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Knowledge, perceptions and attitude of women about cervical cancer and its screening in Iyin Ekiti, Ekiti State, Nigeria

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ABSTRACT

In Nigeria, cervical cancer is a leading cause of morbidity and mortality among women. This study was conducted to determine women's knowledge, perceptions and attitude to cervical cancer and its screening services in Iyin-Ekiti, South-Western Nigeria. A community-based, cross-sectional study was used. An interviewer-administered, semi-structured questionnaire was used to elicit information from 397 women of reproductive age who were recruited using the multistage sampling technique. SPSS version 20 was used for statistical analysis at univariate and bivariate levels. The level of statistical significance was set at p-value ≤ 0.05. Only 182 (45.8%) respondents were aware of cervical cancer. Among those aware, 78 (42.9%) had poor knowledge, and 85 (46.7%) had both poor perception and negative attitude toward cervical cancer screening. Age (p=0.001), marital status (p=0.001), ethnicity (p=0.001), religion (p=0.04), employment status (p=0.001), monthly income (p=0.001) and educational status (p=0.005) were associated with knowledge of cervical cancer. Religion (p=0.004) and monthly income (p=0.001) were associated with attitudes to cervical cancer screening. The study concluded that there is a huge gap in awareness level and knowledge level, with about half of the respondents showing poor perception and attitude towards cervical cancer and its screening among women of reproductive age group in this region. Community-based health education about cervical cancer and social mobilization for its screening is urgently required among women of reproductive age.

Key words:
knowledge; perception; attitude; cervical cancer; screening; women of reproductive age

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INTRODUCTION

Cervical cancer is one of the non-communicable diseases that is potentially preventable.[1, 2] It is the fourth most common cancer, and the most common malignancy of the female genital tract (in the developing countries), in addition, it is the fourth leading cause of cancer-related deaths in women, globally.[1,3,4,5] Globally, an estimated 604,000 new cases of cervical cancer and 342 000 deaths were recorded in 2020.[6] Approximately 90% of deaths from cervical cancer occurred in low and middle-income countries.[6,7] In Nigeria, the incidence and the trend are not different, in 2019, cervical cancer was the second most common cancer amongst Nigerian women with an estimated Age Standardized Incidence Rate of 18.4 per 100,000 and 10,600 deaths.[7] The Cumulative risk of cervical cancer, among ages 0-74years is 1.9% and only 11% of eligible women have had the screening in the last five years.[7] However, among those diagnosed, they usually present at the late stages of the disease.[1]

Cervical cancer is a disease where cells of the cervix grow abnormally around the squamocolumnar junction on exposure to persistent high-risk human papilloma infection (HPV) and if left untreated they predispose to premalignant and malignant changes.[8] The early stage of cervical cancer is usually asymptomatic but signs and symptoms such as abnormal vaginal bleeding, abnormal vaginal discharge and urinary or rectal pressure may occur as the disease progresses.[8] The burden of cervical cancer has increased globally, especially in developing countries.[9] The increase is attributed to the presence of ignorance, high-risk persistent HPV infection, lifestyle changes, negative attitude of people towards vaccination, HIV/AIDS infection, poor screening practices, low level of education and poor access to or lack of medical care.[9] Generally, cervical cancer disease can be prevented by early detection through regular screening and treatment of precancerous lesions. Furthermore, HPV screening and vaccination: are the primary prevention strategies for cervical cancer disease.[1,10] Pap smear, HPV DNA testing, and Visual Inspection with Acetic acid or Lugol's Iodine have been identified as important cervical cancer screening strategies that can be used.[8,11,12] However, these methods are not readily available in Sub-Sahara Africa due to challenges of infrastructure, personnel and lack of resources.[8,11,12]

In Nigeria, the cervical cancer control plan for screening, early detection of cervical cancer and HPV vaccination for primary prevention in girls aged 9–15 years is still very poor, with no routine and almost non-existent.[13] The low awareness level and poor knowledge have affected the health-seeking behaviour of women in the efficient use of the very few available services.[2,14] Unlike the Western countries, the majority of women diagnosed with cervical cancer in developing countries present with advanced-stage of cervical cancer which is often beyond the scope of surgery and radiotherapy facilities and death is usually inevitable.[15]

