

East African Medical Journal Vol. 102 No. 12 December 2025

KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARDS CERVICAL CANCER AND SCREENING AMONG MARKET WOMEN IN MILE 3 DIOBU, RIVERS STATE, NIGERIA

Amadi Joyce Chizindu, Department of Nursing Services, Rivers State University Teaching Hospital, Ahmadu Bello University, Zaria, Distance Learning Centre Harley St, Port Harcourt, 500101, Rivers State, Nigeria,

Ugwa Okezie Chinedu, Department of Anatomical Pathology, University of Port Harcourt, Rivers State

Corresponding author: Ugwa Okezie Chinedu, Department of Anatomical Pathology, University of Port Harcourt Teaching Hospital, Rivers State, Nigeria. Email: ugwaokezie@gmail.com

KNOWLEDGE, ATTITUDE, AND PRACTICE TOWARDS CERVICAL CANCER AND SCREENING AMONG MARKET WOMEN IN MILE 3 DIOBU, RIVERS STATE, NIGERIA

A. J. Chizindu and U. O. Chinedu

ABSTRACT

Background: Cervical cancer remains a significant public health concern among women in Nigeria, largely due to limited awareness and poor screening practices. Although effective prevention strategies such as Human papilloma virus vaccination, cervical screening awareness and utilization remain low, particularly among women in the informal sector. Cervical cancer prevention is facilitated through health education, HPV vaccination advocacy, and promotion of screening services at community levels. However, interventions require an understanding of women's knowledge, attitudes, and perceived barriers.

Objective: This study assessed the knowledge, attitude, and practice toward cervical cancer and its screening among market women in Port Harcourt Local Government Area, Port Harcourt.

Methods: A descriptive cross-sectional survey design was adopted. Data were collected using a structured questionnaire administered to 202 respondents. Descriptive statistics were used to summarize knowledge, attitudes, practices, and barriers to screening.

Results: 126 (62.37%) of respondents had heard of cervical cancer, only 26 (12.87%) demonstrated very good knowledge, with an overall mean knowledge score of 2.52, indicating a fair level of knowledge. Despite this, actual screening practice was low: only 22 (10.83%) had ever undergone screening, and 14 (6.93%) reported regular annual screening. Major barriers identified. High cost was the most commonly reported barrier, with 111 respondents (54.95%) either strongly agreeing or agreeing that screening is expensive. This item had the highest mean score (mean = 2.58). Barriers were measured using a four-point Likert scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1), and mean scores were calculated using a weighted mean approach.

Conclusion: Awareness and attitudes toward cervical cancer screening among market women are moderate, actual practice remains poor. The study recommends intensified health education, subsidized screening services, and improved accessibility to enhance early detection and prevention among women.

INTRODUCTION

Cervical cancer is the fourth most common cancer in women globally, accounting for approximately 6.5% of all female cancers¹. It is a malignancy that arises from the uterine cervix¹. Human Papillomavirus (HPV) infection is the primary cause of cervical cancer, with the major high-risk types (HPV-16, HPV-18) responsible for approximately 70% of case². The predisposing factors that enable the oncogenic strains of HPV to cause cervical cancer include smoking, genital infections and immunosuppressive states like acquired immunodeficiency syndrome^{3,4}. According to the World Health Organization (WHO), there were an estimated 570,000 new cases and 311,000 deaths from cervical cancer worldwide in 2018⁴ while in 2022 around 660 000 new cases were seen worldwide⁴. Due to low uptake in cervical screening, the highest rates of cervical cancer incidence and mortality are in sub-Saharan Africa (SSA), Central America and South-East Asia⁵. Cervical cancer is most commonly diagnosed in women between the ages of 35 and 44 years though it can affect adult women of wide age ranges⁴. Cervical cancer exerts a profound impact, contributing substantially to cancer-related morbidity and mortality⁶. In Nigeria, cervical cancer ranks as the third most common cancer among women, with 12,000 new cases and 8,000 deaths recorded in 2020⁶. Within Nigeria, disparities in cervical cancer prevalence exist at the state and local government levels, reflecting variations in healthcare access, awareness, and cultural

factors. In Port Harcourt, the capital city of Rivers State, cervical cancer remains a significant health concern, with limited data available on the knowledge, attitudes, and practices of market women towards cervical cancer screening. Despite being a significant economic hub, there has been limited data available in Port Harcourt on the knowledge, attitudes, and practices of market women toward cervical cancer screening. Previous studies however highlighted the significant impact of late-stage diagnoses and low screening rates among market women⁶.

