

## **Knowledge of Cervical Cancer, Lifestyle Risks and Screening Practices among Women Attending Selected Health Care Facilities in Ekiti State, Nigeria**

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### **ABSTRACT**

The aim of this study was to assess the knowledge of cervical cancer, identify lifestyle risks, evaluate cervical cancer screening practices and identify the possible barriers to screening practices among women attending selected Health Care Facilities in Ekiti State.: A descriptive research design and quantitative approach was used. Stratified sampling techniques was used to recruit 177 women. Data was analysed using both descriptive and inferential statistics. Chi-square square analysis was used to analyse the associations. The mean and standard deviation, frequencies and percentages of each variable used in the study were calculated. The findings of the study revealed about 65.7% have heard of cervical cancer, 55.4% had the belief that cervical cancer can be prevented and 45.1% of them indicating pap smear as a basic test for cervical cancer screening. Among the lifestyle risk factors, 38.9% of women used oral contraceptives and 46.3% have one sexual partner. Only 44.3% of women are willing to have another pap test done. From the findings, barriers to screening were absence of information (40.6%), lack of convenient screening time (37.1%) and worry associated with screening (32.0%). The study showed a high knowledge level among participants but without corresponding level of screening practices. From the study findings, it could be deduced that despite the high knowledge level of cervical cancer among the study participants, there was no corresponding high level of screening practices. Therefore, health care professionals need to play a crucial role in promoting health education and public awareness on issues relating to cervical cancer so as to intensify women responsiveness which will consequently boost their screening practices. Thus, reducing the burden of cervical cancer mortality.

Keywords: Cervical cancer, screening practices, lifestyle risks, gynecologic cancers

### **INTRODUCTION**

Cervical cancer, also known as gynaecological cancer is the first of six types of reproductive cancers in women. Others include ovarian, vaginal, vulvar, uterine and fallopian tube cancers (Rim et al., 2011; WHO, 2015). Cervical cancer is a disease in which cells in the cervix (the lower and narrow end of the uterus which links the vagina to the upper part of the womb) grow uncontrollably. The human papillomavirus (HPV) is the main cause of cervical cancer, with other risk factors such as smoking, Human Immunodeficiency Virus (HIV) and prolonged use of birth control pills after giving birth to three or more children increase its incidence (Ferlay et al., 2008). According to Mwaka et al (2015) symptoms of cervical cancer may include vaginal bleeding in-between menstruation, during post-menopausal or after sexual intercourse, offensive vaginal discharge and lower abdominal pain. Although symptoms sometimes only become visible in advanced cervical cancer (Rim et al., 2011).

Globally, cervical cancer is the fourth most common cancer among women of reproductive age and the overall seventh most common cancer (Manikandan et al., 2019). An estimated 570,000 new cases were reported in 2018 with about 311,000 deaths recorded annually and 84% of these cases occur in developing countries (Greim el et al., 2009; Bisi-Onyemaechi et al., 2018). In Sub-Saharan Africa, it accounts for 22.5% of all cases of cancer and the major population of individuals who develop cervical cancers reside in rural areas (Ntekim, 2012). It is the second most common cancer in women of reproductive age in Nigeria. Currently, statistics in Nigeria indicate that 14,943 females are diagnosed with cervical cancer yearly while 10,403 deaths are reported. It is projected that by 2030, global cervical cancer will result in over 443,000 deaths in women yearly wit of these deaths likely to occur in sub-Saharan Africa (Bouassa et al., 2017; Silas et al., 2018).

Worldwide, HPV 16 and 18 are two vaccine-preventable types which contribute to over 70% of all cervical

cancer cases. According to the National Cancer Institute (2015) three vaccines that were approved are Gardasil (for girls and boys age 9–26 years), Gardasil 9 (for girls age 9–26 years and boys age 9–15 years), and Cervarix (for girls age 9–25 years). These vaccines can protect against HPV strains 16 and 18, as well as HPV 6 and 11, that can cause anogenital warts, with clinical trials showing their safety and effectiveness in preventing HPV infections, mostly when administered before HPV exposure but cannot treat or cure the infection (Bosch et al., 1995; National Cancer Institute, 2015).

As HPV 16 and 18 are preventable, cervical cancer screening is a vital opportunity for detection and treatment before any likely progression to invasive cancer (Mwaka et al., 2015; Manikandan et al., 2019). Cervical cancer screening must be carried out at the age of 21 or immediately after the first sexual encounter, whichever occurs first, although the ideal screening frequency of 3-5 years is recommended depending on the screening method or 3 years for women living with HIV (Ferlay et al., 2008; Khadka et al., 2017; Mapanga et al., 2018). Females between 21 – 29 years old should have cytology screening done while those between 30 and 65 years should be screened every five years, in addition to HPV testing or every 3 years with only cytology (Ferlay et al., 2008; Khadka et al., 2017; Mapanga et al., 2018). Women younger than 21 years of age and those older than 65 years with a known history of negative results may not require cervical cancer screening. Cervical cancer screening methods include cytology (Papanicolaou test) and HPV Human papillomavirus testing either alone or in combination (Rerucha et al., 2018).

