Nigerian Medical Journal
NIGERIA MEDICAL ASSOCIATION
Print ISSN 0300-1652, E-ISSN 2229-774X

Original Research

Assessment of Uptake of Cervical Pre-Cancer Screening among Women of Reproductive Age in Ogun State, Nigeria.

***Olaide Rufus Adenaya[1], Oluwaseyi Isaiah Odelola[2], Oluseyi Adedeji Aderinwale[3], Bernard Olumide Ewuoso[4], Olufemi Matson Badmus[3], Oluwaseun Okusanya[5], Oluwole Olutola Ojo[6], Lucky Ogochukwu Igbafa[7].**

[1]Department of Obstetrics and Gynaecology, Oba Ademola II Maternity Hospital, Abeokuta, Nigeria. [2]Department of Obstetrics and Gynaecology, State Hospital, Ijebu-Ode, Nigeria. [3]Department of Obstetrics and Gynaecology, Federal Medical Centre, Abeokuta, Nigeria. [4]Department of Obstetrics and Gynaecology, State Hospital, Ilaro, Nigeria. [5]Department of Obstetrics and Gynaecology, Epe General Hospital, Lagos, Nigeira. [6]Department of Obstetrics and Gynaecology, Randle General Hospital, Lagos, Nigeria. [7]Caring Heart Specialist Hospital, Oko-Oba, Agege, Lagos, Nigeria.

Abstract

Background: Cervical cancer is the second most common cancer in women in Nigeria and is largely preventable. However, in Nigeria, the absence of universal screening means individual awareness and knowledge significantly impact screening uptake. Previous studies have reported mixed results regarding awareness and screening rates.
The study assessed cervical screening uptake rate among women of reproductive age.
Methodology: It was a descriptive cross-sectional study among women of reproductive age across the three senatorial districts in Ogun State, Nigeria, using interviewer-administered questionnaires following ethical approval. Data analysis was performed using IBM SPSS version 25. The outcome variables included the level of awareness and knowledge of cervical cancer and its pre-malignant screening, as well as the level of uptake of cervical cancer.
Results: A total of 1310 women were interviewed, with 1233 responses analyzed. The mean age of the respondents was 32.33 ± 6.25 years. Of the respondents, 592 (48.0%) were aware of cervical cancer, 281 (22.8%) were aware of cervical screening, and 141 (11.4%) had good knowledge of cervical cancer. Eighty (6.49%) participants had been screened at least once, and only nine had been screened at least twice. The majority of the women, despite the poor awareness and knowledge levels, were willing to be screened in the future. There was a statistically significant association between cervical cancer awareness and uptake of screening ($X^2 = 9.282$, df =1, P-value = 0.002).
Conclusion: Awareness, knowledge, and screening uptake remain low among women in Ogun State. However, awareness of cervical cancer positively influences screening participation. Therefore, extensive awareness campaigns are recommended to improve screening rates and reduce cervical cancer prevalence.

Key Words: Awareness; Cervical Cancer; Knowledge; Pre-Malignant Lesions; Screening Uptake.

Correspondence: Olaide Rufus Adenaya. Department of Obstetrics and Gynaecology, Oba Ademola II Maternity Hospital, Ijemo, Abeokuta, Ogun State, Nigeria. **Email:** adenayaolaide@yahoo.com.

How to cite: Adenaya OR, Odelola OI, Aderinwale OA, Ewuoso BO, Badmus OM, Okusanya O, Ojo OO, Igbafa LO. Assessment of Uptake of Cervical Pre-Cancer Screening among Women of Reproductive Age in Ogun State, Nigeria. Niger Med J 2025; 66 (4):1550-1560. https://doi.org/10.71480/nmj.v66i4.987.