Barriers such as lack of awareness, accessibility, and cultural beliefs persist, hindering early detection and intervention efforts. Understanding the unique challenges faced by market women in accessing cervical cancer screening services is imperative. By addressing these challenges, targeted interventions and policies can be developed to improve screening uptake and reduce mortality rates in local communities.

Nurses play a central role in cervical cancer prevention through health education, HPV vaccination advocacy, and promotion of screening services at primary and community levels. As frontline healthcare providers, they are strategically positioned to influence women's health-seeking behaviours and improve screening uptake. However, effective nursing interventions depend on a clear understanding of women's knowledge, attitudes, and perceived barriers. Thus, there is an urgent need to investigate and address the knowledge gaps and barriers to cervical cancer screening among market women in

Mile 3 Diobu Port Harcourt Local Government Area, Rivers State. Therefore, this study aimed to assess the knowledge, attitudes, practices, and perceived barriers toward cervical cancer screening among market women in Mile 3 Market, Diobu, Port Harcourt Local Government Area, Rivers State, Nigeria.

MATERIALS AND METHODS

Study area

The study was conducted at Mile 3 Market, Nkpolu-Oroworukwo, Port Harcourt, Rivers State, Nigeria. Mile 3 Market is a multi-purpose marketplace known for selling food, clothing, electronics, and other products. It attracts people from diverse backgrounds and serves as a vital pillar of the local economy.

Study design and population

A cross-sectional descriptive study design with a qualitative approach was adopted to assess knowledge, attitudes, and practices toward cervical cancer and screening among market women. The study population included adult females engaged in informal businesses within the market, including young women and teenagers at risk of cervical cancer.

Operational keywords considered in this study included knowledge which is defined as the market women's understanding, information, or skills acquired through experience or study regarding cervical cancer and its prevention; Attitude, referring to the market women's favorable or unfavorable evaluation of cervical cancer and screening practices; practice, encompassing behaviors or actions regularly performed by the market women, often reflecting habits or traditions related to cervical cancer prevention and screening; screening, a strategy employed to detect conditions or risk markers in individuals or populations, specifically for

early detection of cervical cancer; and market women, defined as adult females engaged in informal businesses within marketplaces in Port Harcourt Local Government Area.

Sample size determination

The sample size was calculated using Taro Yamane's (1967) formula⁷:

$$N / (1 + N(e)^2)$$

Where:

n = sample size

N = population under study (1000)

e = level of precision ($\pm 6\%$).

$$n = 1000 / (1 + 1000(0.06)^2) = 1000 / (1 + 3.6) = 1000 / 4.6 = 217.4$$

$$\text{Attrition rate} = 10\% \text{ of sample size } (217.4) = 21.74$$

$$\text{Total sample size} = n + \text{attrition rate} = 217.4 + 21.74 = 239.14$$

Therefore, a total number of 239 market women would participate in the study.

Sampling technique

A purposive sampling technique was used to select 239 market women selling in Mile 3 Market Port Harcourt.

Instrument for data collection

Data were collected using a well-structured questionnaire consisting four sections: socio-demographic data of the respondents; knowledge of cervical cancer and screening programs; attitudes and practices toward screening; and perceived barriers to the utilization of cervical cancer screening services.

Validity of instrument

The questionnaire was developed based on the study objectives, research questions, and review of relevant literature, with modifications from instruments used in previous related studies to ensure content validity. Each question was examined for clarity, coverage, and relevance, and peer review scrutiny ensured face validity.

Reliability of instrument

Cronbach's alpha coefficient was used to measure the internal consistency/reliability of the instrument. Pilot study of the instrument was carried out among market women at Bishop Okoye axis still at Mile 3 market; and corrections were made before administration of the instrument to the actual respondents.

Data analysis

Completed questionnaires were checked for completeness and analyzed using SPSS version 25 and Microsoft Excel 2010. Descriptive statistics, including frequencies, percentages, means, tables, and charts, were used to summarize responses. Excel was also used for initial data cleaning, validation, and graphical presentation.

