

# PERCEPTION AND ACCEPTABILITY OF INTEGRATION OF CERVICAL CANCER SCREENING INTO ANTENATAL AND POSTNATAL SERVICES IN A TERTIARY HOSPITAL IN NIGERIA

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## ABSTRACT

**Background:** Cervical cancer is preventable, but women in developing countries present in advanced stages of the disease, thus resulting in limited treatment options and high mortality rates. Routine maternal healthcare during pregnancy or puerperium presents a unique opportunity for its prevention, counselling and screening.

**Aim:** To assess the acceptability and perception of integration of cervical cancer screening into routine antenatal (ANC) and postnatal care (PNC) services among pregnant and postpartum women.

**Methodology:** This was a questionnaire-based cross-sectional study conducted among 220 consenting women among the ANC and PNC attendees at the University College Hospital, Ibadan. Information on socio-demographic characteristics, perception of routine screening in maternal health, acceptability; and the willingness to undergo screening test were obtained. Data was analyzed using SPSS version 26 and level of significance was  $p < 0.05$ .

**Result:** Majority were in the age range of 30-34 years. Only 11.4% and 4.5% of the participants had ever done a pap smear and HPV test respectively. About half (50.9%) of the women reported that they would not be willing to undergo screening during pregnancy with the commonest reason being fear of harm to the pregnancy. Over half (64.1%) of the participants were willing to have screening during the post-natal visit, while 58.6% of the participants wanted the screening to be part of the routine services offered at the ANC or PNC. Majority (69.5%) were willing to continue screening outside of pregnancy.

**Conclusion:** The practice of routine cervical cancer screening is low among women in developing countries. The ANC or PNC provides an opportunity for screening, early detection and prevention of cervical cancer.

**Keywords:** Cervical cancer screening integration, Cervical screening antenatal, Cervical screening postnatal, Cervical screening and pregnancy, opportunistic cervical screen

## INTRODUCTION

Carcinoma of the cervix uteri is a malignant disease of the cervix and the second commonest cancer of the female worldwide after breast cancer.<sup>1</sup> Globally, about 528,000 new cases of cervical cancer are diagnosed, 266,000 deaths occur annually and about 85% of these new cases occur in developing countries.<sup>1,2,3</sup> In Nigeria, cervical cancer is the commonest cancer of the female genital tract and the leading cause of cancer death.<sup>4,5</sup> It accounts for 62.7% of all malignancies seen at the University College Hospital, Ibadan.<sup>6</sup>

It is estimated that about 3% of women with cervical cancer were either pregnant or in the postpartum

period at the time of diagnosis. Half of these cases are diagnosed prenatally, and others were diagnosed within 12 months of delivery.<sup>7</sup> Cervical cancer is not an uncommon malignancy in pregnancy, with an estimated incidence of 3.3–26 cases per 100,000 livebirths.<sup>8</sup> Current evidence indicates that the chance that pregnant women will be diagnosed with cervical cancer while it is in its initial stages is three times greater than the chance among controls. This is due to vaginal inspections, screening for infections and cervical cytological tests conducted among women in countries where these examinations are part of routine prenatal care.<sup>9</sup> It is often first suspected when a screening test for the disease is abnormal. The performance

characteristics of the Papanicolaou test do not appear to differ significantly between pregnant and non-pregnant women. Overall, the rate of significant cytological abnormalities among pregnant women has been reported to be 5–8% and is similar to that of the non-pregnant population.<sup>10</sup> Cervical cancer screening in pregnancy appears to be safe and well tolerated as no major side effects were reported in previous studies.<sup>11</sup> This preventable cancer has a long premalignant stage during which screening can be done; and any precancerous lesions identified can be adequately treated to prevent progression to the invasive cancer stage.<sup>12,13</sup>

Conventional cytology commonly referred to as Papanicolaou smear (Pap smear) is a simple and cost-effective technique for early diagnosis of cervical cancer and has been found to be a safe screening method which can be done in pregnancy<sup>11</sup> by opportunistic screens. It will not only screen for cervical abnormality but also identify infections that if left untreated, may be harmful to both mother and fetus. It creates an opportunity to counsel and introduce routine cervical screening to pregnant women especially first-time mothers and women who have never heard of or had cervical screening tests. The effectiveness of opportunistic screen has been found to be equivalent to organized screening programs.<sup>14</sup> Cervical cancer screening test in pregnancy or postpartum provides an opportunity to screen women who may not have heard about the screen or who will ordinarily not come to the hospital except for pregnancy and related purposes; and pregnancy is not a contraindication to performing a Pap smear and Human Papilloma Virus (HPV) screening tests.<sup>15</sup>

Other benefits of Pap smear include screening and detection of diseases such as Chlamydia infection, bacterial vaginosis and trichomoniasis. Pap smear is not without its own limitations as it has a low sensitivity<sup>(16)</sup> and a longer turnaround time compared to Visual Inspection with Acetic acid (VIA). Setting up an organized national screening program is important. Meanwhile, an increase in opportunistic screening such as in antenatal, postnatal, sexually transmitted infection (STI) clinics, family planning clinic, gynaecological clinics, pre-employment medical examination, in-service medical examination and tertiary institutions will be impactful in decreasing cervical cancer burden.