A study by Abiodun et al. In Ogun State, Nigeria revealed low awareness and knowledge level of cervical cancer and its screening among women.[14] A study in Ghana revealed that the participants lacked knowledge of specific risk factors and symptoms of cervical cancer.[16] Low risk perception regarding cervical cancer was the commonest reason for not participating in screening activities among respondents in Ilorin, north-central, Nigeria.[17] Hence, this study aims to access the awareness level, knowledge, perceptions and attitude of women of reproduction age with respect to cervical cancer and its screening in Iyin-Ekiti, Ekiti State, Nigeria.

METHODS

Study Area: This study was carried out in Iyin-Ekiti, one of the towns in Irepodun/Ifelodun Local Government Area (LGA) of Ekiti State, Nigeria. Iyin-Ekiti has a total population of about 30,621 and it is a culturally homogenous town inhabited predominantly by the Yorubas. There are also non-indigenous migrant settlers such as Ebiras, Igbos, Hausas and other Nigerian ethnic groups in the town. There are primary and secondary facilities providing health care services in the community, however two tertiary health facilities are located in the neighbouring town.

Study Design: This was a descriptive, cross-sectional study.

Study Population: The study population consisted of women of reproductive age (15-49 years) who had been residents in Iyin-Ekiti for at least twelve months preceding the study and also gave their consent. Those who were severely ill and did not give their consent were excluded.

Sample Size Determination: The sample size was determined using Fischer's formula for calculating single proportions for a population less than 10,000. Using the knowledge of cervical cancer among women of reproductive age with a prevalence of 54.3% from a previous study, [18] the minimum sample size obtained was 362. After adjusting for a non-response rate of 10%, the sample size was increased to 400.

Sampling Technique: A multi-stage sampling technique was used to recruit participants for the study. There were seven basic health centers in Iyin-Ekiti, each having its own catchment and enumeration areas already demarcated by the World Health Organization (WHO) for immunization purposes. This existing demarcation was used to recruit participants in stages:

Stage one: The lists of catchment areas for each of the health centres were obtained. Simple random sampling method was used to select one enumeration area from each.

Stage two: A list of streets from each enumeration area was obtained. Simple random sampling method was used to select three streets from each enumeration area. Stage three: Proportional systematic random sampling method was used to select the houses from each street. The houses chosen from each street were proportional to the size of the street (more houses were selected from the bigger streets) Stage four: One household was selected from each house. Where there was more than one household in a house, simple random sampling method was used to select the one used. Stage five: One participant was interviewed from each household. Where there was more than one eligible participant, simple random sampling method was used to select the person to be interviewed.

Data Collection Instrument and Method: A pre-tested, semi-structured, adapted questionnaire was administered in both English and Yoruba languages by five trained research assistants (Medical Students). The pre-test was done among women in Igede-Ekiti, an entirely different town from Iyin-Ekiti. The questionnaire elicited information about the socio-demographic characteristics of respondents and their awareness, knowledge, perception and attitude toward cervical cancer screening. Face and content validity of the questionnaire were ensured by a Reproductive Health Specialist. Data were collected over a period of four weeks.

Data Analysis: The Statistical Package for Social Sciences (SPSS) version 20 was used for data entry and analysis. Univariate analyses were presented in form of frequency tables, while bivariate analyses were presented as cross-tabulations using the Chi-square test. Level of significance was set at p-value < 0.05.

Outcome variables: These included knowledge, perceptions and attitude to cervical cancer and its screening. There were 8 knowledge questions each having 1 point attached. The highest score obtainable was 8 while the lowest point was 0. Respondents that scored 0-4 points were categorized as having poor knowledge while those that scored 5-8 points were categorized as having good knowledge. There were 8 perception questions each having 1 point. The highest score obtainable was 8 while the lowest point was 0. Respondents that scored below 0-4 points were categorized as having poor perceptions while those that scored 5-8 were categorized as having good perceptions. There were 3 attitudinal questions each having 1 point. The highest score obtainable was 3 while the lowest point was 0. Respondents that scored below 0-1 points were categorized as having a negative attitude while those that scored 2-3 were categorized as having a positive attitude.

