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Awareness, Acceptability and Uptake of Cervical Cancer Screening among Pregnant Women in Ekiti State, Nigeria.

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ABSTRACT

Background: Cervical cancer is a significant global public health concern, particularly in developing countries. Antenatal care visits provide a unique opportunity to educate and screen women for cervical cancer. This study was undertaken to explore the awareness, acceptability, and update of cervical cancer screening among antenatal attendees.

Methods: This study was a descriptive cross-sectional survey of 422 pregnant women attending antenatal clinics at the Ekiti State University Teaching Hospital using a self-administered structured questionnaire. Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 26 software.

Results: Of the 410 respondents who returned completed questionnaires, 61.7% had heard about cervical cancer, and only 40.3% reported awareness of the screening modalities. Healthcare providers were the primary source of information about screening methods in 59.0%. Approximately half agreed that information about cervical cancer screening during antenatal care would be beneficial. 90.5% had never undergone cervical cancer screening. Multivariate analysis shows that 32.4% of our clients who were aware of the cervical screening modalities before the current pregnancy had never been screened; OR 0.578, CI (0.036-9.321), p-value 0.699. 3.20% and 4.40.0% were aware and had done cervical cancer screening once and twice respectively before the current pregnancy; OR 1.444, CI (0.080-26.230); p-value 0.804 and OR 4.667, CI (0.223-97.497); p-value 0.321 respectively. There was no statistical relationship between awareness of cervical cancer screening methods and uptake of cervical cancer screening.

Conclusions: The study highlights a concerning gap between awareness and practice of cervical cancer screening among pregnant women in Ekiti State, Nigeria.

Key words: Cervical cancer, Screening, Awareness, Acceptability, Uptake.

1. INTRODUCTION

Cervical cancer remains a significant global health concern, affecting millions of women each year. According to the World Health Organization (WHO), cervical cancer is the fourth most common cancer among women worldwide, with an estimated 604,000 new cases and 342,000 deaths in 2020[1]. In Nigeria, cervical cancer is the second most common cancer and second to breast cancer among its female population.[2] Over 36 million women over 15 years old in Nigeria are at risk of developing cervical cancer. There are 12,075 cases diagnosed annually, with 8030 deaths translating to 33 new cervical cancer cases and 22 deaths from the disease daily.[3]

Cervical cancer is the growth of abnormal cells in the lining of the cervix. The primary cause of cervical cancer is infection with the oncogenic Human papillomavirus (HPV). More than 200 serotypes of human papillomavirus have been identified.[4] Infection with HPV is widespread. while in most cases, infection with HPV resolves spontaneously, some can initiate the transformation that will result to cervical cancer if left untreated. Cervical cancer is predominantly associated with persistent infection with the high-risk serotypes 16 and 18.

Cervical cancer is largely preventable and curable when detected early through regular screening and timely intervention. Antenatal care, a crucial component of maternal and child health services, provides a unique opportunity to integrate cervical cancer screening and education, potentially enhancing awareness and participation in screening programs among women during their reproductive years.[5] Integrating cervical cancer screening into antenatal care services can capitalize on the existing healthcare infrastructure and engagement of women with healthcare providers. This integration strengthens the potential for early detection and management of cervical abnormalities. Most cervical abnormalities in pregnancy are detected at the antenatal care service in developed countries where such screening is available.[6]

Cervical screening methods such as conventional cytology (PAP smear), liquid-based cytology (LBC), Human papillomavirus (HPV) testing, and visual inspection on acetic acid (VIA) can detect cervical precancerous lesions in apparently healthy, asymptomatic women. However, studies have reported that the awareness and uptake of cervical cancer screening services have remained poor in developing countries such as Nigeria despite their availability.[7,8]

The knowledge of cervical cancer and the acceptability of its screening methods among pregnant women is an underexplored area in Nigeria.[6] Limited awareness about cervical cancer and its screening methods among pregnant women is a significant barrier to early detection and intervention.[9] In Nigeria, only about 10% of women have ever had cervical cancer screening in their lifetime.[9] Several barriers contribute to the suboptimal acceptability of cervical cancer screening among pregnant women. Fear of harm to the fetus, concerns about the invasiveness of screening procedures, and cultural factors influencing healthcare-seeking behavior are among the prominent barriers.[10] Identifying and addressing these barriers is critical for developing targeted interventions that promote the uptake of cervical cancer screening during pregnancy.