Pregnancy and request for antenatal care may be the only reason a woman presents to the health professional, thus booking visit or a later visit may be the only occasion she can be afforded a cervical screen. In such instance, in the absence of opportunistic screens; HPV infections and treatable precancerous

lesions may go unrecognized. It is also crucial to understand the perception of pregnant and postpartum women on the cervical cancer screening and its integration into maternal health services. This study assessed the awareness, acceptability and perception of women attending the antenatal and postnatal clinic towards integration of cervical cancer screening methods into routine maternal health care services.

## METHODOLOGY

This was a prospective cross-sectional study conducted among the women attending antenatal care and postnatal care clinics at the University College Hospital (UCH) in Ibadan, Southwest Nigeria. Ibadan is the capital city of Oyo state with a population of about 3 million people. The University College Hospital (UCH), Ibadan is a tertiary institution with various specialty and subspecialty services including Obstetrics and Gynaecology services among others. The antenatal care and delivery section of the hospital has an antenatal booking rate of about 1,800 pregnant women per annum and a delivery rate of 2,500 per annum.

The study population included pregnant and postpartum women attending and receiving antenatal, delivery and postpartum services in the hospital. A purposive sampling technique was used to enroll consenting women presenting for antenatal or postpartum services.

The information obtained included socio-demographic and clinical/obstetric characteristics, awareness of available cervical screening tests, acceptability and willingness to screen, and acceptability of integrating cervical cancer screening into antenatal or postnatal clinic. Data was collected using a semi-structured interviewer-administered questionnaire. The data collected was entered and analysed using IBM SPSS Version 26. Univariate analysis was done for the descriptive statistics and bivariate analysis was conducted using Chi-square test of association for categorical variables. Tables were generated as appropriate, and the level of significance was set at 5%.

Ethical approval was obtained from the University of Ibadan/University College Hospital, Ibadan ethics review committee with ethical approval number – UI/EC/20/0265.

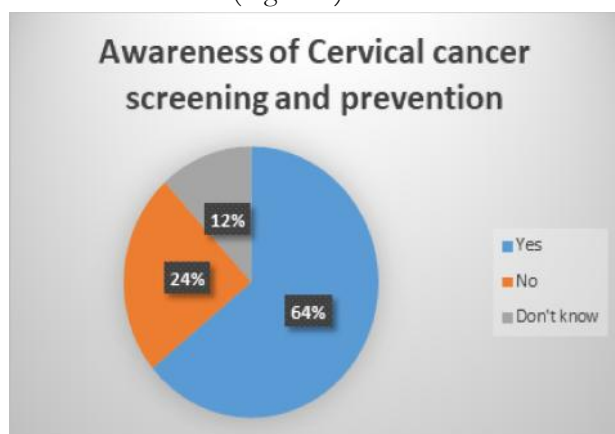
## RESULTS

Two hundred and twenty women were interviewed, respondents were mostly in the age-group 30-34 years and majority (70%) had at least one parous experience. More than 80% had a tertiary education and were married (97.3%).

**Table 1:** Sociodemographic characteristics of participants

Variables	Frequency N=220 (n)	Percentage (%)
<b>Age (years)</b>		
<25	18	8.2
25 – 29	65	29.5
30 – 34	82	37.3
> 34	55	25.0
<b>Occupation</b>		
Professional	90	40.9
Skilled	68	30.9
Unskilled	46	20.9
Unemployed	16	7.3
<b>Ethnicity</b>		
Yoruba	185	84.1
Igbo	26	11.8
Hausa	9	4.1
<b>Level of education</b>		
Primary	2	0.9
Secondary	29	13.2
Tertiary	189	85.9
<b>Husband's level of education</b>		
Primary	3	1.4
Secondary	16	7.3
Tertiary	201	91.4
<b>Marital status</b>		
Single	6	2.7
Married	214	97.3
<b>Religion</b>		
Islam	66	30.0
Christianity	154	70.0
<b>Parity</b>		
0	66	30.0
1-2	124	56.3
3-4	28	12.7
≥5	2	0.9

About 141 (64.1%) of the participants were aware that cervical screening can be done to detect precancerous lesion, thus prevent cervical cancer, while 53 (24%) thought cervical cancer could not be prevented. About 26 (12%) of the participants were not aware of the screening or the preventive measures for cervical cancer. (Figure 1)

**Figure 1:** Awareness of cervical cancer screening and prevention among participants

In Table 2, among the participants, 64.1% were aware of pap smear screening, however, only 27.7% were aware of the HPV vaccine, more than half (51.4%) were not aware of when pap smear screening should be initiated and more than 64.6% of respondents did not know how often it should be done.