In poorly resourced settings, especially in developing countries, cervical cancer is a major cause of mortality and morbidity as access to services offering cervical cancer screening and vaccination is limited (Mwaka et al., 2015; Manikandan et al., 2019). It is estimated that more than 80% of cases of cervical cancer in developing countries are detected in late stages due to lack of screening services (Mukama et al., 2017). Also, reported screening coverage remains low in communities where majority of the women have never undergone pelvic examination (Khadka et al., 2017). In such low resource settings, the most feasible strategy for cervical cancer screening is visual inspection with acetic acid (VIA) or visual inspection with Lugol's iodine (Gwokyalaya et al., 2017).

In Nigeria, cervical cancer incidence is reportedly high amongst women an approximate yearly incidence rate of 14,943 females diagnosed and 10,403 deaths (Greimel et al., 2009; Toye et al., 2017). Cervical cancer has been recorded to be the most dreaded disease by women in Nigeria, available statistics have shown that cervical cancer kills one woman every hour (Greimel et al., 2009; Toye et al., 2017). More than 75% of patients are diagnosed at advanced stages resulting to poor prospects of cure and survival, this may be due to the non-availability of a national screening program, inexperienced health workers, exorbitant financial implications and non-existent national screening program (Ingwu, 2016). However, cervical cancer screening is under-utilized due to lack of required knowledge of this disease and so it continues to kill rapidly. Inadequate enlightenment on the part of the public as well as poverty are the major challenges towards the effective management of cervical cancer. It therefore required that in order to reduce the morbidity of cervical cancer, increased awareness and education of the public in conjunction with screening and early treatment is highly essential (Ingwu, 2016).

One of the barriers to accessing the cervical cancer screening services that are provided by either the government or a nongovernmental agency in Nigeria is the sporadic and poor program coordination. As a result, most preventive services are urban-based, thus neglecting the rural and semi-urban dwellers. Also, due to the high cost of cervical cancer screening across the country, the under-privileged are unable to partake in the screening exercises (Idowu et al., 2016; Ingwu, 2016). The use and success of cervical screening and control programs will entail improvement in the level of knowledge and awareness of cervical cancer among women. Thus, this study assessed the knowledge of cervical cancer, lifestyle risks and screening practices among women attending selected health care facilities in Ekiti State.

## **SUBJECTS AND METHODS**

### **Study Design And Setting**

The study employed a cross sectional descriptive research design, using quantitative approach. The study was conducted in a Basic Health Centre and a Comprehensive Health Centre in Ado-Ekiti, Ekiti State. The primary health care facility comprising of three buildings which include a record room, a laboratory, an outpatient department, a palpation room, a postnatal ward, a labor ward, pharmacy and a family planning unit. The services rendered at the clinic include antenatal and postnatal care, delivery and family planning services. The Comprehensive Health Centre was also a primary health care facility that comprised of several departments in

four separate buildings. These departments include the outpatient department, a consultation room, a labor ward, a postnatal ward, a palpation room and a pharmacy located in the main building. The other three smaller buildings contain the family planning unit, laboratory, cold chain room as well as the record room.

### Study Population And Selection Of Participants

The target population for this study were women of reproductive age between 15 to 49 years, attending the selected Health Care Facilities in Ekiti State and are willing to participate in the study. Stratified random sampling technique was adopted in the study as the target population were divided into strata for the two primary health care facilities and the sample size was calculated using Leslie and Kish formula for descriptive studies. A population size of 270 was obtained from the total number of women attending the health care facilities.

### Instrument

The study used an adapted, semi-structured self-administered questionnaire for data gathering. The questionnaire was adapted from earlier studies on cervical screening uptake among women (Ibekwe, 2009; Ndlovu 2011). More questions were added to meet the objectives of this research study. Instructions on how to fill the questionnaires were clearly stated on the questionnaires given out. The questionnaire contained 41 questions.

### Data Collection And Analysis

The researchers administered the questionnaires after meeting with the women on clinic days at the selected health care facilities. The aims and benefits of the study was explained to them and informed consent was obtained. Confidentiality and anonymity were clarified with the participants. The data was collected over a period of 8 weeks from October- December, 2018.

Data was analysed using both descriptive and inferential statistics. Chi-square square analysis was used to analyse the associations. The mean and standard deviation, frequencies and percentages of each variable used in the study were calculated.

### Ethical Consideration

The Research Ethics Committee of Afe Babalola University approved the study. Also, ethical approval to conduct the study was obtained from the Chief Matrons of the Health Centres. The participants were informed about the nature of the study. Verbal consent and signature of the participants were obtained. Participants were informed that they have the right to choose voluntarily if they want to participate in the research or terminate their participation to ensure self-determination. Confidentiality and anonymity were maintained as the names of the participants were not required as part of the survey.

## RESULTS

### Demographic Data Of Participants

With respect to the demographic profile of the participants, the majority of them (41.1%) were between 25-34 years of age, with 69.7% of them married (Table 1).

