



Research

## Cervical cancer screening awareness and uptake among under-screened women in a rural Nigerian community

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### Abstract

**Background:** Cervical cancer is the most frequent female genital tract malignancy in Nigeria, with the majority of patients suffering from advanced stages of the disease. A low level of awareness and knowledge of cervical cancer and screening has been identified as one of the causes of cervical screening underutilization in Nigeria. This study aims to determine the level of cervical cancer screening awareness and uptake among rural Nigerian women.

**Method:** The study design was cross sectional, carried out among adult women in the Orhuhorun community in Udu Local Government Area of Delta State. Multi-stage sampling technique was used to recruit 234 women from May to June 2021. Data were collected by semi-structured, interviewer-administered questionnaire. Data analysis was done with SPSS v. 25.0.

**Result:** Two hundred and thirty-four women of mean age 41.08 years (SD  $\pm$  8.45) were enrolled. The level of awareness of cervical cancer screening methods was 9.4% while screening uptake was only 4.3% among rural women in Orhuhorun.

**Conclusion:** The awareness of cervical cancer screening methods and uptake was very low among rural women in Delta State. It is, therefore, imperative that cervical cancer awareness campaigns among this populace are increased and screening services be less expensive and accessible.

**Keywords:** Cervical cancer, awareness, screening methods, uptake.

### Introduction

Cervical cancer is a condition that can be avoided if given appropriate vaccine and screening done regularly. It is also treatable if detected early and treated properly. Despite this, it is one of the most common malignancies in women and the leading cause of cancer-related death worldwide. The annual number of new cases of cervical cancer is predicted to rise from 570,000 to 700,000 over the next 12 years (2018 to 2030).<sup>1</sup> During the same period, the number of deaths will rise from 311,000 to 400,000 every year. Moreover 85% of those afflicted are young, impoverished, and uneducated women living in the world's poorest countries. Cervical cancer is the most frequent female genital tract malignancy in Nigeria, with the majority of patients suffering from advanced stages of the disease.

Cervical cancer prevention requires HPV vaccination and cervical screening. The current vaccine does not protect against all high-risk (HR) HPV types, and many low-income countries have yet to fully implement it. Furthermore, because vaccination programs primarily target schoolgirls, the world now faces a generation of women who rely only on cervical cancer screening and early diagnosis to lower their risk. Women in low-resource settings, particularly those living in rural areas without access to screening programs, bear a disproportionate share of the illness burden. Screening services are mostly provided by tertiary health institutions, and opportunistic exercises are largely conducted in urban areas.

Nigeria's cervical screening coverage at only 8.7% is extremely poor.<sup>2</sup> A wide range of psychological, societal, political, and institutional reasons contribute to the poor



uptake. Lack of awareness, insufficient knowledge of the disease and preventative treatments, lack of spousal support, misperceptions, stigma and modesty, cultural beliefs and traditions, expense of screening, and access to and usage of health facilities are some of the most stated impediments.<sup>3-6</sup>

Low level of awareness and knowledge of cervical cancer and screening has been identified as one of the causes of cervical screening underutilization in Nigeria. As a result, providing an educational intervention to raise awareness, knowledge, and comprehension of women's perspectives regarding cervical cancer and screening will be a significant step in enhancing women's health. Women may be more likely to screen if they receive health information. The utility of health education programs in boosting cervical cancer screening usage is well supported by evidence from a systematic review of research conducted in developed countries.<sup>7</sup>

A Pap smear test, which involves the collection of cells from the cervix for evaluation under a microscope by a cytopathologist, is the most widely used cervical cancer screening tool in the world. Due to lack of infrastructure, skilled staff, restricted health budgets, and competing healthcare demands, this strategy is not feasible in low resource areas.<sup>8</sup>

## Methodology

**Study Location:** Orhuwhorun community in Udu Local government area (LGA), one of the 15 rural LGAs in Delta State was our study location. Delta State is one of nine states in the Niger Delta region of Nigeria. It was estimated from the 2006 census figures that Udu LGA has a population of 142,480 including Orhuwhorun. Orhuwhorun has grown to be the second prominent and fast developing town in the Udu LGA due to the establishment of Delta Steel Company built in the 1970s. There is a primary health centre in Orhuwhorun where visual inspection with acetic acid screening is accessible however, further investigations like Pap testing, colposcopy are available at the tertiary hospitals which is a long distance from rural areas and affordability is of great concern.