About 88.6% of women had never done a pap smear. Among these participants, 39.5% have never thought of or considered it, 30.9% had never heard about it, 6.4% thought it would be expensive, 3.6% felt they didn't need it, 2.3% lacked screening centers around them, 2.3% were not aware of where they could have done the screening, 1.0% needed their husband's approval, 0.9% did not do it due to the cost, 0.9% never believed that they could have it, 0.5% felt they didn't have any symptoms or complaints, and 11.8% had no definite reason.

Among the participants who had done a pap smear 25 (11.4%), 22 (88.0%) have had the test done once,

**Table 2:** Knowledge and practice of cervical cancer screening and prevention

<b>Variables</b>	<b>Frequency N=220 (n)</b>	<b>Percentage (%)</b>
<b>Cervical cancer can be prevented</b>		
Yes	151	68.6
No	4	1.8
Don't know	65	29.5
<b>Aware of precancer stage detectable by screening</b>		
Yes	140	63.6
No	7	3.2
Don't know	73	33.2
<b>Early/pre-cancer stage curable</b>		
Yes	121	55.0
No	7	3.2
Don't know	92	41.8
<b>Heard of any preventive screening test</b>		
Yes	141	64.1
No	53	24.1
Don't know	26	11.9
<b>Heard of Pap smear screening</b>		
Yes	141	64.1
No	79	35.9
<b>Heard about HPV test</b>		
Yes	43	19.5
No	177	80.5
<b>Heard about HPV vaccine</b>		
Yes	61	27.7
No	149	67.7
Don't know	10	4.6
<b>Initiation of Pap smear screening</b>		
< 21 years	39	17.7
21years	31	14.1
>21years	37	16.8
Don't know	113	51.4
<b>Pap smear testing intervals</b>		
Once	1	0.5
Yearly	26	11.8
2-3yearly	37	16.8
5yearly	14	6.4
Don't know	142	64.6

**Table 3:** Practice of cervical cancer screening

<b>Variables</b>	<b>Frequency N=220 (n)</b>	<b>Percentage (%)</b>
<b>Had HPV test done</b>		
Yes	10	4.5
No	210	95.5
<b>Had HPV vaccine</b>		
Yes	10	4.5
No	210	95.5
<b>Had pap smear screening test done</b>		
Yes	25	11.4
No	192	88.6
<b>Had pap smear screening test done n=25</b>		
Once	22	88.0
Twice	2	8.0
Not specified	1	4.0
<b>Last pap smear screen n=25</b>		
≤ 2years	13	52.0
>2years	10	40.0
Not specified	2	8.0
<b>Cervical Screening result n=25</b>		
Normal	21	84
Abnormal	2	8.0
Not specified	2	8.0

**Table 4:** Willingness and acceptability of integration of cervical cancer screening into maternal health services

Variables	Frequency N=220 (n)	Percentage (%)
<b>Perception screening can be done in pregnancy</b>		
Yes	35	15.9
No	37	16.8
Don't know	148	67.3
<b>Acceptable Screening test in pregnancy (Type)</b>		
HPV test	23	10.5
Pap smear	23	10.5
Visual inspection	28	12.7
None	146	66.4
<b>Willing to screen in pregnancy</b>		
Yes	26	11.8
No	112	50.9
Don't know	82	37.3
<b>Preferred timing of screening in pregnancy</b>		
1st trimester	10	4.5
2nd trimester	17	7.7
3rd trimester	5	2.3
Don't know	188	85.5
<b>Willingness to screen in postnatal period</b>		
Yes	141	64.1
No	18	8.2
Don't know	61	27.7
<b>Willingness to continue screening after pregnancy</b>		
Yes	153	69.5
No	6	2.7
Don't know	61	27.8
<b>Test integrated into ANC/PNC</b>		
Yes	129	58.6
No	36	16.4
Don't know	55	25.0
<b>Screening integrated into women's Healthcare beyond pregnancy</b>		
Yes	165	75.0
No	6	2.7
Don't know	49	22.3
<b>Anticipate barriers to Cervical screen in ANC /PNC</b>		
Yes	22	10.0
No	198	90

while 2 (8.0%) have had it done twice. Of the participants that did pap smear only once, majority (92.3%) had no definitive reason for not repeating it subsequently. The reasons given by the participants for not having a follow-up screen include - the test being painful, not necessary, not yet due, and not aware of follow-up screen. (Table 3)