Method of data collection

Structured and pretested questionnaires were administered after obtaining permission from market authorities and informed consent from participants. The study details were explained

to respondents, and questionnaires were collected on the same day after completion.

RESULTS

The following are the frequency and percentage tables, bar chart(s) and pie chart(s) used in the research work, including the analysis used to answer the research questions.

PRESENTATION AND ANALYSIS OF DATA

Table 1 shows a total of 202 valid female respondents participated in the study. The majority were aged 30–39 years, 65 respondents (32.18%) predominantly Christian, 181 (89.60%) and more than half (109, 53.96% people) had attained tertiary education. Most respondents were married (110, 54.46%), followed by single women (81, 40.20%) with few divorced/separated (7, 3.47%) or widowed (4, 1.98%).

Table 1
Respondents' Socio-demographic Characteristics

Socio-demographic characteristics	Frequency	Percentage (%)
Gender		
Female	202	100.0
Total	202	100.0
Age group (in years)		
20 – 29	61	30.30
30 – 39	65	32.18
40 – 49	48	23.76
50 and above	28	13.86
Total	202	100.00
Religion		
Christianity	181	89.60
Islam	6	2.97
Traditional	12	5.94
Others	3	1.49
Total	202	100.00
Educational level		
Primary	10	4.95

Secondary	77	38.12
Tertiary	109	53.96
No formal education	6	2.97
Total	202	100.00
Marital Status		
Single	81	40.20
Married	110	54.46
Divorced/separated	7	3.47
Widowed	4	1.98
Total	202	100.00

Figure 1 below shows awareness and knowledge of cervical cancer were assessed using structured questionnaire items. Overall, 126, 62.37% (both strongly agree and agree) reported having heard of cervical cancer. Just over half (113, 55.45%) demonstrated correct knowledge regarding the organ affected, the role of HPV as the causative agent, and abnormal vaginal bleeding as a symptom, indicating a generally high level of knowledge. The highest level of awareness was observed for early detection (81, 40.20% strongly agreed and 85, 42.08% agreed having a total of 82.28%), with the majority recognizing that cervical cancer is treatable when diagnosed early.

