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Awareness of Papanicolaou Smear and Visual Inspection with Acetic Acid as Screening Tools for Cervical Cancer among Women Attending the General Outpatient Clinic of a Tertiary Institution in North Central Nigeria

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Abstract

Background: Cervical cancer is the second most common cancer in women worldwide and the leading cause of cancer deaths in developing countries. Knowledge and awareness of the disease in Africa are very poor, and mortality from the disease is still very high. Screening in most developing countries is mainly opportunistic. This study was undertaken to determine the level of awareness of Papanicolaou (Pap) smear and visual inspection with acetic acid (VIA) as screening methods for cervical cancer to assist in the early diagnosis of the disease. **Materials and Methods:** This hospital-based, descriptive, cross-sectional study involved women aged 21–65 years who attended the general outpatient clinic of Dalhatu Araf Specialist Hospital, Lafia, either as patients or patients' relatives during the study period. A simple random sampling technique was used to recruit 239 participants using the Leslie Kish formula. Data collected about the participants included sociodemographic background, gynecologic and other relevant medical histories, awareness of cervical cancer, and awareness of Pap smear and VIA as screening tests for cervical cancer. The results were reported as frequencies and percentages only. **Results:** Only 28 (11.7%) study participants had heard about cervical cancer and only 10 (4.2%) were aware of Pap smear as a screening test for cervical cancer. None of the participants were aware of VIA as a screening test for cervical cancer. **Conclusion:** This study revealed that the level of awareness about cervical cancer among the study participants was low. No participant was aware of VIA as a screening method for cervical cancer, but a small percentage of the participants were aware of Pap smear test. It is recommended that efforts should be intensified to improve the awareness of population at risk of cervical cancer.

Keywords: Cervical cancer, Dalhatu Araf Specialist Hospital Lafia, Papanicolaou smear, visual inspection with acetic acid

INTRODUCTION

Cervical cancer is the second most common cancer in women worldwide and the leading cause of cancer deaths in developing countries.^{1,2} While the incidence and mortality rates of cervical cancer have fallen significantly in developed countries, the incidence is still very high in developing countries, with 85% of all deaths from the disease occurring in this region.³

Lack of awareness and knowledge of cervical cancer in Africa is a known risk factor. Cervical cancer is yet to be recognized as an important public health problem in sub-Saharan Africa. In addition, in this region, priority is given to infectious diseases

such as malaria, tuberculosis, leprosy, diarrheal diseases, acute respiratory infections, and HIV/AIDS, all of which have preventive and management strategies.⁴

A study by Dim *et al.* in Enugu in November 2009 concluded that the use of Pap smear among women attending the general outpatient clinic (GOPC) was low and advocated for routine

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cervical cancer counseling and screening, with opt-out option offered to every eligible woman attending the GOPC.⁵ However, an earlier study by Dim *et al.* in the same study area in April of the same year found that improved awareness of Pap test in Nigerian women may not necessarily increase its use, suggesting that there may be more to the use of Pap smear than its awareness.⁶

Knowledge and awareness of this disease in the continent is very poor, and mortality from this disease is still very high. Facilities for the prevention and treatment of cervical cancer are still very inadequate in many countries in the region.³ In a study on the perception and utilization of cervical cancer screening services among female nurses in University College Hospital, Ibadan, Nigeria, Oyedunni and Opemipo reported that the high burden of the disease in the area was due to lack of effective cervical cancer screening program and high prevalence of HPV infection. They concluded that, where effective screening programs are available, poor knowledge and negative health-seeking behavior of the populace lead to poor utilization of the services.⁷ Another study reported that Pap smear was being used as a diagnostic test rather than as a screening test. The study also reported that only 25 (2.1%) women in Accra had a Pap smear performed, adding that a woman was more likely to have a Pap smear if she had some formal education or if she was of high socioeconomic status.⁸ Uptake of Pap smear test in Nigeria is very low when compared with that of other developing countries, further contributing to the reported high levels of cervical cancer and its attendant morbidity. The two main reasons suggested for the low utilization of Pap smear test are lack of awareness and poverty.^{9,10}

In another study in Jos, North Central Nigeria in 2012, Hyacinth *et al.* reported that lack of awareness about Pap smear test was the most commonly cited reason for not having had a Pap smear test. This result is similar to that obtained among Hispanic-American females and inner-city girls, who also cited lack of awareness as their major reason for not having had a Pap smear test.¹¹ Although many other studies reported the lack of awareness of Pap smear as the most common reason for not taking the test, little or no mention was made of alternative screening tests. This study was undertaken to determine the level of awareness of Papanicolaou (Pap) smear which is the gold standard and, an alternative test, visual inspection with acetic acid (VIA), with its advantages of low cost and immediate availability of results,¹² as screening methods for cervical cancer in the early diagnosis of the disease.