In table 4 - About 67.3% of the participants were not sure if cervical cancer screening could be done during pregnancy, while half (50.9%) of the participants were not willing to screen in pregnancy because majority felt it could be harmful. About 64.1% and 69.5% of the participants were willing to have the screening done at the postnatal clinic and to continue with scheduled screening after pregnancy respectively. Women willing to screen in pregnancy showed a preference for screening in the second trimester. The perceived barriers

to screening in ANC/PNC include timing and cost of screening, fear of screening, discomfort, effect on pregnancy, safety and risk of complication, lack of awareness, preference for after delivery/postnatal, and some patients stated it should not be routine or compulsory during antenatal.

## DISCUSSION

This study explored the acceptability of cervical cancer screening and the perception of its integration into routine maternal healthcare services among pregnant and postpartum women.

The main finding of this study was a low uptake of cervical cancer screening among participants, about 1 in 10 had been screened for cervical cancer using pap smear and only 4.5% had ever done HPV screening. This low uptake is similar to studies in Nigeria, Kenya,

and Pakistan;<sup>(17,18,19)</sup> and in contrast with others that reported a practice rate above 30%.<sup>20,21</sup> Though, about two-third of the women were aware and had a good knowledge of cervical cancer screening and its benefits, one would think that good knowledge should translate to increased uptake of screening, but this was not the case. The Pap smear is a more personal and invasive procedure that may pose individual and cultural barriers; and thus, can hinder women from obtaining the appropriate services. Culturally tailored messages are important to encourage and promote screening; thus, enable the identification of women with abnormal cervical screen within the reproductive age group. Other less-invasive screening methods, like HPV screening may also be employed.

Concerning the integration of cervical cancer screening into the routine maternal health services, most participants (two-third) preferred screening in the postnatal period, three-quarters showed interest in accessing the service if it was integrated into women's health care beyond pregnancy such as family planning and more than half would like it included in routine services offered at the ANC or PNC. The high willingness for cervical cancer screening in this study is similar to the finding from a previous study.<sup>22</sup> According to Ndikom et al, most participants showed a good perception that if cervical cancer screening test was integrated into PNC, more women would be accessible to the information, have better understanding, and it will serve as a process and form of awareness to women.<sup>22</sup> Women attending PNC clinics will be agents for creating awareness, mobilization and to promote the uptake of cervical cancer screening among women in the community. The inclusion of cervical cancer education and screening into routine ANC or PNC services will improve the awareness and utilization of screening services.

The antenatal, postnatal, family planning, gynaecology, STI, infant welfare clinics create a vital opportunity to introduce reproductive age women to positive health behaviors, preventive health strategies and other components of reproductive health services. Cervical cancer prevention – education and screening in maternal health care will introduce and reinforce the concept of opportunistic screen especially in women who were not aware and have never had cervical cancer screen. It will ultimately enhance routine cervical screen in all women especially women with inconsistent or irregular screening patterns. Every contact with eligible women during women's health-related services should be explored to improve counselling and screening for cervical cancer. The integration of cervical screening

test into the antenatal or postnatal care, the need to request the test and carry out cervical screening tests at the ANC/PNC will also improve the practice of the maternal healthcare providers and the quality of care. It will serve to remind healthcare providers of their role in the prevention of cervical cancer, and it is vital not to miss this opportunity.

This study explored the perception of women on integration of cervical cancer screening into maternal health services as a strategy to enhance screening, early identification and prompt intervention that will yield good outcomes for women. It will also contribute to the efforts to eliminate cervical cancer and burden of the disease among women. It will be prudent to leverage on the contact with reproductive age women during maternal and reproductive health services to introduce and reinforce positive health behaviours and preventive health services such as cervical cancer screening.

The limitation of this study is that it was a cross-sectional study. The patients were not followed up to assess the uptake of cervical screening beyond pregnancy and the postpartum period, feasibility and barriers to screening.

In conclusion, the practice of routine cervical cancer screening is low among our women, despite a good knowledge of its benefits. Some women are willing to screen in pregnancy, more women are willing to undergo cervical cancer screening in the postnatal period and during other maternal health services. The ANC or PNC or other maternal health service such as family planning will provide an opportunity for increasing awareness, screening, early detection and prevention of cervical cancer.

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