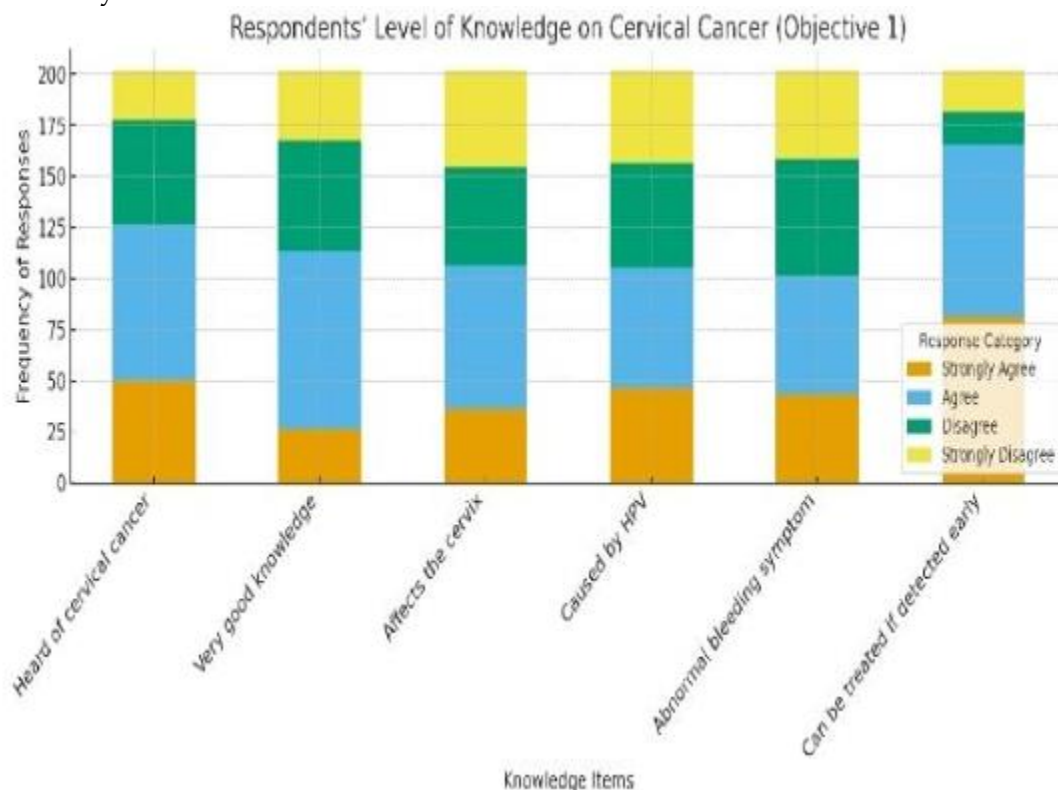


Fig 1: Respondents Knowledge on Cervical Cancer

Figure 2 below shows respondents' attitudes and practices toward cervical cancer screening. Respondents demonstrated

generally positive attitudes toward cervical cancer screening (85, 42.08% strongly agreeing and 90, 44.5% agreeing), with most

considering it important and a routine component of women's health care (97, 48.02% strongly agreeing, and 89, 44.06% agreeing) and many expressing willingness to undergo screening regularly with 32 respondents (15.84%) strongly agreeing and 101 respondents (50.00%) agreeing, while 168 respondents (83.16%) stated they would recommend screening to friends and family.

However, actual screening practice was poor, with few respondents having ever been screened or undergoing regular screening, and HPV vaccination uptake remaining low. A substantial proportion also reported not knowing where to access screening services, highlighting a gap between positive attitudes and service utilization.

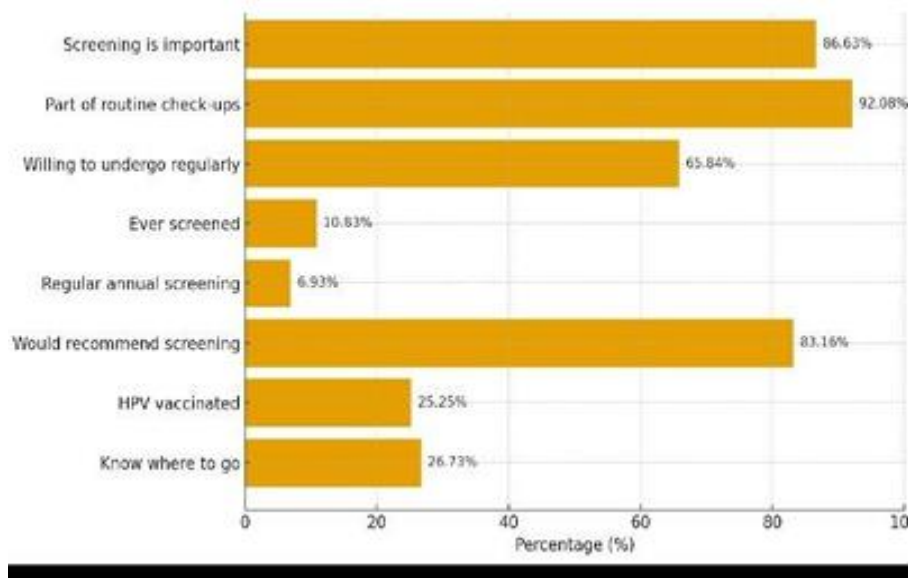


Figure 2: Respondents attitude and Practices towards Cervical Cancer Screening

Respondents gave their reasons why they thought accessing cervical screening was difficult (Table 2). The highest-scoring barrier was cost: 51 respondents, 25.25% strongly agreed and 60, 29.70% agreed that screening would be expensive (combined 101 respondents, 54.95%). Almost half cited lack of time or long waiting periods (36, 17.82% strongly agree; 63, 31.19% agree). Fear of results was also notable (25, 12.38% strongly agree; 61, 30.20% agree). Embarrassment (32, 15.84% strongly agree; 46, 22.77%) and belief that screening is unnecessary (28, 13.86% strongly agree; 130, 4.85% agree; mean = 2.19)

were less frequent. The Likert scale responses were analyzed using a weighted mean approach, with a calculated average mean of 2.33 ($2.29 + 2.19 + 2.40 + 2.21 + 2.58 = 11.67/5 = 2.334$). The highest mean scores were recorded for the belief that screening is expensive (mean = 2.58) and awareness of screening availability (mean = 2.40), indicating that cost remains the most significant perceived barrier despite awareness of available services.