Ethical Consideration: Ethical clearance was obtained from the Ethics and Research Committee of the Ekiti State University Teaching Hospital Ado-Ekiti. The ethical approval number is EKSUTH/A67/2021/02/002. Written informed consent was obtained from all eligible respondents before the interview. The questionnaires were anonymous and confidentiality was maintained. No remuneration was given to the respondents.

RESULTS

Out of the 400 questionnaires distributed, 397 were returned and fit for analysis giving a response rate of 99.3%

Table 1. Socio-demographic characteristic of respondents

Variables	Frequency(n) (N= 397)	Percentage (%)
Age (years)		
15-20	72	18.1
21-30	137	34.5
31-40	121	30.5
>40	67	16.9
Mean age	31.2±9.1	
Tribe		
Yoruba	354	89.2
Igbo	23	5.8
Hausa	20	5.0
Religion		
Christianity	352	88.7
Islam	45	11.3
Educational status		
Primary	44	11.1
Secondary	174	43.8
Tertiary	179	45.1
Age at Coitarche		
≤18	31	7.8
19-20	260	65.5
>20	106	26.7

Variables	Frequency(n) (N= 397)	Percentage (%)
Employment status		
Employed	188	47.4
Unemployed	80	20.2
Student	129	32.4
Marital status		
Single	172	43.3
Married	209	52.6
Divorced	13	3.3
Widowed	3	0.8
Monthly income (in Naira)		
<18000	123	31.0
18000 – 30000	75	18.9
30000 – 40000	134	33.7
>40000	65	16.4

Table 1 showed the socio-demographic characteristics of the respondents. Two hundred and fifty-eight (65.0%) of the respondents were aged between 21-40 years of age, with the mean age being 31.2±9.1years. Majority, 354 (89.2%) were Yorubas; 352 (88.7%) were Christians; 353 (88.9%) had at least secondary school education and 260 (65.5%) attained coitarche at 19-20 years. The median age at coitarche was 19.0 years. Among the respondents 188 (47.7%) were employed; while 225 (56.7%) were ever married.

Table 2. Respondents' awareness of cervical cancer, availability of its screening services and their sources of information

Variables	Frequency (n=397)	Percentage (%)
Aware of cervical cancer	182	45.8
Aware of the availability of cervical cancer screening services in Ekiti	36	19.8
Sources of information about cervical cancer	n=182	
Media	49	26.9
Health Facilities	49	26.9
School	40	22.0
Church/Mosque	23	12.6
Workplace	17	9.3
Others	4	2.3

Table 2 shows respondents' awareness of cervical cancer, availability of its screening services and the sources of information about cervical cancer. Only 182 (45.2%) of the respondents were aware of cervical cancer while 36 (19.8%) among these were aware of the availability of screening services in Ekiti. The most important sources of information about cervical cancer were the media 49 (26.9%), health facilities 49 (26.9%) and the school 40 (22.0%).

Table 3. Knowledge of cervical cancer among respondents (n=182)

Knowledge	Frequency	Percentage
Women who have multiple sexual partners are at risk	129	70.9
Women who do not undergo regular screening are at risk	124	68.1
Women who have casual sexual intercourse without condom are at risk	116	63.7
Women who are not vaccinated against HPV are at risk	115	63.2
Cervical cancer is a preventable disease	103	56.6
Cervical cancer is a common disease among women in Nigeria	101	55.5
Women who are exposed early to sexual intercourse are at risk	101	55.5
Women should get screened as early as 10 years of age	99	54.4
Overall Knowledge	**Frequency**	**Percentage**
Good knowledge	104	57.1
Poor knowledge	78	42.9
Total	182	100.0

Table 3 shows the knowledge of cervical cancer among respondents. Overall, 104 (57.1%) had good knowledge of cervical cancer while 78 (42.9%) had poor knowledge

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Table 4. Respondents' perceptions about cervical cancer screening (n= 182)