**Table 1: Socio-demographic data of study participants**

| Data Variables          | Frequency, (n=175) | %          |
|-------------------------|--------------------|------------|
| <b>Age Distribution</b> |                    |            |
| 15-24                   | 49                 | 28.0       |
| 25-34                   | 72                 | 41.1       |
| 35-44                   | 36                 | 20.6       |
| 45-49                   | 18                 | 10.3       |
| <b>Total</b>            | <b>175</b>         | <b>100</b> |
| <b>Religion</b>         |                    |            |
| Christianity            | 115                | 65.7       |
| Islam                   | 57                 | 32.6       |
| Others                  | 3                  | 1.7        |
| <b>Total</b>            | <b>175</b>         | <b>100</b> |

|                       |            |             |
|-----------------------|------------|-------------|
| <b>Marital Status</b> |            |             |
| Single                | 42         | 24.0        |
| Married               | 122        | 69.7        |
| Divorced              | 10         | 5.7         |
| <b>Total</b>          | <b>174</b> | <b>99.4</b> |
| <b>Ethnicity</b>      |            |             |
| Yoruba                | 114        | 65.1        |
| Hausa                 | 21         | 12.0        |
| Igbo                  | 29         | 16.6        |
| Others                | 11         | 6.3         |
| <b>Total</b>          | <b>175</b> | <b>100</b>  |
| <b>Education</b>      |            |             |
| Diploma               | 63         | 36.0        |
| First degree          | 65         | 37.1        |
| Post graduate         | 23         | 13.1        |
| Others                | 24         | 13.7        |
| <b>Total</b>          | <b>175</b> | <b>100</b>  |
| <b>Employment</b>     |            |             |
| Employed              | 96         | 54.9        |
| Unemployed            | 44         | 25.1        |
| Student               | 25         | 14.3        |
| Others                | 10         | 5.7         |
| <b>Total</b>          | <b>175</b> | <b>100</b>  |

### Knowledge Of Cervical Cancer

As shown in Table 2, majority (77.7%) of the women have heard about cervical cancer, while 45.1% of them think that pap smear test is the basic test done to screen for cervical cancer. More than half of the participants (55.4%) think that cervical cancer can be prevented.

**Table 2: Participants' knowledge of cervical cancer**

| <b>Data Variables</b>                                    | <b>Frequency, (n=175)</b> | <b>%</b>    |
|--|---------------------------|-------------|
| <b>Have you heard of the term 'cancer' before now?</b>   |                           |             |
| Yes  | 136                       | 77.7        |
| No   | 38                        | 21.7        |
| <b>Total</b>   | <b>174</b>                | <b>99.4</b> |
| <b>Have you heard of 'cervical cancer' specifically?</b> |                           |             |
| Yes  | 115                       | 65.7        |
| No   | 59                        | 33.7        |
| <b>Total</b>   | <b>174</b>                | <b>99.4</b> |
| <b>If Yes, cervical cancer is?</b>                       |                           |             |
| <b>Abnormal cell growth in the cervix</b>                |                           |             |
| Yes  | 89                        | 50.9        |
| No   | 17                        | 9.7         |
| Don't know   | 31                        | 17.7        |
| <b>Growth of tissue anywhere in the body</b>             |                           |             |
| Yes  | 8                         | 4.6         |
| No   | 51                        | 29.1        |
| Don't know   | 31                        | 17.7        |
| <b>Abnormal growth of the female reproductive system</b> |                           |             |
| Yes  |                           |             |
| No   | 27                        | 15.4        |
| Don't know   | 40                        | 22.9        |
|  | 34                        | 19.4        |

|   |            |             |
|---|------------|-------------|
| <b>How did you hear about ‘cervical cancer’?</b>                          |            |             |
| TV  | 20         | 11.4        |
| Radio   | 14         | 8.0         |
| Health care worker  | 59         | 33.7        |
| Friend  | 27         | 15.4        |
| Others  | 11         | 6.3         |
| <b>Total</b>  | <b>131</b> | <b>74.9</b> |
| <b>Do you know someone who has been diagnosed with ‘cervical cancer’?</b> |            |             |
| Yes   | 36         | 20.6        |
| No  | 118        | 67.4        |
| <b>Total</b>  | <b>154</b> | <b>88.0</b> |
| <b>What basic test is conducted to screen for cervical cancer?</b>        |            |             |
| Blood test  | 15         | 8.6         |
| Urine test  | 4          | 2.3         |
| Pap smear test  | 79         | 45.1        |
| Don’t know  | 56         | 32.0        |
| <b>Total</b>  | <b>154</b> | <b>88.0</b> |
| <b>Can cervical cancer be prevented?</b>                                  |            |             |
| Yes   | 97         | 55.4        |
| No  | 52         | 29.7        |
| <b>Total</b>  | <b>149</b> | <b>85.1</b> |
| <b>If Yes, how?</b>   |            |             |
| Screening   | 29         | 16.6        |
| Vaccine   | 18         | 10.3        |
| Faith in God  | 4          | 2.3         |
| Hygiene   | 9          | 5.1         |
| Treatment   | 4          | 2.3         |
| Abstinence  | 8          | 4.6         |
| <b>Total</b>  | <b>72</b>  | <b>41.1</b> |
| <b>What are some signs of cervical cancer?</b>                            |            |             |
| <b>Excessive vaginal bleeding</b>   |            |             |
| Yes   | 78         | 44.6        |
| No  | 7          | 4.0         |
| Don’t know  | 59         | 33.7        |
| <b>Pain during sexual intercourse</b>                                     |            |             |
| Yes   | 74         | 42.3        |
| No  | 8          | 4.6         |
| Don’t know  | 50         | 28.6        |
| <b>Bloody vaginal discharge</b>   |            |             |
| Yes   | 79         | 45.1        |
| No  | 6          | 3.4         |
| Don’t know  | 53         | 30.3        |
| <b>Presence of vaginal mass</b>   |            |             |
| Yes   | 66         | 37.7        |
| No  | 9          | 5.1         |
| Don’t know  | 55         | 31.4        |
| <b>Do you think you are at risk of cervical cancer?</b>                   |            |             |
| Yes   | 46         | 26.3        |
| No  | 111        | 63.4        |
| <b>Total</b>  | <b>157</b> | <b>89.7</b> |