Cultural beliefs and societal norms can significantly impact the acceptability of cervical cancer screening among women.[6] Stigmatization of discussions related to reproductive health, misconceptions about the causes of cervical cancer, and cultural taboos surrounding gynecological examinations may deter pregnant women from actively seeking screening. Culturally sensitive approaches are necessary to navigate these challenges and promote a positive attitude towards cervical cancer prevention[8].

Healthcare providers play a crucial role in shaping the perceptions and choices of pregnant women regarding cervical cancer screening. Understanding the perspectives, knowledge, and attitudes of healthcare professionals toward recommending and conducting cervical cancer screening during pregnancy is essential. Adequate training and education for healthcare providers can enhance their ability to communicate effectively with pregnant patients, addressing concerns and emphasizing the importance of timely screening.

Developing and implementing interventions that address the multifaceted challenges surrounding cervical cancer screening during pregnancy is crucial. Educational campaigns, community outreach programs, and integration of cervical cancer screening into routine antenatal care are potential strategies to enhance awareness and acceptability. Additionally, leveraging technology, such as mobile health applications, can facilitate the dissemination of accurate information and provide a platform for women to engage in informed decision-making.

Pregnancy is a physiological condition that causes most women of reproductive age group to present for health care even in low- and middle-income countries. The antenatal care service thus provides a unique reproductive health service opportunity for women to have contact with the health system. Such opportunity can be maximized to utilize cervical screening services during pregnancy. This study aims to explore the awareness and perspectives of antenatal attendees in a tertiary health facility in Nigeria on cervical cancer screening, shedding light on the barriers and facilitators that influence their engagement with preventive measures and to determine the uptake of cervical cancer screening among the respondents.

2. METHODOLOGY

2.1 Study Design

A descriptive cross-sectional survey was conducted to assess the awareness, acceptability and uptake of antenatal attendees at Ekiti State University Teaching Hospital to cervical cancer screening.

2.2 Study Setting

The study was carried out between the 1st of June and 30th of November, 2023 at the antenatal clinic of the Ekiti State University Teaching Hospital, Ado Ekiti, Ekiti state. Ekiti State University Teaching Hospital is a tertiary institution situated in Ado Ekiti. It serves as the referral center for primary, secondary, and private health care centers in Ekiti State and part of Ondo, Kwara, Kogi, and Osun states. About 1000 new clients are registered for antenatal care annually.[11] The antenatal clinic runs every day of the week except weekends.

2.3 Study Population

Antenatal attendees at Ekiti State University Teaching Hospital

2.4 Sampling Technique

The respondents in this study were recruited using a simple random sampling technique. The target population was antenatal attendees. Each pregnant woman was assigned a unique numerical identification. Random numbers were generated using a computer-based random generator. Based on the number generated, 422 pregnant women were selected from the population to participate in the study.

2.5 Sample Size Calculation

The Sample size was calculated using the formula: n=Z2.p(1-p) E2

Where: n =sample size

Z= Z score corresponding to confidence level

p = estimated proportion of the population

E= margin of error

Assuming p= 0.5(maximum sample size for unknown population), aiming at a 95% confidence level and a 5% margin of error: Z= 1.96

P=0.5

E=0.05

n = (1.96)2 x0.5(1-0.5)

(0.05)2

n ≈384

A non-response rate of 10% (+38) was anticipated; therefore, the sample size was calculated to be 422.