Quick Response Code:

Introduction

Cervical cancer is a preventable disease and can be eliminated as a public health problem within a generation through the eradication of HPV, regular screening, early detection and prompt treatment of pre-malignant lesions of the cervix. [1, 2]

Globally, it is the fourth most common cancer in women.[3] Low- and middle-income countries account for about 90% of the 342,000 deaths annually.[4] It remains a major public health burden among women of reproductive age in Nigeria.[5]

With routine HPV vaccination lacking or still in the early stage of implementation in low- and middle-income countries,[6] cervical screening remains key strategy in the prevention of cervical cancer. Several studies have reported varying levels of knowledge about cervical cancer and a wide range of screening uptake rates. [7-20] This study examined the current level of awareness and knowledge of cervical cancer, determinants of screening behaviour, and the overall screening uptake rate.

Materials and Methods

The study was a cross-sectional study carried out among women of reproductive age who presented in three hospitals across the three senatorial districts of Ogun State, Nigeria between June 2023 and December 2023.

All three hospitals were managed by the Ogun State Hospital Management Board. The three centers were selected using multistage random sampling techniques. All local government areas within each senatorial district were listed, and one was randomly selected from each. One hospital each was then randomly selected from the chosen local government areas. Each of the three hospitals ran antenatal clinics and other pregnancy-related services, delivery services and post-natal clinics. They also attend to most gynaecological conditions and provide family planning services.

The study was carried out among women of reproductive age (15-49 years) who were either attending the booking, antenatal, postnatal, family planning or gynaecological clinics in any of the three selected hospitals.

Women with suspected or confirmed cervical cancer, and those who refused to give consent were excluded from the study.

The ideal minimal sample size for the study was determined using Fisher's formula and a 13.3% cervical screening rate in a previous study in Lagos, Nigeria.[18] Calculated minimum sample size was 174; however, 1,310 participants were interviewed for wider coverage. Participants were randomly selected among eligible women who gave their consent. They were all given equal chances to participate by picking pre-numbered pieces of paper. The participants were recruited from all clinics within the Department of Obstetrics and Gynaecology at each hospital. All women who picked odd numbers were included in the study while those who picked even numbers were excluded. This continued at every assigned clinic until the sample size in each centre was complete.

An interviewer administered questionnaire was administered to each participant. A pilot study was conducted in another facility outside the selected centers. The Cronbach's alpha value of 0.732 (>0.7) for knowledge of cervical cancer, 0.816 (>0.7) for knowledge of cervical screening and 0.754 (>0.7) for uptake of cervical cancer screening gave a strong reliability of the research instrument.

Information obtained from questionnaires was coded and fed into a computerized spreadsheet. The outcome variables were level of awareness of cervical cancer and its pre-malignant screening, knowledge of cervical cancer and its pre-malignant screening, and level of uptake of cervical cancer. Awareness was assessed by asking whether participants had heard about cervical cancer and its pre-malignant screening

tests. Knowledge of cervical cancer was assessed by asking for symptoms and risk factors of cervical cancer and a score of less than three out of five questions in each section was graded as poor knowledge while a score of 3 or more in each section was graded good knowledge.[14] Knowledge about the screening for the pre-malignant state was assessed by asking for possible places where a woman could be screened, frequency of screening and available screening methods. A score of less than 3 out of five questions in each section was graded as poor knowledge while a score of 3 or more in each section was graded good knowledge.[14] Level of uptake of cervical cancer screening was graded based on the number of times the women have got screened and/or if they are up to date in screening. The grading was "No uptake if a woman had never been screened at all, "average uptake" if she had ever been screened but not up-to-date and "good uptake if she is up to date in her screening.

Data were presented in frequency tables and charts. Data analysis was performed using the IBM statistical package for social science version 25 (SPSS 25). Quantitative variables were described using measures of central tendency (mean, median, and mode) and measures of dispersion (range, standard deviation). Tests of significance were performed using Chi-square and t-tests for categorical and continuous variables, respectively. The level of significance was set at $P < 0.05$.

Ethical permission to carry out the study was sought and approval obtained from the Health Research Ethics Committees (HREC) with approval number OAMH/026/HREC/2023/008. Informed consent was obtained from the women.

Results

A total of 1,310 women of reproductive age were interviewed, out of which 1,233 were analyzed, giving a response rate of 94.12%. Responses excluded contained incomplete information. Regarding risk factors for cervical cancer, 381 (30.90%) had experienced coitarche before age 20, 580 (47.04%) had had two or more lifetime sexual partners, 45 (3.65%) had five or more deliveries, and 19 (1.54%) had used combined oral contraceptives.