### Lifestyle Risk Factors For Cervical Cancer

Table 3 provides data on the risk factors associated with cervical cancer, such as the age at first sexual intercourse, use of oral contraceptives and many more. The percentage of respondents who had their first sexual intercourse between 21-25years was 43.4% while 46.3% have only one sexual partner. More than two-third

(78.9%) of the respondents have never had a sexually transmitted infection. A total of 31.4% of the participants never had a pap test however 25.1% of the participants have done pap-smear screening between 1-2 times in their lifetime (Table 4).

**Table 3: Lifestyle risk factors for cervical cancer**

| Data Variables  | Frequency, (n=175) | %           |
|---|--------------------|-------------|
| <b>How old were you when you had your first sexual intercourse?</b> |                    |             |
| 15 or below   | 23                 | 13.1        |
| 16-20   | 42                 | 24.0        |
| 21-25   | 76                 | 43.4        |
| 25 or above   | 20                 | 11.4        |
| <b>Total</b>  | <b>161</b>         | <b>92.0</b> |
| <b>How many sexual partners have you had?</b>                       |                    |             |
| 1   | 81                 | 46.3        |
| 2-3   | 67                 | 38.3        |
| 4-5   | 9                  | 5.1         |
| 6 and above   | 6                  | 3.4         |
| <b>Total</b>  | <b>163</b>         | <b>93.1</b> |
| <b>Have you ever had a sexually transmitted infection (STI)?</b>    |                    |             |
| Yes   |                    |             |
| No  | 34                 | 19.4        |
| <b>Total</b>  | <b>138</b>         | <b>78.9</b> |
|   | <b>172</b>         | <b>98.3</b> |
| <b>Do you engage in smoking?</b>                                    |                    |             |
| Yes   | 16                 | 9.1         |
| No  | 157                | 89.7        |
| <b>Total</b>  | <b>173</b>         | <b>98.9</b> |
| <b>Have you ever used oral contraceptives?</b>                      |                    |             |
| Yes   | 68                 | 38.9        |
| No  | 103                | 58.9        |
| <b>Total</b>  | <b>171</b>         | <b>97.7</b> |
| <b>Is there a history of cervical cancer in your family?</b>        |                    |             |
| Yes   |                    |             |
| No  | 6                  | 3.4         |
| Not sure  | 92                 | 52.6        |
| <b>Total</b>  | <b>75</b>          | <b>42.9</b> |
|   | <b>173</b>         | <b>98.9</b> |
| <b>How many children do you have?</b>                               |                    |             |
| None  | 55                 | 31.4        |
| 1-2   | 64                 | 36.6        |
| 3-4   | 42                 | 24.0        |
| 5 or above  | 12                 | 6.9         |
| <b>Total</b>  | <b>173</b>         | <b>98.9</b> |

**Table 4: Participants' pap smear screening practices**

| Data Variables                       | Frequency, (n=175) | (%)         |
|--------------------------------------|--------------------|-------------|
| <b>Have you ever had a pap test?</b> |                    |             |
| Yes                                  | 55                 | 31.4        |
| No                                   | 119                | 68.0        |
| <b>Total</b>                         | <b>174</b>         | <b>99.4</b> |

|   |            |             |
|---|------------|-------------|
| <b>How many times in your life have you had a pap test?</b> |            |             |
| None  |            |             |
| 1-2   | 108        | 61.7        |
| 3-4   | 44         | 25.1        |
| 5 or above  | 5          | 2.9         |
| <b>Total</b>  | <b>2</b>   | <b>1.1</b>  |
|   | <b>159</b> | <b>90.9</b> |
| <b>Where did you have a pap test?</b>                       |            |             |
| Public hospital   | 18         | 10.3        |
| Private hospital  | 31         | 17.7        |
| Health centre   | 4          | 2.3         |
| Others  | 7          | 4.0         |
| <b>Total</b>  | <b>60</b>  | <b>34.3</b> |
| <b>When was the last time that you had a pap test?</b>      |            |             |
| In the last 12 months                                       | 29         | 16.6        |
| In the last 18 months                                       | 6          | 3.4         |
| In the last 2 years   | 5          | 2.9         |
| More than 2 years ago                                       | 15         | 8.6         |
| <b>Total</b>  | <b>55</b>  | <b>31.4</b> |
| <b>How often do you have Pap tests?</b>                     |            |             |
| Every 12 months   | 17         | 9.7         |
| Every 18 months   | 8          | 4.6         |
| Every 2 years   | 13         | 7.4         |
| Less frequently than every 2 years                          | 14         | 8.0         |
| <b>Total</b>  | <b>52</b>  | <b>29.7</b> |
| <b>Would you be willing to have another Pap test done?</b>  |            |             |
| Yes   | 78         | 44.6        |
| No  | 29         | 16.6        |
| <b>Total</b>  | <b>107</b> | <b>61.1</b> |

As shown in Table 5, 40.6% of participants mentioned lack of information about cervical cancer screening procedures and 37.1% mentioned worry from doing cervical cancer screening as possible barriers to pap smear screening.