2.6 Instrument for Data Collection

Self-administered structured questionnaires developed through

an extensive literature search were used for data collection for this study. The questionnaire was pretested to avoid possible ambiguity by administering it to 50 randomly selected antenatal clinic attendees at the Ekiti State University Teaching Hospital a month preceding the commencement of the study. The coefficient of Cronbach's Alpha of 0.82 was obtained, which is considered adequate. The questionnaire had four sections which included:

Section A; Sociodemographic factors: Elicited pertinent information about participants' demographic characteristics (age, education, occupation, number of previous pregnancies).

Section B: Awareness of cervical cancer and screening: Assessed the knowledge of cervical cancer and its risk factors. Awareness of cervical cancer screening methods, types of screening methods, and sources of information on cervical cancer.

Section C: Awareness during antenatal clinic: Assessed awareness in antenatal clinic on a 5 -point modified Likert Scale ranging from strongly agree, agree, neutral, disagree, and strongly disagree. During analysis, the responses for strongly agree and agree were combined as agreed, and strongly disagree and disagreed were combined as disagree.

Section D: Previous experience with cervical cancer screening: Participants were assessed on the number of times they have undergone cervical cancer screening, their level of satisfaction with previous cervical cancer screening, and reasons for not yet screened.

2.7 Data Collection

Written and verbal consent was obtained from the respondents. An information sheet that contained detailed information about the research was administered, after which consent was obtained. Confidentiality was assured, as no identifying data was collected, and participation was entirely voluntary. The printed questionnaires were distributed among pregnant women at every clinic visit. The filled questionnaires were collected on the same day.

2.8 Data Analysis

Analysis was done using IBM-SPSS version 26. Findings were presented using descriptive statistics such as mean, frequency, and percentages. Test of significance was done using chi-square with a confidence interval of 95% and a level of significance at the p-value of 0.05. Multivariate analysis was used to determine the association between variables.

2.9 Ethical Consideration

Ethical approval for the study conveyed with protocol number EKSUTH/A67/2023/09/010 was obtained from the Ethics and Research Committee of the Ekiti State University Teaching Hospital, Ado Ekiti.

2.10 Data Availability

The data will be made available upon request from the corresponding author with the permission of the Research and Ethics Committee of the Ekiti State University Teaching Hospital.

3. RESULT

A total of 410 pregnant women completed the survey questionnaires, giving a response rate of 97.1%. Table 1 shows the sociodemographic parameters of the respondents. The mean age of the respondents was 33.15 + 1.07 years and the majority were within the age range of 25-34 years. Sixty percent were educated up to postgraduate level and 70.3% were employed. All the respondents had previously been pregnant five or more times.

Table 1: Sociodemographic Characteristics of Respondents

Variables	Frequency (%)
Age	
18-24	37(9.0)
25-34	217(52.9)
35-44	131(32.0)
45-54	25(6.1)
Total	410(100)
Education	
No Formal Education	7(1.7)
Primary	4(1.0)
Secondary	45(11.0)
Undergraduate	108(26.3)
Post Graduate	246(60.0)
Total	410(100)
Occupation	
Student	42(10.2)
Unemployed	80(19.5)
Self-Employed	97(23.6)
Employed (non-medical)	136(33.2)
Healthcare Professionals	55(13.5)
Total	410(100)
Number of previous pregnancy	
1	149(36.4)
2	142(34.6)
3	80(19.5)
4	25(6.1)
5 and more	14(3.4)
Total	410(100)

More than three out of every five respondents (61.7%) have heard about cervical cancer (Table 2). Equally, 55.1% were knowledgeable about the risk factors. Approximately three-fifths of the respondents (59.7%) were not aware of the types of cervical cancer screening methods. Only 27.3% of the respondents knew about Pap smear as a screening modality. The majority (78.2%) of the respondents, knew that women above 21 years should be screened. 59.5% received information about screening from their healthcare providers.

