampling technique by selection of one political ward (Isiokpo) through a simple ballot, then two communities in the ward (Adanta and Omueke). A proportionate sample was drawn to select 213 households from the selected two communities and finally childbearing women in the households were approached to participate in the study. Those who gave informed consent were recruited and interviewed. However, in the event of refusal, a woman of reproductive age in the next household was selected to participate in the study.

Data collection: This was done using a pretested structured survey questionnaire administered by trained research assistants. Respondents provided information on their socio-demographic characteristics, knowledge on cervical cancer and screening, the source of information about cervical cancer screening, and willingness to accept cervical cancer screening and also the reasons for non-acceptance. Information was obtained from respondents in English language and 'pidgin English' freely spoken in the LGA.

Data analysis: The collected data was cleaned and entered into IBM Statistical Package for Social Sciences (SPSS) software version 25 for analysis. Categorical data were analyzed as simple proportions and continuous data as mean and standard deviation and presented on frequency tables. Test for association was done using Chi (X^2) test at $P < 0.05$.

Outcome variables.

- i. Knowledge of cervical cancer screening was determined as percentage score derived from a set of nine questions on knowledge about cervical cancer and cervical cancer screening. Scores of 70% and above were rated as good knowledge, 50-69% as fair knowledge, and those less than 50% were rated as poor knowledge.
- ii. Acceptability of cervical cancer screening was determined as percentage of participants who were willing to accept cervical cancer screening.

Ethical considerations

Approval for this study was obtained from the Ethics and Review Committee of Rivers State Primary Healthcare Management Board. Written informed consent was obtained from all participants after giving them detailed information of the study, the assurance of confidentiality of their information and their liberty to refused participation at any stage of data collection.

RESULTS

A total of 213 questionnaires administered to women of reproductive age in Ikwerre Local Government Area was received giving a 100% response rate.

Table 1: Socio-demographic characteristics of respondents.

Variables	Frequency (n = 213)	Percent
Age of respondents (yrs)		
<20	14	6.6
20 -29	96	45.1
30 -39	71	33.3
40 - 49	32	15.0
Mean (SD)	30.3 (7.9)	
Marital status		
Single	53	24.9
Married	152	71.4
Divorced/separated	5	2.3
Others	3	1.4
Educational status		
None	3	1.4
Primary	29	13.6
Secondary	116	54.5
Tertiary	65	30.5
Occupation		
Farming	18	8.5
Civil servant	34	16.0
Fishing	2	0.9
Housewife	15	7.0
Petty trading	19	8.9
Business	85	39.9
Others	40	18.8

Table 1 shows that most (n = 152, 71.4%) of the respondents were married, 96 (45.1%) were within age group 20 - 29 years and mean age as 30.3 ± 7.9 years.

About one third (n = 65, 30.5%) of the respondents have tertiary education with the commonest occupation as business (n = 85, 39.9%).

Table 2: Awareness and sources of information on cervical cancer among respondents.

Variables	Frequency (N = 213)	Percent
Awareness of cervical cancer	84	39.4
Sources of information*		
Doctor	38	17.8
Mass media (TV/Radio)	24	11.3
Friends	22	10.3
Nurse	19	8.9
Community	16	7.5
Internet	14	6.6
Leaflet/Fliers	4	1.9

*multiple options

Only 84 (39.4%) of the respondents have the awareness of cervical cancer. The doctors (n = 38, 17.8%), mass media (n = 24, 11.3%) and friends (n = 22, 10.3%) were

the most common sources of information on cervical cancer (Table 2).

Table 3: Knowledge, perception, and acceptance of cervical cancer screening among respondents.

Variables	Frequency (N = 213)	Percent
Knowledge of cervical cancer screening		
Poor	166	77.9
Fair	34	16.0
Good	13	6.1
Previously screened for cervical cancer		
Yes	22	10.3
No	191	89.7
Willingness to accept cervical cancer screening (n = 191)		
Yes	156	81.7
No	35	18.3
Reasons for non-acceptance of cervical cancer screening *		
I have only one partner	8	22.9
I do not like exposing my body	7	20.0
I have been with the same partner for a long time	6	17.1
I have never been sexually active	6	17.1
I think the screening will hurt me	6	17.1
It is against my religious belief	4	11.4
It is against my cultural belief	2	5.7

*Multiple options

Majority (n = 166, 77.9%) of the respondents had poor knowledge of cervical cancer screening, and among respondents who have not previously been screened, 156 (81.7%) were willing to accept cervical cancer

screening. 'I have only one sex partner' was the commonest reason given for non-acceptance of cervical cancer screening (Table 3).

Table 4: Factors associated with the knowledge of cervical screening among the respondents.