Table 1: Socio-demographic characteristics of the respondents

Variables	Frequency (n=123) 1233	Percentage (100%)
Age Group(years)		
20-24	8	0.65
25-29	522	42.34
30-34	330	26.76
35-39	173	14.03
40-44	181	14.68
45-49	19	1.54
Mean = 32.33 (± 6.25), Range = 20- 49		
Marital Status		
Married	1204	97.65
Single	10	0.81
Divorced	19	1.54
Religions		
African Religion	8	0.65
Christianity	712	57.75
Islam	513	41.61

Parity of the Women		
0	281	22.79
1	320	25.95
2	272	22.06
3	180	14.60
4	144	11.68
>4	36	2.92
Level of Education		
None	17	1.38
Primary	146	11.84
Secondary	478	38.77
Tertiary	592	48.01
Distribution of Occupation		
Trading		
Civil Service	702	56.93
Tailoring	250	20.28
Hair Dressing	105	8.52
Others	94	7.62
	82	6.65
Average Monthly Income		
Less than #30,000	329	26.68
#30,000-#50,000	532	41.15
≥#50,000	372	31.17

Table 1 shows the socio-demographic characteristics of the respondents. The women were aged 20-49 years, giving an age range of 29 years. The mean age was 32.33 ±6.25 SD years, while the modal age was 25 years. The parity ranged from 0 to 8, with 1 being the modal parity. Tertiary education was the highest level attained by most of the women. Trading was the most common occupation (56.9%) and followed by civil service (20.3%). Five hundred and thirty-two (41.15%) respondents earned an average monthly income between₦30,000 to ₦50,000, and 9.8% had health insurance coverage.

Five hundred and ninety-four (48.18%) participants were aware of cervical cancer, while 639 (51.82%) were unaware of the disease. Among the 594 aware of cervical cancer, 283 (47.47%) also knew about cervical screening. The major sources of awareness were hospitals or health professionals (52.5%), social media (33.9%), mass media (18.6%), and friends or family members (15.3%).

Table 2: Table showing the Performance of the Women when asked about symptoms and risk factors of cervical cancer/screening methods

Test of Knowledge on Cervical Cancer	**Below Average Scores; N_1 (%)**	**Above Average Scores; N_2 (%)**	**Total; N = 1233 (%)**
Symptoms of cervical cancer	1044 (84.67)	189 (15.33)	1233 (100)
Risk factors of cervical cancer	1000 (81.10)	233 (18.90)	1233 (100)
Test of knowledge on Screening			
Different screening methods available	1153 (93.51)	80 (6.49)	1233 (100)
Frequency of screening	1163 (94.32)	70 (5.68)	1233 (100)
Screening centres	1134 (91.97)	99 (8.03)	1233 (100)