Table 3 shows that 60% of the participants agreed to have received information about cervical cancer during the antenatal clinic and 67.5% agreed that the information received was helpful. The majority (90.5%) of the respondents have never been screened for cervical cancer (Table 4). Out of the only 9.5% who have been screened at least once, 41.0% agreed that they were satisfied with the screening procedure. For those who have never been screened, lack of awareness was the main reason for 43.7% of the respondents.

Table 5 shows the result of the multivariate analysis of the awareness of cervical cancer screening methods and prior uptake of cervical cancer screening among pregnant women at Ekiti State Teaching Hospital. This table reveals that 32.4% of our clients who were aware of the cervical screening modalities before the current pregnancy had never undertaken cervical cancer screening. OR 0.578, CI (0.036-9.321), p-value 0.699, while 3.20% and 4.40.0% with awareness had done cervical cancer screening once and more than once respectively before the current pregnancy. OR 1.444, CI (0.080-26.230); p-value 0.804 and OR 4.667, CI (0.223-97.497); p-value 0.321 respectively. However, this was not statistically significant. Overall, the results showed a low awareness and

Table 2: Awareness of Cervical Cancer and Screening

Variables	Frequency
Heard of cervical cancer ?	
Yes	253(61.7)
No	157(38.3)
Total	410(100)
Knowledge of risk factors?	
Yes	226(55.1)
No	184(44.9)
Total	410(100)
Aware of cervical cancer screening methods?	
Yes	165(40.3)
No	245(59.7)
Total	410(100)
Types of screening methods?	
Pap Smear	120(29.3)
HPV DNA	17(4.1)
VIA	16(3.9)
VILI	10(2.4)
VIA, Pap Smear, HPV DNA	3(0.7)
Pap Smear, VILI	6(1.5)
Unsure	238(58.1)
Total	410(100)
Who should be screened?	
Women above 21 Years	322(78.5)
Pregnant Women only	40(9.8)
Only Women with Risk Factors	10(2.4)
Only Women with Symptoms	38(9.3)
Total	410(100)
Information received about the cervical cancer screening method?	
Healthcare Provider	244(59.5)
Internet & social media	70(17.1)
Family & Friends	36(8.8)
Health Educational Campaigns	43(10.5)
Others (Schools & Churches)	17(4.1)
Total	410(100)

Table 3: Awareness During Antenatal Care

Items	Frequency (%)
Received appropriate information during antenatal care	
Strongly Agree	98(23.9)
Agree	148(36.1)
Neutral	46(11.2)
Disagree	50(12.2)
Strongly Disagree	68(16.6)
Total	410(100)
Information received during antenatal care was Helpful	
Strongly Agree	132(32.2)
Agree	145(35.3)
Neutral	48(11.7)
Disagree	31(7.6)
Strongly Disagree	54(13.2)
Total	410(100)
Antenatal care providers discussed cervical cancer screening in a clear manner	
Strongly Agree	83(20.2)
Agree	166(40.5)
Neutral	47911.5)
Disagree	53(12.9)
Strongly Disagree	61(14.9)
Total	410(100)

poor uptake of cervical cancer screening modalities among antenatal attendees

4. DISCUSSION

The study assessed the awareness and acceptability of cervical cancer screening among pregnant women attending antenatal clinic at the Ekiti State University Teaching Hospital, Ekiti State Nigeria. The mean age of the respondents was 33.15 + 1.07 years. The majority were within the age range 25-34 years, educated up to postgraduate level, and self-employed. The age bracket reflects a reproductive age group. Most of the women were multiparous and 3.4% were grand multiparous. This finding is in tandem with a study by Onyeacho et al among Northern women where the majority were also multiparous with 9.4% being grand multiparous.[12]

Findings from this study showed that the majority of the respondents are aware of cervical cancer and its risk factors. This finding is similar to the findings by Onyeacho et al where a high level of awareness of cervical cancer was found among antenatal attendees in a tertiary hospital in Northwest Nigeria but in contrast to the study by Jomusu et al among pregnant women attending antenatal clinic at a tertiary hospital in North Eastern Nigeria which reported poor knowledge of cervical cancer.[13] The high level of awareness revealed in this study may be because the population studied is highly educated with the majority attaining education up to postgraduate level.