**Study Design and Population:** This cross-sectional study was conducted on 234 asymptomatic women between 30 to 65 years of age who were resident in Orhuwhorun community (NB: this study was a subset of a study on self-sampling for HPV testing). HPV testing is recommended by WHO for women over 30 years of age due to the transient nature of HPV infections in younger women. Women who were

pregnant, experiencing monthly menstrual flow, had history of total hysterectomy and mental illness were ineligible to participate. Also excluded are women who did not give consent.

**Sample Size Determination:** The formula ( $n = z^2pq/d^2$ ) for one proportion study was used in calculating the sample size, where p was 81.2% (proportion of women who have preference for self-sampling in the future from a study in Ile-Ife, Nigeria). A minimum sample size of 234 was determined. The significance level was set at 5% ( $\alpha = 0.05$ ).

**Sampling Method:** A multistage sampling technique was used to select the participants. The first stage involved selecting Udu LGA from the 15 rural LGAs in Delta State by a simple random method. The second stage involved selection of Orhuwhorun from the 10 wards in Udu by a simple random sampling technique. The third stage involved selecting five streets in Orhuwhorun community from 15 major streets. In the final stage, systematic sampling was employed to select one out of every two households in the chosen streets with an eligible participant. In the houses where there is more than one eligible female, balloting was used to select a participant.

**Study Procedure:** The leadership of Orhuwhorun community were duly informed on the purpose and protocol of the research. The primary investigator and three research assistants aided in administering the questionnaire. The assistants were trained during a two-hour session on the aim and objectives of the study. Prior to the data collection phase, a digital town crier was paid to compose a jingle in pidgin English on cervical cancer awareness and drove round the community, playing the jingle and informing the people that researchers will be coming to their homes for a survey. On each day of data collection, one household out of every two households on the chosen streets in Orhuwhorun were systematically selected, and an eligible female was interviewed after informed consent.

**Data Collection Instrument:** The data collection tool was a semi-structured questionnaire reviewed by a panel of experts for face and content validity. The questionnaire was interviewer-administered. It was divided into two sections. Section A was on socio-demographic characteristics including age, educational level and marital status. Section B consisted of question on awareness of screening methods and if they have ever been screened. Level of awareness was ascertained by



the proportion of respondents who ticked YES to the question “have you ever heard of cervical cancer screening methods?” Uptake rate was determined by the number of those who reported they have ever been screened.

**Data Analysis:** Relevant data were coded and entered Microsoft Excel. Statistical analyses were conducted using IBM SPSS statistics version 25 (IBM Corp., Armonk, NY, United States). Descriptive statistics (numbers and proportions) were used to report the sociodemographic characteristics of the women. Using questionnaire data, frequencies were computed to describe level of awareness of cervical cancer screening methods and uptake.

**Ethical Considerations:** Prior to the commencement of the study, approval was obtained from the Ministry of Health Research Ethics Committee (MOHREC) Asaba, Delta State with reference number HM/596/T/139. We also obtained an approval from Udu Local Government Primary Health Care Authority.

## Results

A total number of 234 questionnaires were administered to the respondents. Table 1 shows that the mean age of respondents was  $41.08 \pm 8.45$  years, 112 (47.9%) were within 30 and 39 years, 80 (34.2%) were within 40 and 49 years, 34 (14.5%) were within 50 and 59 years while 8 (3.4%) were within 60- and 65-years age group. Most of the respondents were married 213 (91.0%), 12 (5.1%) were single, 4 (1.7%) were separated while 5 (2.1%) were widows. The majority 222 (94.9%) of them were Christians, 7 (3.0%) practiced Islam, while 5 (2.1%) were traditional worshippers. The table also shows that 106 (45.3%) had only completed their secondary school education, 78 (33.3%) had attained tertiary level of education, 42 (18.0%) stopped at primary school while 8 (3.4%) did not go to school. The majority 165 (70.5%) of the respondents were artisans, 40 (17.1%) were civil servants, 14 (6.0%) were health workers while 15 (6.4%) were full time housewives.