Perceptional Statements	Agree	Neutral	Disagree
Screening does not expose privacy unnecessarily	158 (86.8)	4 (2.2)	20 (11.0)
Cervical cancer is best treated medically	154 (84.6)	19 (10.4)	9 (5.0)
Cervical cancer is not a spiritual affliction	152 (83.5)	13 (7.1)	17 (9.4)
Cervical cancer screening is not a painful procedure	135 (74.2)	11 (6.0)	36 (19.8)
Screening is effective in preventing cervical cancer	131 (72.0)	43 (23.6)	8 (4.4)
Any sexually active woman can have cervical cancer	116 (63.7)	49 (26.9)	17 (9.4)
Cervical cancer is a curable disease	113 (62.1)	31 (17.0)	38 (20.9)
Cervical cancer screening is a simple procedure	78 (42.9)	88 (48.3)	16 (8.8)
Overall Perception	**Frequency**	**Percentage**	
Good perception	97	53.3	
Poor Perception	85	46.7	
Total	182	100.0	

Table 4 shows the respondents' perceptions about cervical cancer and its screening. Overall, among those who were aware, 97 (53.3%) had good perception, while 85 (46.7%) had poor perception about cervical cancer screening.

Table 5. Attitude to cervical cancer screening among respondents (n= 182)

Attitudinal Statements	**Agree**	**Neutral**	**Disagree**
Cervical cancer screening should be encouraged for all women	142 (78.0)	19 (10.4)	21 (11.6)
I will go for cervical cancer screening as often as necessary	82 (45.1)	53 (29.1)	47 (25.8)
I can take my daughter for cervical cancer screening	77 (42.3)	70 (38.5)	35 (19.2)
Overall Attitude	**Frequency**	**Percentage**	
Positive attitude	97	53.3	
Negative attitude	85	46.7	
Total	182	100.0	

Table 5 shows attitude to cervical cancer screening and overall attitude among respondents. Among those who were aware of cervical cancer, 97 (53.3%) had positive attitude, while 85 (46.7%) had negative attitude towards cervical cancer screening.

Table 6. Association between socio-demographic characteristics and knowledge of cervical cancer screening among respondents

Variable	**Good knowledge**	**Poor knowledge**	**Chi-square/χ^2**	**P value**
Age (years)				
15-29	66 (88.0)	9 (12.0)	48.87	0.001
30-49	38 (35.5)	69 (64.5)		
Marital status				
Ever married	70 (81.4)	16 (18.6)	39.16	0.001
Never married	34 (35.4)	62 (64.6)		
Ethnicity				
Yoruba	104 (65.0)	56 (35.0)	*33.37	0.001
Ibo	0 (0)	10 (100.0)		
Hausa	0 (0)	12 (100.0)		
Religion				
Christianity	87 (54.4)	73 (45.6)	4.14	0.042
Islam	17 (77.3)	5 (22.7)		
Employment status				
Student	71 (87.7)	10 (12.3)	23.22	0.001
Employed	16 (39.0)	25 (61.0)		
Unemployed	17 (28.3)	43 (71.7)		
Income				
<N18,000	1 (5.3)	18 (94.7)		
N18,000-30,000	22 (59.5)	15 (40.5)	22.01	0.001
≥N31,000	71 (61.2)	45 (38.8)		
Educational Level				
Primary	0 (0.0)	2 (100.0)	*10.50	0.005
Secondary	41 (47.1)	46 (52.9)		
Tertiary	63 (67.7)	30 (32.3)		

*χ^2=Yates correction

Table 6 shows the association between respondents' socio-demographic characteristics and knowledge of cervical cancer screening. Age, marital status, ethnicity, occupation, income and educational level were all significant associated with knowledge of cervical cancer. ($p < 0.05$)

Table 7. Association between socio-demographic characteristics and attitude to cervical cancer screening among respondents