The study revealed that more than half of the respondents were not aware of the types of cervical cancer screening methods. Only 27.3% knew about pap smear. Although a pap smear is a common screening test for cervical cancer, it was not known to the majority of respondents. Even visual inspection with acetic acid and visual inspection with Lugol's iodine which is popular in low-middle-income countries like Nigeria were known by just 3.9% and 2.4% respectively. This finding is in tandem with the study by Ndikom and Ofi among antenatal women in selected health facilities in Ibadan where it was found that the level of awareness of cervical cancer screening among these women was low.[14] In contrast, a high level of awareness of cervical cancer screening was reported by Dozie et al in Owerri among antenatal women (68.8%).[7] The reason stated for the higher level of awareness among respondents was that the health facility where the study was done is surrounded by higher institutions. This may have helped in educating the pregnant women.[15] Cervical cancer screening is a major pillar in preventing cervical cancer. Increasing its awareness in the female population will go a long way to detecting the premalignant phase early and the treatment offered to prevent women from coming down with cervical cancer.

Similar to previous studies, healthcare providers were the main source of information about cervical screening methods followed by the internet and social media.[14] This is comparable to a study by Mbaluka et al in Kenya[15] where healthcare providers and media were reported to be the major source of information. The antenatal clinic provides a unique opportunity to educate and screen women for cervical cancer. Health workers should include cervical cancer awareness in health talks during antenatal clinics and also provide screening services for these women.

Despite the high level of awareness of cervical cancer and its risk factors, only about one-tenth of the women have ever undergone cervical cancer screening. The majority (90.5%) have never been screened before. This is corroborated by the study by Omowhara et al where out of the 243 women studied in Delta state, only 4.3% [16] have been screened for cervical cancer. The finding of low up-

Table 5: Multivariate Analysis of Awareness of Cervical Cancer and Prior Uptake of Cervical Cancer Screening Among the Respondents

Prior uptake of cervical cancer screening	Awareness of Cervical Cancer Screening Yes	No	Odds Ratio (95% Confidence Interval)	p-Value
Never	133(32.4%)	230(56.1%)	0.578 (0.036-9.321)	0.699
Once	13(3.2%)	9(2.2%)	1.444 (0.080-26.230)	0.804
More than Once	18(4.4%)	7(1.7%)	4.667 (0.223-97.497)	0.321

take of cervical cancer screening in this study could be a result of a low level of awareness of cervical screening methods (40.3%) as the major reason identified for not yet screened is lack of awareness. Most of the women said they have not been screened for cervical cancer because they are not aware that there are screening methods for cervical cancer. Previous studies have observed that knowledge of cervical cancer screening was positively associated with the uptake of cervical cancer screening among respondents[13,17]. Hence, targeted efforts should be made to increase awareness and uptake of cervical cancer screening among pregnant women. The antenatal clinic provides a golden opportunity to educate women on cervical cancer.

Other reasons stated in this study for low uptake include the fact that it is not routinely recommended during the antenatal clinic, fear of the procedure, negligence and financial constraints as the screening is not free. The study by Ndikom and Ofi also identified financial constraints as a barrier to the utilization of cervical cancer screening services.[14]

Of those who have undergone cervical cancer screening in the past, very few were satisfied (7.6%) with the procedure,4.4% were dissatisfied and the majority were undecided about their experience. There is a need for healthcare providers to improve service delivery to ensure women who come for cervical cancer screening have a better experience. They should be made comfortable and privacy should be maintained.