The Likert scale was weighted as follows: Strongly Agree = 4, Agree = 3, strongly disagree = 2, and disagree = 1; neutral responses were excluded from analysis.

Table 2*Factors Responsible for Respondents' Barriers to the Under-utilization of Available Cervical Cancer Screening*

Item Question(s)	Scale/options	Frequency	Percentage (%)
I do not undergo cervical cancer screening because I am embarrassed by the procedure	Strongly Agree	32	15.84
	Agree	46	22.77
	Disagree	73	36.14
	Strongly disagree	51	25.25
	Total	202	100
	Mean	2.29	
	Remark	Low	
I do not undergo cervical cancer screening because I do not think it is necessary.	Strongly Agree	28	13.86
	Agree	30	14.85
	Disagree	88	43.56
	Strongly disagree	56	27.72
	Total	202	100
	Mean(x)	2.19	
	Remark	Low	
I am aware of the availability of cervical cancer screening services in my area but no time to go for the screening and am afraid of the waiting time in the hospital.	Strongly Agree	36	17.82
	Agree	63	31.19
	Disagree	49	24.26
	Strongly disagree	54	26.73
	Total	202	100
	Mean(x)	2.40	
	Remark	High	
I am afraid of the result of the cervical cancer screening	Strongly Agree	25	12.38
	Agree	61	30.20
	Disagree	47	23.27
	Strongly disagree	69	34.6
	Total	202	100
	Mean	2.21	
	Remark	Low	
I have not gone for cervical cancer screening because I believe it will be expensive.	Strongly Agree	51	25.25
	Agree	60	29.70
	Disagree	46	22.77
	Strongly disagree	45	22.28
	Total	202	100
	Mean(x)	2.58	
	Remark	High	

This figure 3 shows the barriers encountered in this study using a pie chart as seen above. Multiple barriers hindered cervical cancer

screening uptake, with cost being the most frequently reported, followed by lack of time or long waiting periods. Fear of screening

results and embarrassment were also common barriers, while a smaller proportion believed screening was unnecessary.

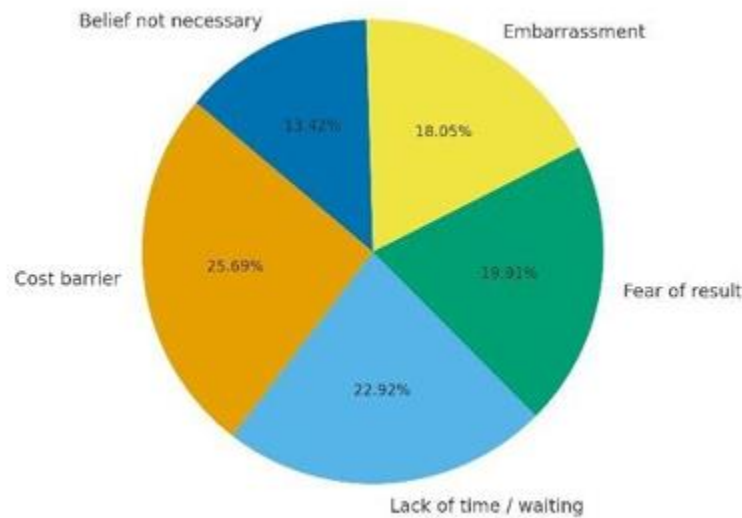


Figure 3: Respondents' Barriers to the Underutilization of Available Cervical Cancer Screening

A Chi-square test of independence showed a significant relationship between knowledge and attitude toward cervical cancer screening, χ^2 (4, N = 202) = 18.45, $p = 0.001$.

This indicates that respondents with higher knowledge levels tended to have more positive attitudes toward screening. Since $p < 0.05$, reject H_0 and conclude that knowledge level is significantly associated with attitude.