MATERIALS AND METHODS

The study was conducted in the Family Medicine Department of the Dalhatu Araf Specialist Hospital, Lafia, Nigeria, between August 1, 2013 and September 30, 2013. It was a descriptive cross-sectional study. The study participants were women between 21 and 65 years of age who presented at the GOPC either as patients or as patients' caregivers, within the period of the study, irrespective of their complaints. The sample size

for the study was determined using the Leslie Kish formula as follows:¹³

$$n = Z\alpha^2 pq/d^2$$

where n = minimum sample size

$Z\alpha$ = confidence level taken at 95% to be 1.96

p = prevalence of precancerous Cervical intraepithelial neoplasia (CIN) cervical lesions in a previous study in Jos⁴ = 17% (0.17)

$$q = 1 - P = 1 - 0.17 (0.83)$$

d = sampling error of 5% (0.05).

$$\text{Therefore, } n = \frac{1.96^2 \times 0.17 \times 0.83}{0.05^2}$$

$n = 217$ (minimum sample size).

An additional 10% of the participants were assumed for missing or incomplete data. This was approximately 22 participants. Therefore, the total number of participants recruited for the study was 239.

At recruitment, which was at the first visit, the study was explained to the participants and written consent was obtained. A questionnaire was completed by each eligible participant, which included sociodemographic data such as age and occupation of the participants. Features of cervical cancer and other gynecological conditions such as pelvic inflammatory disease and cervicitis were inquired. Questions related to awareness and risk factors for the disease were also asked.

Approval for the study was obtained from the Health Research Ethics Committee of Dalhatu Araf Specialist Hospital, Lafia. Participation was voluntary, with provision for opt out. Access to the results of the study was restricted to the investigator, research assistant, and the individual participants only.

RESULTS

In this study, of the total 239 participants, 136 (56.9%) were aged between 21 and 40 years, while 103 (43.1%) were aged above 40 years. Two hundred and thirty-six (86.2%) participants were married. Eighty-two participants (34.3%) had no formal education, whereas 157 (65.7%) had some formal education comprising primary, secondary, or tertiary education.

Regarding the level of awareness of participants about cervical cancer, Pap smear, and VIA test, a few of the participants (28 [11.7%]) have heard about cervical cancer as a disease. Only 10 (4.2%) of them were aware of Pap smear as a screening test, while none was aware of VIA test. The details of the results are shown in Tables 1 and 2 and Figure 1.

DISCUSSION

In this study, only 28 (11.7%) participants had heard about cervical cancer. Similarly, a study by Olumide *et al.* among rural women in Odogbolu and Ikenne local government

Table 1: Sociodemographic characteristics of the study participants (n=239)

Variable	n (%)
Age (years)	
21-30	70 (29.3)
31-40	66 (27.6)
41-50	61 (25.5)
≥51	42 (17.6)
Ethnicity	
Eggon	61 (25.5)
Hausa	35 (14.6)
Alago	33 (13.6)
Kanuri	22 (9.2)
Igbo	12 (5.0)
Mada	8 (3.3)
Others	68 (28.5)
Marital status	
Single	10 (4.2)
Married	206 (86.2)
Divorced	7 (2.9)
Widowed	16 (6.7)
Religion	
Christianity	111 (46.4)
Islam	128 (53.6)
Education	
No formal	82 (34.3)
Primary	47 (19.7)
Secondary	57 (23.8)
Tertiary	53 (22.2)
Occupation	
Trading	86 (36.0)
Civil servant	67 (28.0)
Homemaker	27 (11.3)
Artisan	16 (6.7)
Farming	11 (4.6)
Unemployed	32 (13.4)

Table 2: Awareness about cervical cancer screening tests

	Yes, n (%)	No, n (%)	Total, n (%)
Ever heard about cervical cancer	28 (11.7)	211 (88.3)	239 (100)
Awareness about VIA	0 (0.0)	239 (100)	239 (100)
Awareness about Pap smear	10 (4.2)	229 (95.8)	239 (100)

VIA - Visual inspection with acetic acid, Pap - Papanicolaou

areas of Ogun State in South-West Nigeria revealed that only 109 (15.6%) respondents were aware of cervical cancer.¹⁴ A slightly higher level of awareness about cervical cancer of 17 (34%) participants was reported by Panganai and Gono in Kwekwe, Zimbabwe.¹⁵