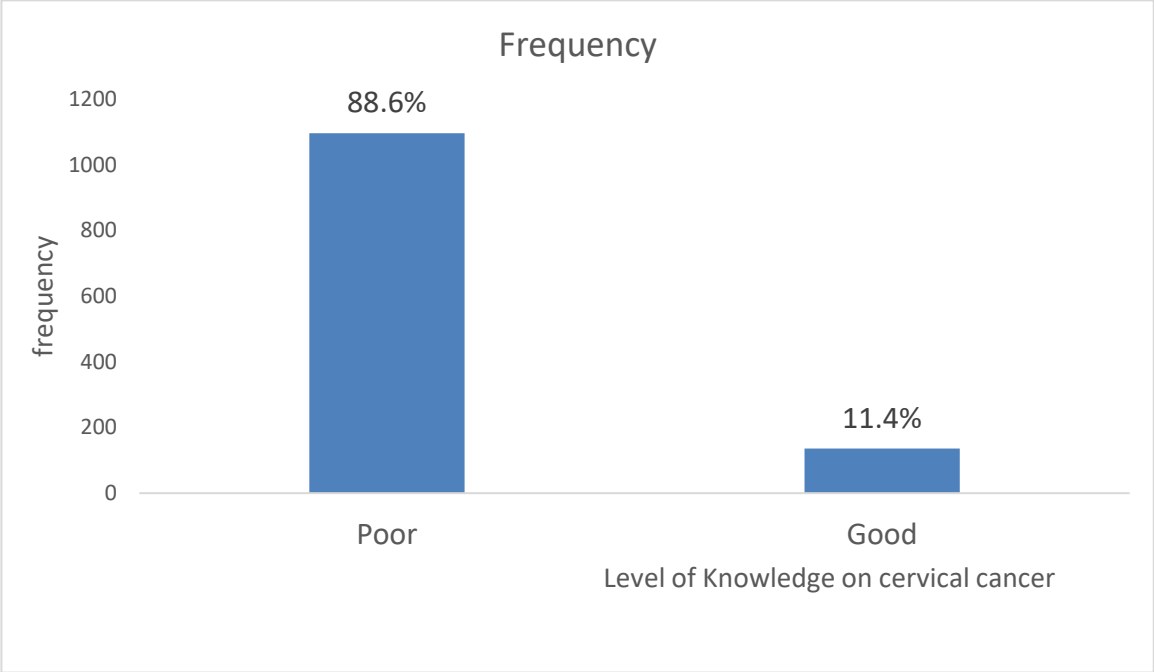

Figure 1a: Level of Knowledge of cervical cancer

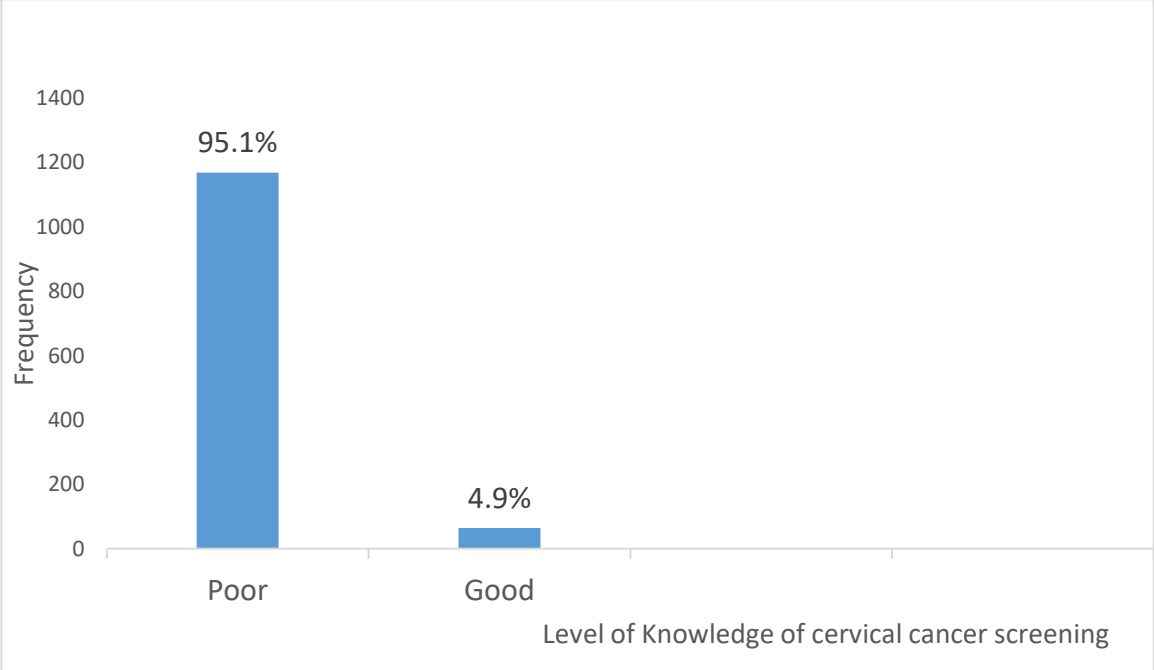

Figure 1b: Bar Chart of Level of Knowledge about Cervical Cancer Screening.