Variable	Positive attitude	Negative attitude	Chi-square/χ^2	P value
Age (years)				
15-29	35 (46.7)	40 (53.3)	2.47	0.116
30-49	62 (57.9)	45 (42.1)		
Marital status				
Ever married	47 (54.7)	39 (45.3)	0.12	0.729
Never married	50 (52.1)	46 (47.9)		
Ethnicity				
Yoruba	84 (52.5)	76 (47.5)		
Ibo	3 (30.0)	7 (70.0)	*4.59	0.100
Hausa	10 (83.3)	2 (16.7)		
Religion				
Christianity	79 (49.4)	81 (50.6)	8.18	0.004
Islam	18 (60.2)	4 (18.2)		
Employment status				
Student	39 (48.1)	42 (51.9)	2.55	0.280
Employed	26 (63.4)	15 (36.6)		
Unemployed	32 (53.3)	28 (46.7)		
Income				
<N18,000	6 (27.3)	16 (72.7)	16.61	0.001
N18,000-30,000	15 (38.5)	24 (61.5)		
≥N31,000	76 (62.8)	45(37.2)		
Educational Level				
Primary	0 (0.0)	2 (100.0)	*5.40	0.067
Secondary	41 (47.1)	46 (52.9)		
Tertiary	56 (60.2)	37 (39.8)		

*χ^2=Yates correction

Table 7 shows the association between respondents' socio-demographic characteristics and their attitudes to cervical cancer screening. It shows that religion and monthly income were significantly associated with attitudes to cervical cancer screening ($p< 0.05$).

DISCUSSION

Cervical cancer is a significant public health issue among women in Nigeria. This current study revealed a poor awareness level (45.8%) of the respondents concerning cervical cancer and this finding is similar to a study by Wright et al. in Lagos, Nigeria in which 37.2% of the respondents were aware of cervical cancer

which may be indicative of poor health education among women living in low and middle-income countries, of which Nigeria is one of them.[19] However, a study by Owoeye et al.[2] in the Niger Delta, area of Nigeria and among Gabonese women by Assoumou et al.[20] showed a high level of awareness (72% and 91.6% respectively), however, these studies were done among well-educated, enlightened people in a tertiary institution and urban Gabonese women while the current study was among WRA in a rural setting.[2,20] Also, in a study[21] in rural Kerala, India, it was reported that 72.1% of the women were aware of cervical cancer. This finding may be due to a higher sample size (which is twice that of this present study) than that of this current study.[21]

In addition, a low level of awareness concerning the availability of cervical cancer screening services in Ekiti was similar to a study in Southeast Nigeria which equally showed a very low level of awareness (12.6%) about cervical cancer screening.[22] This may have occurred due to poor community sensitization and poor social mobilization for health in developing countries. In contrast to this study, Dozie et al. revealed a high awareness level (68.8%) of cervical cancer screening in the southeastern part of Nigeria.[23] The reason for this difference might be that women in the current study were older than women in this study; the younger women might be more enlightened than older women.

About two-fifth of the respondent had poor knowledge about cervical cancer disease and its screening (among those who were aware). Similarly, a review study[24] by Teneja et al. conducted in India revealed overall poor knowledge of cervical cancer, which was 59.8%. The similarity may have occurred because India is also a developing country like Nigeria, in which the educational level of WRA may be lower than the developed countries; this might account for the poor knowledge in them. In contrast to the current study, Ferdous et al. revealed that women in Bangladesh had 88% poor knowledge of cervical cancer;[25] this may be attributed to the fact that Bangladesh is also among the low- income countries with a low level of education. The three most correctly answered knowledge questions among those who were aware of the disease; were that those with multiple partners are at risk 129 (70.9%); women who do not undergo regular screening are at risk 124 (68.4%) and those who have casual sex without a condom are at risk 116 (63.7%). According to Ghosh et al.[26] those who correctly answered knowledge questions on multiple partners are at risk 69 (7.3%); women who do not undergo regular screening are at risk 906(95.9%) and those who have casual sex without using a condom are at risk 34 (3.6%).[26]

The major sources of information about cervical cancer included health facilities (26.9%), media (26.9%) and schools (22.0%). In contrast to this study, a study done in north-central Nigeria, revealed that most (57.6%) of the respondents that were aware of cervical cancer obtained their information mainly from the media, while friends and relatives were second (22.5%).[17] This difference in sources of information may be due to the fact that the study was carried out among federal civil servants who were more likely to be well abreast of what goes on in the media space. In a study done in South Africa, it was observed that only 43% of respondents received information on cervical cancer from health facilities.[27] This is similar to the present study because it was a descriptive, cross-sectional study which was also a population-based study and finally it was also done in a rural community of South Africa. This result indicates that majority of them learnt about cervical cancer from health facilities, hence any intervention to increase awareness should include awareness in the health facilities and media because people tend to believe health workers when they are sick, while mass media will increase the social

mobilization drive towards achieving this goal.