**Table 5: Possible barriers to pap screening**

| <b>Data Variables</b>   | <b>Frequency, (n=175)</b> | <b>%</b>    |
|---|---------------------------|-------------|
| <b>It is embarrassing to participate in cervical cancer screening</b> |                           |             |
| Strongly agree  | 16                        | 9.1         |
| Agree   | 36                        | 20.6        |
| Neutral   | 52                        | 29.7        |
| Disagree  | 44                        | 25.1        |
| Strongly disagree   | 27                        | 15.4        |
| <b>Total</b>  | <b>175</b>                | <b>99.9</b> |
| <b>Cervical cancer screening is painful</b>                           |                           |             |
| Strongly agree  | 13                        | 7.4         |
| Agree   | 3                         | 20.0        |
| Neutral   | 72                        | 41.1        |
| Disagree  | 31                        | 17.7        |
| Strongly disagree   | 22                        | 12.6        |
| <b>Total</b>  | <b>141</b>                | <b>98.8</b> |

|  |            |             |
|--|------------|-------------|
| <b>Cervical cancer screening is for women who are sexually active (currently having sex)</b> |            |             |
| Strongly agree   | 31         | 17.7        |
| Agree  | 38         | 21.7        |
| Neutral  | 57         | 32.6        |
| Disagree   | 33         | 18.9        |
| Strongly disagree  | 14         | 8.0         |
| <b>Total</b>   | <b>173</b> | <b>98.9</b> |
| <b>Only women who have had children participate in cervical cancer screening</b>             |            |             |
| Strongly agree   | 22         | 12.6        |
| Agree  | 27         | 15.4        |
| Neutral  | 55         | 31.4        |
| Disagree   | 49         | 28.0        |
| Strongly disagree  | 22         | 12.6        |
| <b>Total</b>   | <b>175</b> | <b>100</b>  |
| <b>My partner will not want me to do cervical cancer screening</b>                           |            |             |
| Strongly agree   | 18         | 10.3        |
| Agree  | 21         | 12.0        |
| Neutral  | 65         | 37.1        |
| Disagree   | 44         | 25.1        |
| Strongly disagree  | 26         | 14.9        |
| <b>Total</b>   | <b>174</b> | <b>99.4</b> |
| <b>Doing cervical cancer screening will only make me worry</b>                               |            |             |
| Strongly agree   | 56         | 32.0        |
| Agree  | 39         | 22.3        |
| Neutral  | 49         | 28.0        |
| Disagree   | 22         | 12.6        |
| Strongly disagree  | 7          | 4.0         |
| <b>Total</b>   | <b>173</b> | <b>98.9</b> |
| <b>Having cervical cancer screening can result in infertility</b>                            |            |             |
| Strongly agree   | 17         | 9.7         |
| Agree  | 24         | 13.7        |
| Neutral  | 67         | 38.3        |
| Disagree   | 34         | 19.4        |
| Strongly disagree  | 32         | 18.3        |
| <b>Total</b>   | <b>174</b> | <b>99.4</b> |
| <b>People do not know where to go for cervical cancer screening</b>                          |            |             |
| Strongly agree   | 41         | 23.4        |
| Agree  | 58         | 33.1        |
| Neutral  | 44         | 25.2        |
| Disagree   | 20         | 11.4        |
| Strongly disagree  | 12         | 6.9         |
| <b>Total</b>   | <b>175</b> | <b>100</b>  |
| <b>Lack of female health care workers in health facilities</b>                               |            |             |
| Strongly agree   | 34         | 19.4        |
| Agree  | 37         | 21.1        |
| Neutral  | 57         | 32.6        |
| Disagree   | 28         | 16.0        |
| Strongly disagree  | 19         | 10.9        |
| <b>Total</b>   | <b>175</b> | <b>100</b>  |



|  |            |             |
|--|------------|-------------|
| <b>Attitude of health care workers can discourage people from participating in screening</b> |            |             |
| Strongly agree   | 46         | 26.3        |
| Agree  | 46         | 26.3        |
| Neutral  | 52         | 29.7        |
| Disagree   | 20         | 11.4        |
| Strongly disagree  | 11         | 6.3         |
| <b>Total</b>   | <b>175</b> | <b>100</b>  |
| <b>Lack of convenient clinic time for screening</b>  |            |             |
| Strongly agree   | 65         | 37.1        |
| Agree  | 47         | 26.9        |
| Neutral  | 38         | 21.7        |
| Disagree   | 17         | 9.7         |
| Strongly disagree  | 7          | 4.0         |
| <b>Total</b>   | <b>174</b> | <b>99.4</b> |
| <b>Lack of information about cervical cancer screening procedures</b>                        |            |             |
| Strongly agree   | 71         | 40.6        |
| Agree  | 53         | 30.2        |
| Neutral  | 32         | 18.3        |
| Disagree   | 14         | 8.0         |
| Strongly disagree  | 5          | 2.9         |
| <b>Total</b>   | <b>175</b> | <b>99.0</b> |

When the chi-square test of independence was used to test for significant relationship between respondent's knowledge of cervical cancer and screening practice (Table 6), the result showed that knowledge of cervical cancer has a statistical relationship with screening practice  $\{X(df=2) = 9.968; p=0.007\}$ .