Variables	Knowledge of cervical cancer			X ² (P value)
	Poor	Good	Very good	
Marital status				
Single	40	8	3	3.148(0.79)
Married	114	25	9	
Divorced/Separated	4	0	1	
Others	2	1	0	
Educational status				
None	2	1	0	43.661 (<0.0001) *
Primary	23	5	0	
Secondary	102	12	0	
Tertiary	33	16	13	
Occupation				
Farmer	15	3	0	17.318 (0.138)
Civil servant	18	9	6	
Fisherwoman	2	0	0	
Housewife	11	3	1	
Market seller	16	1	0	
Businesswoman	67	13	4	
Others	29	5	2	
Sources of information				
Leaflet/Fliers	0	2	2	18.366 (<0.0001) *
Media media (TV/Radio)	7	10	5	29.819 (<0.0001) *
Internet	2	4	6	47.045 (<0.0001) *
Friends	6	11	4	31.639 (<0.0001) *
Community	11	4	1	0.940 (0.625)

*Statistically significant (p < 0.05)

Table 4 shows a statistically significant association between knowledge of cervical cancer screening and educational status ($X^2 = 43.661$; $P < 0.0001$) and all the sources of information on cervical cancer screening (leaflets, mass media, internet and friends) except community sources ($X^2 = 0.940$; $P = 0.625$).

DISCUSSION

This study looked at knowledge, perception and acceptability of cervical cancer screening among childbearing women in Ikwere LGA. Cervical cancer has been associated with the infection of Human Papilloma Virus (HPV) serotype 16 and 18. This disease is preventable by early diagnosis through screening. The acceptability of cervical cancer screening in low- and medium-income countries (LMIC) is still low compared to the developed countries.

The awareness of cervical cancer and knowledge of its screening method among women of reproductive age is low in Ikwere LGA. This study found that slightly over one third (39.4%) of respondents have the awareness of cervical cancer but only 6.1% have good knowledge of its screening methods. Studies in

similar population in Nigeria have also reported low level of awareness of cervical cancer and its screening methods. For instance, good knowledge of cervical cancer screening was found to be 4.8% among rural women in Gombe¹⁶ 4.1% in Ogun State⁸ and 9.4% in a rural LGA in Delta State, Nigeria.¹³

Other studies have however reported higher prevalences of good knowledge of cervical cancer screening among market women in Zaria (43.5%)¹² and among undergraduates in Babcock University in Ogun State, Nigeria (68.4%).¹¹ The higher prevalence of knowledge of cervical cancer screening in these studies may be due to the urban nature of population surveyed and the level of education of the participants. They may have had previous exposures to health messages from mass media or in health institutions which is not common in rural settings. Also, these undergraduate students are more enlightened compared to rural women and have access to health information from internet sources more readily than rural women. This study found an association between knowledge of cervical cancer screening and sources of information; mass media ($P < 0.0001$) and internet ($P < 0.0001$). The awareness and knowledge of cervical cancer screening is high in countries currently providing cervical cancer services

through prevention programs. Tapera et al (2019) reported that 73% of women in Harare, Zimbabwe to have knowledge of cervical screening.¹⁷ The much lower prevalence of knowledge of cervical cancer screening in our study may be due to lack of cervical cancer prevention programs and furthermore cervical cancer screening currently is done in tertiary healthcare facilities in Nigeria.¹⁸

Although the uptake of cervical cancer screening is low in this study, the willingness to accept screening is high. For instance, while only 10.3% of the women have screened for cervical cancer previously, 81.7% of those yet to be screened are willing to accept screening. Balogun et al (2012) in their study found that 73.3% of urban slum dwellers in Lagos Nigeria were willing to accept cervical cancer screening.³ Elsewhere the acceptance of cervical cancer screening has been reportedly high among women in rural Central Uganda (91.4%)¹⁹, the Gambia (86.7%)²⁰ and in Nepal (66.4%).²¹ In other studies, the acceptance of cervical cancer screening is reportedly low, 24.8% in Addis Ababa Ethiopia,²² 21% in Karnataka India,²³ 0.8% in Elmina, Southern Ghana.²⁴

The acceptance of cervical cancer screening has been shown in studies to be associated with knowledge of cervical cancer and its screening methods.³ This study found a statistically significant association between knowledge of cervical cancer screening and the level of education of respondents ($X^2 = 43.661$; $P < 0.0001$) and the sources of information on cervical cancer screening ($P < 0.0001$). Majority of the respondents had 'having only one sex partner' as reason for non-acceptance of cervical cancer screening in this study. The implication of low knowledge of cervical cancer screening and reason for not willing to accept screening found in this study is their low perception of susceptibility and risk of infection by HPV and by extension the development of cervical cancer. It is therefore imperative for governments and non-governmental organizations providing sexual and reproductive health services in LMIC countries institute prevention programs to educate childbearing women on the risk of Human Papilloma Virus infection and cervical cancer. Other studies also found an association between the knowledge of cervical cancer screening and attitude, educational level, income, religion, availability of services and uptake of cervical cancer screening.¹⁶ The limitation of this study is in its generalizability since the study was done in a Ikwerre LGA Rivers State Nigeria. Furthermore, information obtained from participants were subject to memory recall bias.

CONCLUSION

The acceptance of cervical cancer screening and its knowledge among childbearing women in Ikwerre LGA is low. The perception of risk of HPV infection and cervical cancer is also low. However, their willingness to accept screening among the unscreened women is high. It is

recommended that government and health agencies initiate cervical cancer prevention programs to increase knowledge of cervical cancer screening and to subsidize screening. Further research on their perception of cervical cancer screening is also recommended.

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