Table 2 shows the knowledge of the women about symptoms and risk factors of cervical cancer, and knowledge about the screening methods and screening centres. Over 80% of them had poor or no knowledge of symptoms or risk factors of cervical cancer. Figures 1a and 1b are bar charts showing the summaries of level of knowledge of cervical cancer and pre-cancer screening respectively.

Among the 594 women who were aware of cervical cancer, 141 (23.74%) had good knowledge of the disease, others either had poor or no knowledge of the disease. Of the 278women who were aware of the cervical cancer screening, 59 (21.22%) had good knowledge, while the remaining 219 (78.78%) either had poor or no knowledge of the disease.

Table 3: Level of Uptake of Cervical Pre-cancer Screening, and Screening Type Undertaken

Variables	**Frequency (N = 1233)**	**Percentage (100%)**
Uptake of Cervical cancer Screening		
Never Screened	1153	93.51
Screened once	71	5.76
Screened Twice	9	0.73
Up-to Date Screening Status	**Frequency (N_1 = 80)**	**Percentage (100%)**
Up-to Date	60	75
Overdue	20	25
Types of Screening undergone	**Frequency (N_1 = 80)**	**Percentage (100%)**
VIA	22	27.5
Pap smear	50	62.5
HPV testing	8	10
Reasons for not being screened	**Frequency (N_2 = 1153)**	**Percentage (100%)**
I am unaware of the disease	642	55.68
I am not aware there are screening tests for the disease	261	22.64
I am healthy and cannot have it	141	12.23
No reason	49	4.25
Cost	30	2.60
Other reasons	30	2.60

Table 3 shows the level of uptake of cervical screening, types of screening undertaken and reasons for not being screened. Eighty (6.49%) of the 1233 women analyzed had undergone cervical screening at least once. Among the 80 screened, nine persons (11.25%) had been screened twice, while the remaining 71 women (88.75%) had been screened once. None of the respondents had been screened more than twice, and none expressed commitment to routine screening. The main reason for undergoing screening, particularly Pap smear, was that it was requested by doctors as part of routine investigations when they visited hospital for consultation. Those who underwent VIA had it during medical outreach programs. Among those who had been screened in the past, only 21 (26.5%) had good knowledge of cervical cancer and 39 (48.75%) had good knowledge of the screening.

Lack of awareness of cervical cancer or its screening was the leading reason for not undergoing screening.

Among the 1,153 women who had never been screened, 972 (84.30%) expressed willingness to be screened in the future, while the remaining 181 (15.70%) said they would never subject themselves to screening. Reasons for not subjecting themselves to future screening included being healthy (36.46%), disbelief in the reality of cervical cancer (18.78%), fear of the screening outcome (12.71%), natural/divine protection against cervical cancer (12.15%), disapproval by spouses (6.7%) and no specific reasons (6.7%). However,23.7% of those willing to be screened said they would only undergo the screening if it was free of charge.

Table 4: Association between socio-demographic status and uptake of cervical cancer Screening

Variables	**Screening Uptake**		**Total,** N = 1233 (100%)	**t-test**	**Df**	**P-Value**
	Screened	**Unscreened**				
	N_1 = 80 (6.49%)	**N_2** = 1153 (93.51%)				
Mean Age (± SD) years	38.5 (± 7.87)	31.9 (± 5.92)				
				-9.414	**1231**	**<0.0001**
				Chi-square		
Level of Education						
None	0 (0)	17 (1.38)	17 (1.38)			
Primary	1 (0.08)	145 (11.76)	146 (11.84)			
Secondary	29 (2.35)	449 (36.42)	478 (38.77)			
Tertiary	50 (4.06)	542 (43.96)	592 (48.01)			
				13.16	**3**	**0.0042**
Average Monthly Earning						
< #30000	7 (0.57)	322 (26.12)	329 (26.68)			
#30000-#50000	32 (2.60)	500 (40.55)	532 (43.15)			
≥50000	41 (3.33)	331 (26.85)	372 (30.17)			
				23.1071	**2**	**<.0001**
Religion						
African Religion	0	8 (0.65)	8 (0.65)			
Christianity	48 (3,89)	664 (53.85)	712 (57.75)			
Islam	32 (2.60)	481 (39.01)	513 (41.61)			
				0.6874	**2**	**0.7106**

Table 4 shows the relationship between socio-demographic status of the respondents and uptake of cervical screening. Women of higher socio-economic status were more likely to undergo the screening compared to those of lower status. There were statistically significant associations between age, educational level, income level and uptake of cervical screening respectively. No association was found between religion and uptake of cervical screening.