The findings of this study showed that slightly below half of the respondents had poor perceptions of cervical cancer screening. This result however is consistent with the study by Okesiji et al., which revealed that respondents' poor perception of cervical cancer screening was average.[28] Additionally, the findings of this study revealed that a higher proportion (83.5%) of the respondents perceived that cervical cancer is not a spiritual affliction. This is in contrast to a cross-sectional descriptive study done in Idi-Araba, Lagos in which 60.7% believe it is a spiritual affliction and that they are spiritually protected.[29] About three-fifth said that cervical cancer is a curable disease, while about three-quarters of the respondent also claimed that cervical cancer is best treated by preventing it. This finding is similar to a cross-sectional descriptive study done by Ifemelumma et al. which documented that cervical cancer is a preventable disease (75%) through screening modalities, though the study was among female health workers at a tertiary hospital,[1] who may have had more knowledge of cervical cancer screening than the respondents in this study.

The findings of this study showed that slightly below half of the respondents had a poor attitude (46.7%) to cervical cancer screening. This result however is similar to a study by Amu et al which revealed that respondents' poor attitude to cervical screening was 44.2% in Somolu Area of Lagos State.[30] These similarities may have occurred because both studies were community-based, and both used a cross-sectional study design. However, in the present study, the majority (78.0%) of the respondents agreed that cervical cancer screening should be encouraged for all women; and about half of the respondents were willing to go for screening as often as required; also about two-fifths were willing to take their daughters for screening. This can be compared to a cross-sectional descriptive study done by Oche et al. among female health workers in Sokoto, Nigeria; where 77.9% of the respondents who were yet to be screened for cervical cancer opined that they intend to avail themselves of the opportunity as soon as possible while 81.9% of them would recommend the screening to others and family members.[31]

Statistically significant association was found between respondent's socio-demographic characteristics and the knowledge of cervical cancer and its screening; significant factors included age, marital status, ethnicity, religion, employment status, monthly income, and educational status ($P<0.05$). The finding is similar to the study done by Tsegay et al. which revealed age, religion, education, occupation, and monthly perceived income were significantly associated with the knowledge score of cervical cancer screening at $P<0.05$.[32] This may have occurred because the studies were both done in a developing country, using a similar cross-sectional design and was population based however the sample sizes were different. Similarly, a study be Mousavi et al revealed that marital status ($P=0.005$) and occupation ($P=0.001$) were significantly associated with knowledge of cervical cancer and its screening.[33]

Also, statistically significant demographic characteristics and respondents' attitudes towards cervical cancer and its screening were religion, and income ($P<0.05$). It shows that respondents who were Muslims and who earned N31,000 and above monthly had a better attitude to cervical cancer screening than those who were Christians and earned below N31,000 per month ($p< 0.05$). This was similar to a study done by Tsegay et al. in Northern Ethiopia which equally revealed perceived household monthly

income to be statistically significant (P<0.05) but religion was not statistically significant (P>0.05).[32] Both studies were community-based quantitative studies in a rural setting in a developing country.

Limitation: Recall bias was reduced by limiting the recall period to the last 12 months. It is a cross-sectional study, so causality cannot be ascertained. Further studies will be needed to assess the causes of poor perceptions and attitude of WRA towards cervical cancer and its screening service in Nigeria.

CONCLUSION AND RECOMMENDATIONS

In conclusion, there is a huge gap in awareness level and knowledge level, about half of the respondents showing poor perception and attitude towards cervical cancer and its screening among WRA group in this region. The identified significant factors affecting both knowledge of cervical cancer (age, marital status, ethnicity, religion, employment status, income and educational status) and attitude towards cervical cancer screening (religion and income), should be targeted for interventions. Also, based on the identified sources of information, targeted interventions like health education from healthcare workers and schools, with increased, social mobilization through the media will increase awareness and knowledge of WRA and the community at large. Equally, this should galvanize positive attitude and the right perception thereby creating demand among WRA in adopting early screening practices and other preventive practices in Nigeria.

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