4.1 Conclusion

Awareness of cervical cancer and its risk factors is high among the respondents but the awareness of cervical cancer screening methods and uptake is low. There is a need to bridge the gap between awareness of cervical cancer and its risk factors and awareness of cervical cancer screening methods and uptake. The poor uptake noted in this study could be improved by including health talks on cervical cancer screening methods when educating pregnant women at the antenatal clinic and also providing opportunities for pregnant women to be screened during antenatal clinic visits.

Table 4: Previous Experience with Cervical Cancer Screening

Items	Frequency
Have you ever undergone cervical cancer screening Before	
Never	371(90.5)
Once	22(5.4)
More than once	17(4.1)
Total	410(100)
Level of satisfaction with previous cervical cancer screening	
Very Satisfied	16(41.0)
Satisfied	15(38.5)
Neutral	2(5.1)
Dissatisfied	3(7.7)
Very Dissatisfied	3(7.7)
Total	39(100)
Reasons for yet-to-be-screened	
Lack of Awareness	162(43.7)
Fear of Procedure	51(13.7)
Not Recommended	140(37.7)
Cost/Financial Constraint	16(4.3)
Negligence	2(0.5)
Total	371(100)

4.2. Recommendation

We recommend that cervical cancer screening education and services should be integrated into routine antenatal care visits to increase accessibility and uptake among pregnant women.

Conflicts of Interest

The authors declare no conflicts of interest

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Ojo F.O: Data curation, Formal analysis, Investigation, Methodology, Writing - review & editing

REFERENCE

1. Bhatla N, Aoki D, Sharma DN, Sankaranarayanan R. Cancer of the cervix uteri: 2021 update. Intl J Gynecology & Obste [Internet]. 2021 Oct [cited 2024 Apr 21];155(S1):28–44. Available from: https://obgyn.onlinelibrary.wiley.com/doi/10.1002/ijgo.13865

2. Ilesanmi RE, Kehinde DR. Pattern of utilization of cervical cancer screening services among female sex workers in some selected brothels in abuja, nigeria. Asia-Pacific Journal of Oncology Nursing [Internet]. 2018 Oct [cited 2024 Apr 21];5(4):415–20. Available from: https://linkinghub.elsevier.com/retrieve/pii/S2347562521003115

3. Lawal QO, Lawal IK, Carter CS, Khan S. Cervical cancer burden in nigeria: review of current situation. Gynecol Reprod Health [Internet]. 2023 Feb 28 [cited 2024 Apr 21];7(1). Available from: https://www.scivisionpub.com/pdfs/cervical-cancer-burden-in-nigeria-review-of-current-situation-2608.pdf

4. Farahmand M, Moghoofei M, Dorost A, Abbasi S, Monavari SH, Kiani SJ, et al. Prevalence and genotype distribution of genital human papillomavirus infection in female sex workers in the world: a systematic review and meta-analysis. BMC Public Health [Internet]. 2020 Dec [cited 2024 Apr 21];20(1):1455. Available from: https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-020-09570-z

5. McDonald SD, Faught W, Gruslin A. Cervical cancer during pregnancy. Journal of Obstetrics and Gynaecology Canada

[Internet]. 2002 Jun [cited 2024 Apr 21];24(6):491–8. Available from: S1701216316310970

6. Agboola AM, Bello OO. The determinants of knowledge of cervical cancer, attitude towards screening and practice of cervical cancer prevention amongst antenatal attendees in Ibadan, Southwest Nigeria. ecancer [Internet]. 2021 May 5 [cited 2024 Apr 21];15. Available from: https://ecancer.org/en/journal/article/1225-the-determinants-of-knowledge-of-cervical-cancer-attitude-towards-screening-and-practice-of-cervical-cancer-prevention-amongst-antenatal-attendees-in-ibadan-southwest-nigeria