Table 3

Association between Knowledge Level and Attitude toward Cervical Cancer Screening among Respondents (n = 202)

Knowledge level	Poor attitude	Fair attitude	Good attitude	Total
Poor knowledge	15	30	10	55
Fair Knowledge	20	60	40	120
Good knowledge	5	6	16	27
Total	40	96	66	202

Test	Value	Df	P-value
Pearson χ^2	18.45	4	0.001

DISCUSSION

This study assessed the knowledge, attitudes, and practices toward cervical cancer and screening among market women in Port Harcourt. The findings revealed that although awareness of cervical cancer was moderate (62.4%), comprehensive knowledge of its causes, symptoms, and prevention was generally fair. While attitudes toward screening were largely positive, actual uptake of screening services remained very low. These findings are consistent with patterns reported in both Nigerian and international studies^{9,10}.

Several studies conducted in Nigeria and other low- and middle-income countries have reported similar gaps between awareness and comprehensive knowledge of cervical cancer. Studies by Mafiana et al demonstrated that moderate awareness does not necessarily translate into adequate understanding of cervical cancer risk factors, symptoms, or prevention, particularly among women with limited access to health information⁸. Educational level, socioeconomic status, and access to healthcare services have been shown to significantly influence knowledge levels. Evidence further suggests that targeted educational interventions, including community-based programs and mass media campaigns, can significantly improve understanding of cervical cancer and the importance of screening¹¹. Comparable findings have been reported in other settings, where limited knowledge of cervical cancer symptoms and its association with HPV has been identified as a major barrier to early detection and prevention^{12,13}.

The findings of this study are consistent with earlier Nigerian research indicating persistent knowledge gaps despite moderate awareness. A study reported that although many women

in Northern Nigeria had heard of cervical cancer, fewer could correctly identify HPV as the causative agent¹². Similar observations have been made among market women in Enugu and other parts of Nigeria, highlighting the need for intensified community health education in line with WHO recommendations^{13,14,15,16}. In contrast, studies from higher-resource settings, such as Malaysia, have reported better knowledge levels, underscoring the role of structured education and sustained awareness campaigns¹⁷.

With regard to attitudes, the majority of respondents believed cervical cancer screening is important and should be part of routine health checks. This aligns with findings from Ndikom and Ofi (2012), who observed that Nigerian women generally express positive attitudes toward screening once informed¹⁸. However, despite this favorable perception, willingness to undergo regular screening was only moderate, and actual screening uptake remained very low. This disconnect between positive attitudes and poor practice has been widely documented in sub-Saharan Africa and reflects the influence of structural and cultural barriers that limit utilization of preventive services^{19,20}.

Key barriers identified in this study included cost, lack of time, fear of screening results, and embarrassment. Financial constraints have consistently been reported as a major obstacle to screening uptake among Nigerian women, while fear of diagnosis and stigma have also been shown to discourage participation in screening programs in both Nigerian and other African contexts^{8,21,22,23}. In response to these challenges, WHO operational guidance emphasizes strategies such as subsidized or free screening services, deployment of mobile clinics, appointment systems to reduce

waiting times, and comprehensive client counseling to reduce fear and embarrassment^{4,5}. Integrating these approaches into local cervical cancer prevention programs could substantially improve screening uptake and align national practice with global standards.

HPV vaccination uptake in this study was also low, with only 25.3% of respondents reporting prior vaccination. This finding is consistent with earlier reports indicating that HPV vaccination remains underutilized in Nigeria due to poor awareness, high cost, and limited availability²⁴. In contrast, countries that have implemented structured national immunization programs report significantly higher vaccination coverage and corresponding reductions in cervical cancer incidence²⁵.

Limitations

The major limitation of this study was the reluctance of many market women to participate, largely due to their preoccupation with trading activities and limited interest in non-commercial engagements. This resulted in delayed data collection, necessitating repeated visits to the markets to achieve adequate participation. The extended data collection period increased transportation and logistical costs and imposed time and financial constraints.

CONCLUSION

This study revealed that although awareness and attitudes toward cervical cancer screening among market women in Port Harcourt were generally positive, actual screening practice remained very low. Cost, lack of time, and fear were key barriers limiting participation.

RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made to enhance awareness, improve attitudes, and increase the practice of cervical cancer prevention among women in Port Harcourt and Nigeria as a whole: Government and policy makers, through the Federal and State Ministries of Health, should implement regular subsidized or free cervical cancer screening programs in markets and community health centers to improve accessibility. Cervical cancer screening and HPV vaccination should also be integrated into the National Primary Health Care (PHC) framework as part of routine health services for women. Doctors, nurses and other health professionals should play a leading role in community-based health education to increase awareness of cervical cancer, its causes, symptoms, and prevention, while continuous counseling during antenatal and postnatal visits should be encouraged to promote preventive health-seeking behaviors. In addition, non-governmental organizations and community leaders should collaborate with health authorities to organize sensitization campaigns and provide logistical or financial support for screening programs. Sustained public awareness campaigns through radio, television, and social media are also needed to disseminate accurate information, dispel myths, and reduce stigma surrounding cervical cancer screening. Furthermore, future research should focus on evaluating interventional strategies, particularly nurse-led community education programs, to determine their effectiveness in improving cervical cancer screening uptake.

Authors' postal address

Amadi Joyce Chizindu, Department of Nursing Services, Rivers State University Teaching Hospital, Ahmadu Bello University, Zaria, Distance Learning Centre Harley St, Port Harcourt 500101, Rivers State, Nigeria.

Ugwa Okezie Chinedu, Department of Anatomical Pathology, University of Port Harcourt, PMB 6173, Rivers State. Zip code 500102.

Ethical considerations

Ethical approval for this study was obtained from the Research Ethical Committee of the University of Port Harcourt Teaching Hospital, Rivers State with reference number: UPTH/ADM/90/S.II/VOL/XI/476.

Written informed consent was obtained from all participants prior to data collection. Participation was voluntary, respondents were informed of their right to decline or withdraw at any stage without any consequences and confidentiality of respondents' information was strictly maintained. No personal identifiers were included in the questionnaire.

Authors' contributions

Author 1: Conceptualization, methodology, software validation, formal analysis, resources and funding

Author 2: Data curation, writing original draft, writing review and draft, supervision, project administration and funding.

REFERENCES

1. Bray F, Ferlay J, Soerjomataram I, Siegel RL, Torre LA, Jemal A. Global cancer statistics 2018: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2018;68(6):394–424. doi:10.3322/caac.21492.
2. Walboomers JM, Jacobs MV, Manos MM, Bosch FX, Kummer JA, Shah KV, et al. Human papillomavirus is a necessary cause of invasive cervical cancer worldwide. *J Pathol.* 1999;189(1):12-19.
3. Centers for Disease Control and Prevention. Cervical cancer risk factors [Internet]. Atlanta (GA): U.S. Department of Health and Human Services; 2022 [cited 2025 Jan 12]. Available from: <https://www.cdc.gov/cervical-cancer/risk-factors/index.html>
4. World Health Organization. Cervical cancer [Internet]. Geneva: World Health Organization; 2020 [cited 2025 Jan 12]. Available from: <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>
5. World Health Organization. Operational framework for primary health care: transforming vision into action [Internet]. Geneva: World Health Organization; 2022 [cited 2025 Jan 12]. Available from: <https://www.who.int/publications/i/item/9789240042776>
6. World Health Organization. Nigeria to vaccinate 7.7 million girls against the leading cause of cervical cancer. WHO Regional Office for Africa; 24 Oct 2023. Available from: <https://www.afro.who.int/countries/nigeria/news/nigeria-vaccinate-77-million-girls-against-leading-cause-cervical-cancer>
7. Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). New York, NY: Harper and Row
8. Mafiana JJ, Dhital S, Halabia M, Wang X. Barriers to uptake of cervical cancer screening among women in Nigeria: a systematic review. *Afr Health Sci.* 2022;22(2):295–309. doi:10.4314/ahs.v22i2.33
9. Eze JN, Umeora OIJ, Obuna JA, Ekwuatu VE, Ejikeme BN. Cervical cancer awareness and cervical screening uptake at the Mater Misericordiae Hospital, Abakaliki, Nigeria. *Ann Afr Med.* 2012;11(4):238-243. doi:10.4103/1596-3519.102846.
10. Getahun F, Mazengia F, Abuhay M, Birhanu Z. Comprehensive knowledge about cervical cancer is low among women in Northwest Ethiopia. *BMC Cancer.* 2013;13:2. doi:10.1186/1471-2407-13-2.