With respect to the relationship between lifestyle risk for cervical cancer and screening practice (Table 7), the participants' history of oral contraceptives was related to screening practice  $\{X(df=1) = 5.129; p=0.024\}$ .

**Table 6: Knowledge level and screening practices of participants**

|           |                    |            |       | Total |        |
|-----------|--------------------|------------|-------|-------|--------|
|           |                    | YES        | NO    |       |        |
| KNOWLEDGE | POOR KNOWLEDGE     | Count      | 9     | 36    | 45     |
|           |                    | % of Total | 7.0%  | 28.1% | 35.2%  |
|           | MODERATE KNOWLEDGE | Count      | 13    | 19    | 32     |
|           |                    | % of Total | 10.2% | 14.8% | 25.0%  |
|           | GOOD KNOWLEDGE     | Count      | 26    | 25    | 51     |
|           |                    | % of Total | 20.3% | 19.5% | 39.8%  |
| Total     |                    | Count      | 48    | 80    | 128    |
|           |                    | % of Total | 37.5% | 62.5% | 100.0% |

| Chi-Square Tests             |                    |    |                       |
|------------------------------|--------------------|----|-----------------------|
|                              | Value              | Df | Asymp. Sig. (2-sided) |
| Pearson Chi-Square           | 9.968 <sup>a</sup> | 2  | .007                  |
| Likelihood Ratio             | 10.413             | 2  | .005                  |
| Linear-by-Linear Association | 9.622              | 1  | .002                  |
| N of Valid Cases             | 128                |    |                       |

**Table 7: Lifestyle risks and screening practices**

|  | Have you ever had pap smear test? | P-value |
|--|-----------------------------------|---------|
|--|-----------------------------------|---------|

|  | YES        | NO          |        |
|--|------------|-------------|--------|
| How old were you when you had first sexual intercourse |            |             | 0.746  |
| 15 OR BELOW  | 8 (5.0%)   | 15 (9.4%)   |        |
| 16-20 YEAR   | 11 (6.9%)  | 30 (18.8%)  |        |
| 21-25 YEARS  | 28 (17.5%) | 48 (30.0%)  |        |
| 25 OR ABOVE  | 7 (4.4%)   | 13 (8.1%)   |        |
| How many sexual partners have you had?                 |            |             | 0.682  |
| 1  | 24 (14.8%) | 57 (35.2%)  |        |
| 2-3  | 24 (14.8%) | 43 (26.5%)  |        |
| 4-5  | 3 (1.9%)   | 5 (3.1%)    |        |
| 6 AND ABOVE  | 3 (1.9%)   | 3 (1.9%)    |        |
| Have you ever had STI                                  |            |             | 0.160  |
| YES  | 14 (8.2%)  | 19 (11.1%)  |        |
| NO   | 41 (24.0%) | 97 (56.7%)  |        |
| Do you engage in smoking?                              |            |             | 0.948  |
| YES  | 5 (2.9%)   | 11 (6.4%)   |        |
| NO   | 50 (29.1%) | 106 (61.6%) |        |
| Have you ever used oral contraceptives?                |            |             | 0.024* |
| YES  | 28 (16.5%) | 39 (22.9%)  |        |
| NO   | 26 (15.3%) | 77 (45.3%)  |        |

## DISCUSSION

Cervical cancer has been recorded to be the most dreaded disease by women in Nigeria as available statistics have shown that more than 10,000 women die from the disease yearly (Idowu et al., 2016). Cervical cancer is however largely preventable especially by early screening, diagnosis and proper management of its premalignant lesions (Bosch et al., 1995; WHO, 2014; Ifemelumma et al., 2019).

Findings from the study showed that 77.7 % of the participants have heard about cervical cancer which is similar to a previous study conducted amongst nurses in Abakaliki, Ebonyi State Nigeria, where all the participants demonstrated high level of knowledge of cervical cancer (Ifemelumma et al., 2019). Khadka et al., (2017), also reported that about 80% of participants were aware of cervical cancer.

The majority (55.4%) of the study participants stated that cervical cancer can be prevented and few mentioned pap screenings. Almost half of the women were aware of the use of pap smear tests for cervical cancer screening. These findings are similar to the findings of Ingwu (2016), which record that fewer respondents were aware of pap smear as a screening test for cervical cancer. Similarly, only 38.2% of participants in a study carried out amongst Sub-saharan students in the United Kingdom were aware of cervical screening services (Ogbonna, 2017).