### Socio-demographic characteristics of respondents

**Table 1:** Socio-demographics among respondents

Characteristics (n=234)	Percentage (%)	Frequency
<b>Age years</b>		
30 – 39	112	47.9
40 – 49	80	34.2
50 – 59	34	14.5
60 – 65	8	3.4

<b>Total</b>	<b>234</b>	<b>100</b>
<b>Mean age</b>		
	$41.08 \pm 8.45$ years	
<b>Marital Status</b>		
Single	12	5.1
Married	213	91.0
Separated	4	1.7
Widows	5	2.1
<b>Total</b>	<b>234</b>	<b>100</b>
<b>Religion</b>		
Christianity	222	94.9
Islam	7	3.0
Traditional Worshippers	5	2.1
<b>Total</b>	<b>234</b>	<b>100</b>
<b>Educational Level</b>		
None	8	3.4
Primary	42	18.0
Secondary	106	45.3
Tertiary	78	33.3
<b>Total</b>	<b>234</b>	<b>100</b>
<b>Occupation</b>		
Civil servant	40	17.1
Health Worker	14	6.0
Housewife	15	6.4
Artisan	165	70.5
<b>Total</b>	<b>234</b>	<b>100</b>

**Table 2:** Level of awareness of cervical cancer screening methods among respondents

Characteristics	Freq (n=234)	Percent (%)
<b>Have you ever heard of CC screening methods?</b>		
No	212	90.6
Yes	22	9.4
<b>Total</b>	<b>234</b>	<b>100.0</b>

Table 2 reveal that majority 212 (90.6%) of our study population have never heard of cervical cancer screening methods while 22(9.4%) have heard of it.

**Table 3:** Cervical cancer screening uptake among respondents

Characteristics	Freq (n=234)	Percent (%)
<b>Have you ever been screened for cervical cancer?</b>		
No	224	95.7
Yes	10	4.3
<b>Total</b>	<b>234</b>	<b>100.0</b>

Table 3 show that majority 224(95.7%) of the respondents have never been screened for cervical cancer while only 10 (4.3%) have.

## Discussion

Although uptake of screening is reported to be low in Nigeria, studies from rural areas have reported lower



uptake of cervical cancer screening. Only ten (4.3%) respondents in this present study had done a cervical cancer screening test at some time. Among women interviewed in two rural areas in Lagos, none had been screened for cervical cancer.<sup>9</sup> Again, at rural Okada a community in Edo state, Southern Nigeria, none had been screened for cervical cancer.<sup>10</sup> A low uptake of cervical cancer screening was however, also observed in a study in Olusosun, a commercial and residential area of Lagos where only 5% of the female respondents had undertaken a pap smear,<sup>11</sup> 5% screening uptake was also reported in Oyo<sup>12</sup> which were comparable to our finding. Slightly inconsistent with this study finding was a study in Maiduguri where only 2.3% had ever been screened.<sup>13</sup>

A survey in Britain reported 91% of women have had a cervical cancer screening test at least once<sup>14</sup> while 73% in Pakistan had gotten a pap test.<sup>15</sup> Uptake of cervical cancer screening varies globally, being higher in developed countries compared with less developed due to established national cervical cancer screening programmes in developed nations. Studies carried out in some other African countries also showed low uptake of cervical cancer screening, but they were still higher than results from studies in Nigeria. In a Kenyan study, uptake was 6%,<sup>16</sup> 3.3% in Ethiopia,<sup>17</sup> 5% in Zimbabwe,<sup>18</sup> 7% in Cambodia,<sup>19</sup> 9% in the Democratic Republic of Congo,<sup>20</sup> 15.5% in Cameroon,<sup>21</sup> 17% in Zimbabwe<sup>22</sup>, 0.8% in a community-based study in Elmina, Ghana<sup>23</sup> and none had been screened in a Zambian study.<sup>24</sup>

Our study also found a small proportion (9.4%) of women were aware of cervical cancer screening methods, which is not consistent with 18.2% in Ekiti,<sup>25</sup> 23.2% in Southeast Nigeria,<sup>26</sup> 40.7% in Oyo,<sup>27</sup> 50.6% among staff and students in Niger Delta University<sup>28</sup>, 68.1% in Enugu,<sup>29</sup> 16.8% in Democratic Republic of Congo<sup>20</sup>, 41.5% in Ethiopia<sup>17</sup> and 53.3% in South Africa.<sup>30</sup> These differences can be attributed to the fact that our study population was basically rural and less educated women.

**Limitations:** A limitation of our study is the use of interviewer administered questionnaires which may have skewed responses towards what was perceived to be more socially acceptable. Our sample size was moderate, and the demographic characteristics of our participants also differs from that of the general Nigeria population, and this may limit the generalizability of our results. There is need for the government, non-governmental organisations, and health workers to increase cervical cancer awareness and promotion campaigns. Improving

access to cervical cancer prevention services is very crucial as well as making screening affordable.

### Conclusion

Low level of awareness of cervical cancer and screening has been identified as a factor associated with underutilization of cervical screening in Nigeria. Providing educational interventions to raise awareness, knowledge, and comprehension of women's perspectives regarding cervical cancer and screening will be a significant step in enhancing women's health.

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