7. Dozie UW, Elebari BL, Nwaokoro CJ, Iwuoha GN, Emerole CO, Akawi AJ, et al. Knowledge, attitude and perception on cervical cancer screening among women attending antenatal clinic in Owerri west L.G.A, South-Eastern Nigeria: A cross-sectional study. Cancer Treatment and Research Communications [Internet]. 2021 [cited 2024 Apr 21];28:100392.Available from: https://linkinghub.elsevier.com/retrieve/pii/S2468294221000903

8. Gutusa F, Roets L. Early cervical cancer screening: The influence of culture and religion. African Journal of Primary Health Care & Family Medicine [Internet]. 2023 Jan 25 [cited 2024 Apr 21];15(1). Available from: http://www.phcfm.org/index.php/PHCFM/article/view/3776

9. Ingwu J. Knowledge and screening practices of cervical cancer among pregnant women attending antenatal clinic in tertiary hospitals in enugu, south-eastern nigeria. JCTI [Internet]. 2016 Jan 10 [cited 2024 Apr 21];4(2):1–9. Available from: https://www.journaljcti.com/index.php/JCTI/article/view/19266

10. Petersen Z, Jaca A, Ginindza TG, Maseko G, Takatshana S, Ndlovu P, et al. Barriers to uptake of cervical cancer screening services in low-and-middle-income countries: a systematic review. BMC Women's Health [Internet]. 2022 Dec 2 [cited 2024 Apr 21];22(1):486. Available from: https://bmcwomenshealth.biomedcentral.com/articles/10.1186/s12905-022-02043-y

11. Ade-Ojo IP, Babatola AO, Ojo TO, Ogundare EO, Agbesanwa T, Adeniyi AT, et al. Knowledge and willingness to utilize hepatitis b preventive measures among pregnant women in ado-ekiti, southwest, nigeria. Sadiq F, editor. Interdisciplinary Perspectives on Infectious Diseases [Internet]. 2023 Nov 16 [cited 2024 Apr 21];2023:1–10. Available from: https://www.hindawi.com/journals/ipid/2023/9168038/

12. Onyeacho D, Afolabi Korede Koledade K, Oguntayo O. Awareness and acceptance of cervical cancer screening in pregnancy among antenatal clinic attendees in a tertiary hospital in northwest Nigeria. 2022 Dec 26 [cited 2024 Apr 21]; Available from: https://zenodo.org/record/7482712

13. Jomusu CA, Noel NB, Abubakar U, Bakari MA, Ameen HA. Knowledge, perception, and uptake of cervical cancer screening among women attending antenatal clinic at a tertiary hospital in Northeastern Nigeria. Int J Reprod Contracept Obstet Gynecol [Internet]. 2024 Feb 27 [cited 2024 Apr 21];13(3):528–34. Available from: https://www.ijrcog.org/index.php/ijrcog/article/view/13842

14. 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 [Internet]. 2012 Dec [cited 2024 Apr 21];9(1):11. Available from: https://reproductive-health-journal.biomedcentral.com/articles/10.1186/1742-4755-9-11

15. Mbaluka JHM, Ndeleva DrBM, Rucha DrKK. Awareness and knowledge on cervical cancer screening services among women aged 30-49 years in kitui west sub-county. JHMN [Internet]. 2019 Jul 2 [cited 2024 Apr 21];4(3):21–30. Available from: https://www.iprjb.org/journals/index.php/JHMN/article/view/926

16. Omowhara OB, Ameh S, Banjo AA. Cervical cancer screening awareness and uptake among underscreened women in a rural Nigerian community. The Nigerian Health Journal. 2022 Dec;22(4):428–32.

17. Idowu A, Olowookere SA, Fagbemi AT, Ogunlaja OA. Determinants of cervical cancer screening uptake among women in ilorin, north central nigeria: a community-based study. Journal of Cancer Epidemiology [Internet]. 2016 [cited 2024 Apr 21];2016:1–8. Available from: http://www.hindawi.com/journals/jce/2016/6469240/u