On the other hand, studies in some developing countries reported more encouraging levels of awareness. A study by Gharoro *et al.* in Benin City, Nigeria, reported that 127 (65%) respondents were aware of cervical cancer.¹⁶ This level of awareness of cervical cancer was also observed in 174 (66.9%)

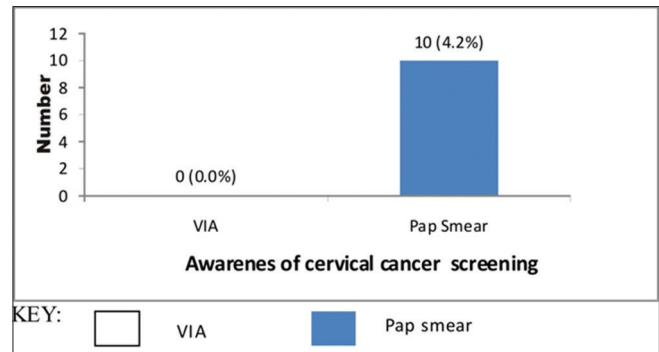


Figure 1: Level of awareness of cervical cancer screening tests. Regarding the level of awareness, 10 (4.2%) participants were aware of Papanicolaou smear, while none was aware of visual inspection with acetic acid as screening method for cervical cancer

participants reported by Ahmed *et al.* in Zaria.¹⁷ Chande *et al.* in Dar es Salaam, Tanzania, also reported that three-quarters of the respondents were aware of carcinoma of the cervix.¹⁸

The high level of awareness reported by Gharoro in Benin City could be because the study was among female health workers, in addition to its being an urban area. The likely explanation for the high levels of awareness of cervical cancer in Zaria and Dar es Salaam was that they are urban areas.

The low level of awareness reported in this study could be because the study area was semi-urban, where women have limited access to quality health facilities, screening services, and limited awareness programs in the media. More so, over 95% of the participants were nonhealth workers and a good number had no formal education.

Of the total number of participants in this study, none had ever heard about VIA. This finding is similar to that reported by Balarabe *et al.* in Kaduna in which none of their 300 respondents were aware of VIA as a cervical cancer screening method.¹⁹ However, Panganai and Gono in Kwekwe, Zimbabwe, reported a higher awareness on VIA in up to 25 (50%) respondents.¹⁵

Balarabe's respondents were not aware of VIA being a cervical cancer screening method despite them being nurses who work in some secondary health-care facilities in Kaduna State. This deficient knowledge could be as a result of a deficient nursing education curriculum that taught about Pap smear test only as a cervical cancer screening method. It is also likely that VIA was not being used in any of the facilities. The higher knowledge exhibited by respondents in Zimbabwe on the other hand was because Kwekwe was a district referral center for VIA and cervicogram.

The lack of awareness about VIA as a screening method by the participants in this study could be because most of them had no or low level of formal education in which case they could not find the information themselves. Furthermore, the screening method (VIA) is not used as commonly as Pap smear in the study area. It may also be because of its low promotion.

With respect to Pap smear's awareness in this study, only 10 (4.2%) participants had ever heard about it. This is lower than the 60 (15.0%) participants reported by Oluwole *et al.* in Lagos,⁵ 151 (38.8%) participants reported by Hyacinth *et al.* in Jos,¹¹ and 29 (11.6%) participants reported by Prakash *et al.* in Bengaluru, India.²⁰ The very low level of awareness about Pap smear in this study environment was likely because such information was not usually provided by health workers in our health facilities and also due to the lack of publicity through the print and electronic media. This suggests that efforts toward enlightenment about the disease through media are not enough. This, therefore, needs to be improved upon by the use of every opportunity that presents itself to the health workers to create awareness in the women they meet.

On the other hand, the high levels of awareness in Enugu, Jos, and Karnataka, India, could be because of the higher literacy level of the study participants and the urban setting of the study environments and therefore more access to information about health generally.

Because cultural and emotional barriers and practical needs are among the main reasons why women choose not to be screened, addressing these barriers and needs will help increase women's awareness and willingness to seek services. Community involvement is essential; using a community-based education approach as a way of building a discourse with women and promoting women's participation will help reduce fear and misunderstanding about cervical cancer screening and treatment and strengthen prevention knowledge and practices. Making women's experiences with services more positive ensures greater follow-up rates and increases the likelihood that women will share information about their good experience with peers.^{4,14}

CONCLUSION

The following conclusions could be drawn:

1. The level of awareness about cervical cancer among the study participants was low
2. No participant was aware of VIA as a screening method for cervical cancer, but a very small percentage of participants were aware of Pap smear test. There is, therefore, the need for increased awareness among the population at risk and advocacy among medical staff at all levels and in the media.

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Conflicts of interest

There are no conflicts of interest.

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