The main sources of information about cervical cancer were health care workers (33.7%), friends (15.4%) and television (11.4%). However, in a previous study conducted among rural women in Lagos, Nigeria, the predominant source of information showed that 66.7% of women stated that their source of cervical cancer information was the media while 35% mentioned health care professionals as their source of information (Oluwole et al., 2017). This current study has attempted to identify the risk factors associated with cervical cancer. From the findings, 38.9% of participants were using oral contraceptive use and almost half have had a number of sexual partners (46.3%) thereby increasing their risk of cervical cancer. There were however lower recorded percentages with smoking and sexually transmitted infections (9.1% and 19.4%, respectively). This is similar to a study conducted by Mukama et al., (2017) who reported a high rate of oral contraceptive use among the study participants.

This study revealed that only 31.4% of the respondents have been screened for cervical cancer. A similar study (Idowu et al., 2016) on cervical cancer screening conducted in North-central Nigeria, found that only 8.0% of the study participants had ever done Pap smear tests. However, another study carried out amongst Gabonese women stated a higher percentage of women had pap smear test at 65.1% (Assoumou et al., 2015).

In the present study, the major barriers to cervical cancer screening cited by were lack of information (40.6%),

lack of convenient screening time (37.1%) and anxiety/fear associated with screening (32.0%). This does not however agree with the results of previous study [23], where majority of the respondents gave no reason for not screening, but few stated the fear of the result outcome and non-susceptibility to cervical cancer. Other studies (Udigwe, 2006; Igwu, 2016). Ingwu, (2016) specified embarrassment as the highest recorded barrier to screening as well as invasion of privacy. In the study by Assoumou et al., (2015), the major barrier cited by women were negligence and fear of discovering a serious disease. Negligence may suggest the need for an aggressive information campaign about cervical cancer. However, fear reflects a poor understanding of the natural history of cervical cancer and of the principle behind cervical cancer screening. Moreover, this suggests that the acceptability of cervical screening could be high if women were well informed.

## RECOMMENDATIONS

Despite the high knowledge of cervical cancer among the respondents in this current study, there fails to be a similar uptake of screening practices amongst the participants. The lifestyle risks of the respondents in terms of their ages at first sexual intercourse, number of sexual partners, smoking and sexually transmitted infections are low but the use of oral contraceptives was high enough to outweigh the low risk of other risk factors. Coupled with the low risk perception of the respondents to cervical cancer, the uptake of screening is likely to remain low.

Therefore, it is vital that health care professional especially nurses intensify their efforts in providing health education programmes on cervical cancer so as to increase women awareness and knowledge about cervical cancer as this will enable women to be conversant with possible signs of cervical cancer and will also increase the uptake of cervical cancer screening among women. When women are knowledgeable about cervical cancer symptoms, prevention measures and risk-factors, the high level of awareness may indicate that women are in better position to recognize cervical cancer based on its symptoms and seek prompt medical attention.

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## REFERENCES

1. Assoumou SZ, Mabika BM, Mbiguino AN, Mouallif M, Khattabi A, Ennaji MM. Assoumou, S. Z., Mabika, B. M., Mbiguino, A. N., Mouallif, M., Khattabi, A., & Ennaji, M. M. (2015). Awareness and knowledge regarding of cervical cancer, Pap smear screening and human papillomavirus infection in Gabonese women. *BMC Women's Health*, 15, 37.
2. Bisi-Onyemaechi, A. I., Chikani, U. N., & Nduagubam, O. (2018). Reducing incidence of cervical cancer: knowledge and attitudes of caregivers in Nigerian city to human papilloma virus vaccination. *Infectious Agents and Cancer*, 13, 1-6.
3. Bosch, F. X., Manos, M. M., Muñoz, N., Sherman, M., Jansen, A. M., Peto, J., ... & Shan, K. V. (1995). Prevalence of human papillomavirus in cervical cancer: a worldwide perspective. *JNCI: Journal of the National Cancer Institute*, 87, 796-802.
4. Bouassa, R. M., Prazuck, T., Lethu, T., Meye, J. F., & Bélec, L. (2017). Cervical cancer in sub-Saharan Africa: an emerging and preventable disease associated with oncogenic human papillomavirus. *Medecine et Sante Tropicales*, 27, 16-22.
5. Ferlay, J., Shin, H. R., Bray, F., Forman, D., Mathers, C., & Parkin, D. M. (2010). Estimates of worldwide burden of cancer in 2008: GLOBOCAN 2008. *International Journal of Cancer*, 127, 2893-2917..
6. Greimel, E. R., Winter, R., Kapp, K. S., & Haas, J. (2009). Quality of life and sexual functioning after cervical cancer treatment: A long-term follow-up study. *Psycho-Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer*, 18, 476-482.
7. Gwokyalaya, V., Beyeza-Kashesya, J., Bwanika, J. B., Matovu, J. K., Mugerwa, S., Arinaitwe, J., ... & Makumbi, F. E. (2019). Knowledge and correlates of use of safer conception methods among HIV-infected women attending HIV care in Uganda. *Reproductive Health*, 16, 64..
8. Ibekwe, C. M. (2009). *Factors influencing cervical cancer screening uptake among women attending Mahalapye District Hospital in Botswana-Use of the Health Belief Model* (Doctoral dissertation,

University of Limpopo (Medunsa Campus).