Table 5: Table showing the relationship between awareness of cervical cancer and willingness to be screened in future/Actual Uptake of Screening

Cervical Cancer Awareness	Unwilling, N_1 = 189 (15.33%)	Willing, N_2 = 1044 (84.67%)	Total, N = 1233 (100%)	Chi-Square	Df	P-Value
Aware	79 (6.41)	515 (41.77)	594 (48.18%)			
Unaware	110 (8.92)	529 (42.90)	639 (51.82%)			
				3.6349	**1**	**0.0565**
	Uptake of Screening					
	Unscreened	**Screened**				
	N_1 = 1153 (93.51%)	**N_2 = 80 (6.49%)**				
Aware	514 (41.69)	80 (6.49)	594 (48.18)			
Unaware	639 (51.82)	0(0)	639 (51.82)			
				92.0391	**1**	**<.0001**

The majority of those with and without prior awareness of cervical cancer expressed willingness to be screened in the future, and there was no statistically significant association between prior awareness and willingness to be screened ($X^2 = 3.6349$, df = 1, P = 0.0565). There was, however, statistically significant association between awareness and actual uptake of screening ($X^2 = 92.0391$, df =1, P < 0.0001.)

Discussion

The study investigated the awareness and knowledge of cervical cancer, the level of cervical screening uptake and the determinants influencing screening among women of reproductive age. The study demonstrated that fewer than half (48%) of the respondents were aware of cervical cancer, and many of those aware of the disease were unaware of its screening tests. The poor awareness of cervical cancer and its screening observed in this study was like findings from other parts of South-West Nigeria. [17-20] The poor awareness observed in this study may be attributed to inadequate information dissemination, particularly through mass media, and to certain extent, by healthcare providers. Although mass media, particularly radio, reach both urban and rural areas of South-west Nigeria they contributed very little as a source of awareness in this study. Furthermore, since this study was hospital-based, it was expected that many of the respondents- being regular users of healthcare facilities, should have heard about the disease at least at one of their visits but that was not the case.

The knowledge of cervical cancer and its screening among the respondents was very low in this study, and was similar to report by Abiodun et al. among rural Nigerian women[17] but much lower than findings by Ehwarieme at al. in a study among secondary school teachers in Egor LGA of Edo State where majority of their respondents had fair to good knowledge of cervical cancer.[14] The lower level of knowledge in this study compared to that of Edo study may be explained by differences in the study population; the Edo study was among teachers who are generally more educated and likely to possess better health knowledge whereas this study included women from diverse socio-economic and

educational backgrounds. The poor knowledge observed could also be due to poor health education on the disease, particularly from healthcare professionals and mass media, as previously discussed.

The cervical screening uptake rate in this study (6.5%) was low but higher than the 3.9% and 0.7% screening rate in previous studies in Ogun State,[17] and an urban slum in Lagos (0.7%),[19] respectively. However, it was lower than 32.7% screening rate reported by Ahmed et al [16] among market women in Sabon-Gari LGA of Kaduna State and 20.9% reported by Bante et al [12] among reproductive age women in Debre Markos town, Northwest, Ethiopia. The difference noticed between this study and the Lagos slum was likely due to differences in the study population. While the study population in this study was made of people of different socio-economic and educational status, the study group in the slum were less educated and less likely to be economically buoyant. The authors of the study in Zaria [16] opined that the high rate they reported in the market might have been due to outreach carried out in the market prior to their survey. In addition to the poor awareness and knowledge, cost of screening might have contributed to the low screening uptake. Many women were not covered by health insurance and based on laboratory survey, the cost of Pap smear in Ogun State was relatively high and unaffordable for most respondents. HPV screening and genotyping were not widely available and even more expensive.