11. Ogundipe L, Ojo T, Oluwadare T, Olayemi E, Oluwafemi F, Oni O, et al. Cervical cancer screening and vaccination: knowledge, awareness, and attitude of female staff in a Nigerian University. *BMC Women's Health*. 2023;23(1):218
12. Nwagu JE, Ashimi AO, Zahra A, Eze C. Knowledge, Attitude and Practice of Cervical Cancer Screening and Vaccination among Women in Gwagwalada Area Council, Abuja, Nigeria. *J Adv Res Med Health Sci*. 2021; DOI:10.61841/t585zc72.
13. Olutunde OA, Umeora OIJ, Ikeako LC. Determinants of Knowledge of Cervical Cancer, Attitude Towards Screening and Practice of Cervical Cancer Prevention Among Antenatal Attendees in Ibadan, Southwest Nigeria. *J Obstet Gynaecol*. 2021; PMID: 34158829.
14. Adedokun KE, Ayodapo AO. Cervical cancer: Current knowledge, perception and associated factors among female undergraduate students in a Nigerian polytechnic. *Niger J Fam Pract*. 2018;9(1):7–13. Available from: <https://www.ajol.info/index.php/njfp/article/view/166280>
15. Agboeze J, Ezeani NN, Nwali MI, Ukaegbe C. Cervical cancer screening knowledge, uptake and barriers among female undergraduates in a Nigerian university. *Niger Med J*. 2022;63(3):195–202. Available from: <https://nigerianmedjournal.org/index.php/nmj/article/view/103>
16. Oruikor GJ, Durotoye MP, Jeremiah AG. Knowledge of cervical cancer among women of reproductive age in Ibadan North LGA, Oyo State, Nigeria. *Niger Health J*. 2023;23(3):145–153. Available from: <https://www.ajol.info/index.php/nhj/article/view/257708>
17. Wong LP, Wong YP, Low WY, Khoo EM, Shuib R. Knowledge and awareness of cervical cancer and screening among Malaysian women who have never had a Pap smear: a qualitative study. *Singapore Med J*. 2009;50(1):49–53. doi:10.11622/smedj.2009006
18. Ndikom CM, Ofi BA. Awareness, perception and factors affecting utilization of cervical cancer screening services among women in Ibadan, Nigeria: a qualitative study. *Reprod Health*. 2012;9:11. doi:10.1186/1742-4755-9-11.
19. Lyimo FS, Beran TN. Demographic, knowledge, attitudinal, and accessibility factors associated with uptake of cervical cancer screening among women in a rural district of Tanzania: Three public policy implications. *BMC Public Health*. 2012;12:22. doi:10.1186/1471-2458-12-22
20. Hyacinth HI, Adekeye OA, Ibeh JN, Osoba T. Cervical cancer and Pap smear awareness and utilization of Pap smear test among federal civil servants in North Central Nigeria. *PLoS ONE*. 2012;7(10):e46583. doi:10.1371/journal.pone.0046583.
21. Ezem BU. Awareness and uptake of cervical cancer screening in Owerri, South-Eastern Nigeria. *Ann Afr Med*. 2007;6(3):94–98.
22. Mutyaba T, Mmiro FA, Weiderpass E. Knowledge, attitudes and practices on cervical cancer screening among the medical workers of Mulago Hospital, Uganda. *BMC Med Educ*. 2006;6:13. doi:10.1186/1472-6920-6-13.
23. Olubodun T, Ogunbiyi O, Olayemi O. Barriers to cervical cancer screening uptake among rural women in South West Nigeria: a qualitative study. *BMC Public Health*. 2022;22:14314. doi:10.1186/s12889-022-14314-z.
24. Awodele, O., Adeyomoye, A. A., Awodele, D. F., Kwashi, V., Awodele, I. O., & Dolapo, D. C. A study on cervical cancer screening among nurses in Lagos University Teaching Hospital, Lagos, Nigeria. *Journal of Cancer Education*. 2011; 26(3), 497–504.
25. Bosch FX, Broker TR, Forman D, Moscicki AB, Gillison ML, Doorbar J, et al. Comprehensive control of human papillomavirus infections and related diseases. *Vaccine*. 2013;31 Suppl 7:H1-H31.