9. Idowu, A., Olowookere, S. A., Fagbemi, A. T., & Ogunlaja, O. A. (2016). Determinants of cervical cancer screening uptake among women in Ilorin, North Central Nigeria: a community-based study. *Journal of Cancer Epidemiology*, Article ID 6269240.
10. Ifemelumma, C. C., Anikwe, C. C., Okorochukwu, B. C., Onu, F. A., Obuna, J. A., Ejikeme, B. N., & Ezeonu, O. P. (2019). Cervical Cancer Screening: Assessment of Perception and Utilization of Services among Health Workers in Low Resource Setting. *International Journal of Reproductive Medicine*, Article ID 6505482.
11. Ingwu, J. A. (2016). Knowledge and Screening Practices of Cervical Cancer among Pregnant Women Attending Antenatal Clinic in Tertiary Hospitals in Enugu, South-Eastern Nigeria. *Journal of Cancer and Tumor International*, 1-9.
12. Khadka, K., Shah, S. K., Sanal, T. S., Mathias, J., Upadhayay, A., Ghimire, R., & Ghimire, S. (2017). Knowledge and Awareness about Cervical Cancer Screening and HPV vaccine among Females aged 15-49 years in Rukum District of Nepal. *American Journal of Cancer Prevention*, 5, 10-16.
13. Manikandan, S., Behera, S., Naidu, N.M., Angamuthu, V., Mohammed, O., & Debata, A. (2019). Knowledge and Awareness Toward Cervical Cancer Screening and Prevention Among the Professional College Female Students. *Journal of pharmacy & bioallied sciences*, 11(Suppl 2), 314–320.
14. Mapanga, W., Girdler-Brown, B., Feresu, S. A., Chipato, T., & Singh, E. (2018). Prevention of cervical cancer in HIV-seropositive women from developing countries through cervical cancer screening: a systematic review. *Systematic reviews*, 7, 198.
15. Mukama, T., Ndejjo, R., Musabyimana, A., Halage, A. A., & Musoke, D. (2017). Women's knowledge and attitudes towards cervical cancer prevention: a cross sectional study in Eastern Uganda. *BMC Women's Health*, 17, 9.
16. Mwaka AD., Med, M., Orach CG., Were EM., Lyratzopoulos G., Wabinga H & Roland M. (2015). Awareness of cervical cancer risk factors and symptoms: cross-sectional community survey in post-conflict northern Uganda. *Health Expectations*, 19, 854–867.
17. National Cancer Institute. (2015). HPV and Cancer. Retrieved from <https://www.cancer.gov/about-cancer/causes-prevention/risk/infectious-agents/hpv-fact-sheet>.
18. Ndlovu, B. H. (2011). *Awareness, knowledge and experiences of women regarding cervical cancer in rural Kwazulu-Natal, South Africa* (Doctoral dissertation, Stellenbosch: University of Stellenbosch).
19. Ntekim, A. Cervical Cancer in Sub Sahara Africa, Topics on cervical cancer with an advocacy for prevention 2012. Available from: Available from: <http://www.intechopen.com/books/topics-on-cervical-cancer-with-an-advocacy-for-prevention/cervical-cancer-in-sub-sahara-africa>.
20. Ogbonna, F. S. (2017). Knowledge, attitude, and experience of cervical cancer and screening among Sub-saharan African female students in a UK University. *Annals of African medicine*, 16, 18.
21. Oluwole, E. O., Mohammed, A. S., Akinyinka, M. R., & Salako, O. (2017). Cervical cancer awareness and screening uptake among rural women in Lagos, Nigeria. *Journal of Community Medicine and Primary Health Care*, 29, 81-88.
22. Rerucha, C. M., Caro, R. J., & Wheeler, V. (2018). Cervical cancer screening. *American Family Physician*, 97, 441-448.
23. Rim, S. H., Polonec, L., Stewart, S. L., & Gelb, C. A. (2011). A national initiative for women and healthcare providers: CDC's Inside Knowledge: Get the Facts About Gynecologic Cancer campaign. *Journal of Women's Health*, 20, 1579-1585.
24. Silas, O. A., Yakubu, D., Jegede, O. O., Ajetunmobi, O. I., & Mosugu, O. (2018). A histopathologic review of cervical cancers in Jos University Teaching Hospital, Jos, Nigeria. *Annals of Tropical Pathology*, 9, 135.
25. Toye, M. A., Okunade, K. S., Roberts, A. A., Salako, O., Oridota, E. S., & Onajole, A. T. (2017). Knowledge, perceptions and practice of cervical cancer prevention among female public secondary

school teachers in Mushin local government area of Lagos State, Nigeria. *Pan African Medical Journal*, 28(1).

26. Udigwe, G. O. (2006). Knowledge, attitude and practice of cervical cancer screening (pap smear) among female nurses in Nnewi, South Eastern Nigeria. *Nigerian journal of clinical practice*, 9(1), 40-43. World Health Organization. Nigeria: Human Papillomavirus and Related Cancers, Fact Sheet 2014. WHO/ICO HPV Information Centre. Institut Català d'Oncologia Avda. Gran Via de l'Hospitalet. 2014, Volume 199-20308908.
27. World Health Organization. (2015). WHO vaccine-preventable diseases: monitoring system global summary. Retrieved from <http://apps.who.int/immunization>.