Pap smear was the most common screening method undergone in this study. This was different from the study by Ewharieme et al [14] in Edo State where HPV testing was the most common screening undergone. The reason for the higher choice of Pap smear in this study was because most of the screenings were requested by doctors who specifically requested for Pap smear from the respondents.

Although very few women in this study had undergone cervical screening, the majority of them were up to date in their most recent screening. This was primarily because they had recently undergone screening for the first time,usuallyat doctors' requests shortly before the study. It remains uncertain whether they will maintain regular screening in the future.

Those previously screened underwent the screening based on doctors' request while few had it because it was free during outreaches. These were the same reasons given in a study by Agboola et al [15] among antenatal attendees in Ibadan, Oyo State. Among women who had never been screened, lack of awareness of cervical cancer and its screening was the main reason given for non-participation. Lack of awareness was also the main reason for not being screened in the study by Olubodun.[19] This points to the poor awareness and knowledge of cervical cancer and its screening in Southwest Nigeria where the two studies took place. However, being healthy was the most common reason reported in a study in Northwest Ethopia [12] unlike in this study where being healthy was third most common reason. Variation in the socio-cultural background and beliefs may account for this disparity.

A high percentage (84.7%) of unscreened women had a positive attitude towards cervical screening, and they expressed willingness to be screened in the future. This was in consonance with the studies by Oluwole et al [16] and Olubodun et al [19]. While some respondents were willing to pay for the screening, a few indicated they would only participate if the screen were provided free of charge.

This study demonstrated a significant association between socio-demographic factors (age, level of education, and monthly income) and cervical screening uptake. This was in consonance with findings by Ehwarieme et al [14]

A close proportion of women aware and those unaware of cervical cancer were willing to undergo cervical screening in the nearest future (41.77% versus 42.90%) and there was no statistically significant difference between prior awareness of cervical cancer and willingness to be screened in the nearest future. The willingness of previously unaware participants to be screened may have resulted from the awareness created during the interview process. There was however asignificant association between awareness of cervical cancer and the actual uptake of cervical screening. This was in consonance with

study by Bante et al [12] where they found that women being informed about cervical cancer by health workers was statistically associated with uptake of cancer screening.

Overall, the awareness and knowledge of cervical cancer and its screening were low among women of reproductive age in this study. The majority of those who were aware of the disease possessed little or no detailed knowledge about it. Higher socio-economic status had a positive impact on cervical screening uptake, and there was a significant association between socio-demographic factors and screening participation. Both women who were aware and those unaware of cervical cancer expressed willingness to be screened, and no significant association was found between cervical cancer awareness and willingness to undergo screening. However, there was a statistically significant association between awareness and actual uptake of screening (P <0.0001). Hence the creation of awareness and health education programs to improve knowledge of cervical cancer through effective information dissemination is likely to enhance cervical screening uptake in the study area.

References

1. Prendiville W, Sankaranarayanan R. Anatomy of the uterine cervix and the transformation zone. In: Colposcopy and Treatment of Cervical Precancer. International Agency for Research on Cancer; 2017. IARC Technical Report, No. 45. Lyon, France
2. World Health Organization. Cervical Cancer. https://www.who.int/health-topics/cervical-cancer#tab=tab_1: Accessed; Mar 23, 2023.
3. Sung H, Ferlay J, Siegel R.L, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries.*CA Cancer J Clin.* 2021:71;209–49. doi:10.3322/caac.21660.
4. World Health organization. Cervical Cancer. Feb 2022. https://www.who.int/news-room/fact-sheets/detail/cervical-cancer Accessed; 23 Mar 2023
5. ICO/IARC Information Centre on HPV and Cancer Nigeria. Human Papillomavirus and Related Cancers, Fact Sheet 2023.
6. WHO guideline for screening and treatment of cervical pre-cancer lesions for cervical cancer prevention, second edition. Geneva: World Health Organization; 2021. Licence: CC BY-NC-SA 3.0 IGO.
7. Lemp JM; De Neve J; Bussmann H; Chen S; Manne-Goehler J, Theilmann M, et al Lifetime. Prevalence of Cervical Cancer Screening in 55 Low- and Middle-Income Countries. *JAMA*. 2020;324(15):1532-1542. doi:10.1001/jama.2020.16244
8. Donatus L, Nina FK, Sama DJ, Nkfusai CN, Bede F, Shirinde J, et al. Assessing the uptake of cervical cancer screening among women aged 25-65 years in Kumbo West Health District, Cameroon. *Pan African Medical Journal.* 2019; 33:106. doi:10.11604/pamj.2019.33.106.16975
9. Srinath A, van Merode F, Rao SV, Pavlova M. Barriers to cervical cancer and breast cancer screening uptake in low- and middle-income countries: a systematic review. *Health Policy and Planning,* 2023;11;38(4):509-527. doi: 10.1093/heapol/czac104.
10. Bruni L, Serrano B, Roura E, Alemany L, Cowan M, Herrero R,Cervical cancer screening programmes and age-specific coverage estimates for 202 countries and territories worldwide: a review and synthetic analysis. *Lancet Glob Health* 2022; 10: e1115–27

11. Yimer NB, Mohammed MA, Solomon K, Tadese M, Grutzmacher S, Meikena HK, Cervical cancer screening uptake in Sub-Saharan Africa: a systematic review and meta-analysis. *Public Health.* 2021; 195:105-111. doi: 10.1016/j.puhe.2021.04.014.
12. Bante SA, Getie SA, Getu AA, Mulatu K, Fenta SL. Uptake of pre-cervical cancer screening and associated factors among reproductive age women in Debre Markos town, Northwest Ethiopia 2017. *BMC Public Health. 2019;*19(1102) https://doi.org/10.1186/s12889-019-7398-5
13. Ngwu CN, Iwuagwu AO, Ebimgbo SO, Igboeli EE, Eyang BO, Ogar LE. Perception and Practice of Cervical Cancer Screening Services and the Role of Social Workers in Facilitating Screening Uptake in Enugu State, Nigeria. *Asian Pac J Cancer Prev,2022;* 23 (7), 2271-2277
14. Ewharieme T., Emina A. Uptake of Cervical Cancer Screening Among Female Teachers in Public Secondary Schools in Egor Local Government Area of Edo State. *The Niger Health J.* 2022:22(2);165-189
15. Agboola AMD, Bello OO. The determinants of knowledge of cervical cancer, attitude towards screening and practice of cervical cancer prevention amongst antenatal attendees in Ibadan, South-West Nigeria. *ecancer.*2021;15:1225
16. Ahmed SA, Sabitu K, Idris SH, Ahmed R. Knowledge, attitude and practice of cervical cancer screening among market women in Zaria, Nigeria. *Niger Med J*. 2013;54:316-9
17. Abiodun OA, Fatungase OK, Olu-Abiodun OO. Knowledge, perception and predictors of uptake of cervical screening among rural Nigerian women. *J Public Health Epidemiol.* 2014;6(3):119-21
18. Oluwole EO, Mohammed AS, Akinyinka M.R, Salako O. Cervical Cancer Awareness and Screening Uptake among Rural Women in Lagos, Nigeria. *Journal of Community Medicine and Primary Health Care.* 2017; 29 (1) 81-88
19. Olubodun T, Odukoya OO, Balogun MR. Knowledge, attitude and practice of cervical cancer prevention, among women residing in an urban slum in Lagos, South West, Nigeria, *Pan African Medical Journal.* 2019; 32:130. doi:10.11604/pamj.2019.32.130.14432
20. Amu EO, Ndugba SC, Olatona FA. Knowledge of Cervical Cancer and Attitude to Cervical Cancer Screening among Women in Somolu Local Government Area, Lagos, Nigeria. *Journal of Community Medicine and Primary Health Care.* 2019; 31 (1) 76- 85