**KNOWLEDGE, ATTITUDE AND PRACTICE OF CERVICAL SCREENING TESTS UPTAKE AMONG NON-MEDICAL STUDENTS IN AN EASTERN TERTIARY UNIVERSITY OF NIGERIA.**

**ABSTRACT**

**Background:** Cervical cancer primarily develops as a result of a persistent infection with high-risk types of the human papillomavirus (HPV). It can affect women at any stage during their reproductive years. The primary goal of cervical cancer screening is to detect precancerous changes in the cervix before they progress to cancer.

**Objectives:** The objective of this study was to determine the knowledge, attitude and practice of cervical screening tests uptake among non-medical students of Ebonyi State University.

**Methodology:** Descriptive cross-sectional study was conducted among 400 female students across 3 departments of the university using semi-structured interviewer administered questionnaire. A multistage sampling technique was employed. Data was analyzed using IBM SPSS version 23.0 software for descriptive statistics.

**Results:** The study showed that respondents had poor knowledge of cervical cancer, although most of them correctly identified cervical cancer as a preventable disease. Participants also agreed that the screening was poor, since most (72.8%) scored poorly on the knowledge score. On a positive note, the study showed that participants had good attitude towards cervical cancer screening as many (88.8%) opined that the screening is very important, that cervical cancer can be prevented through screening (88.8%) and accept to be screened.

**Conclusion:** From this study, it was ascertained that there was evidence of poor knowledge and uptake of screening services notwithstanding, there was positive attitude towards the screening despite participants expressing concerns on several factors which cut across cultural, financial and social backgrounds that could be of significant limitation.

**INTRODUCTION**

* 1. **BACKGROUND**

Cervical cancer describes the malignant growth of tissue found in the cervix. Cervical cancer stands as the third most frequent cancer affecting women after lung cancer and breast cancer while remaining the leading cancer diagnosis among women in developing nations [1].

The worldwide death toll from cervical cancer reaches 266,000 women every year. The disease stands as the primary cancer-related death in Eastern and Central African regions [12]. Cervical cancer stands as the second most prevalent cancer type in both female and general Nigerian populations. Each year 14,000 women develop cervical cancer but more than half of these women will perish from the disease. The Cervical Cancer Age-standardized Incidence Rate in Nigeria during 2018 reached 27.2 per 100,000 women and the Cervical Cancer Age-standardized Mortality Rate stood at 20 per 100,000 women [13].

The disease remains preventable because routine screening reveals the premalignant lesions that leads to it developing [1]. Most developed countries have experienced outstanding decreases in cervical cancer incidence and mortality rates because of their organized screening initiatives. It is expected that if developing countries like Nigeria can follow suite, the rate of cervical cancer spread can also decrease significantly as it has observed that in the UK cervical screening helps to prevent the date of about approximately 5,000 women through effective screening.

The primary goal of cervical cancer screening is to detect precancerous lesions in the cervix, thereby preventing the progression to cervical cancer, as well as to identify early-stage invasive cervical cancer in individuals who may not yet come down with the symptoms [4]. Various screening techniques are available, including the Papanicolaou (Pap) smear, visual inspection of the cervix using acetic acid (VIA), visual inspection with Lugol's iodine (VILI), the HPV DNA test, and colposcopy. However, colposcopy is not utilized as a standalone screening method; rather, it is performed in conjunction with other diagnostic tests. Both the Pap smear and the HPV DNA test involve collecting cellular samples from the cervix for analysis [4].

Cervical screening should be performed every three years starting at age 21 or three years after a woman's first sexual activity. For women aged 30 to 65, co-testing with an HPV DNA test and a Pap smear are recommended every five years, or they may opt for a Pap test alone every three years [5]. Those with specific risk factors, such as HIV infection or immunosuppression, may require more frequent screenings or continued testing beyond age 65. Even if vaccinated against HPV, women should still undergo regular cervical screenings. In resource-limited areas, alternative methods such as visual inspection with acetic acid (VIA) have gained acceptance and demonstrated effectiveness comparable to the Pap smear [6].

It is imperative to note that the rising prevalence of cervical cancer has severe implications, leading to increased illness and death among women from a disease that is largely preventable. In Nigeria, efforts to establish effective cervical cancer screening programs have been largely unsuccessful [7]. Beyond its substantial impact on health, cervical cancer also poses a significant economic burden. It results in high direct healthcare costs for health systems, communities, and households, while also contributing to lost and less productivity due to patients' illness, premature deaths, and disability [7]. Even in certain places where effective screening programs are accessible, their utilization remains low due to limited awareness and negative health-seeking behaviors among the population. This lack of knowledge and reluctance to seek preventive care contribute to underutilization of available screening services, hindering early detection and timely intervention [8].

As developing societies face a growing threat from cervical cancer, studying its perception among female students in higher institutions is crucial due to their age-related risk and lifestyle factors. This study aims to assess the personal perception of non-medical female students in Ebonyi State University regarding cervical screening and identify key factors influencing their participation. These factors may include lack of awareness, financial constraints, fear of the procedure or its side effects, and ineffective screening programs.

The findings will contribute to public health by raising awareness about cervical cancer risks and the importance of screening. Additionally, the study will provide insights into barriers to screening uptake and serve as a foundation for policy formulation and future interventions aimed at reducing morbidity and mortality. It will also encourage students to share their knowledge within their communities, further promoting awareness and preventive measures.

To this end, the researchers sought to access the knowledge, attitude and practice of cervical screening among female non-medical students of Ebonyi State University. Furthermore, the study sought to explore the factors affect the willingness of non-medical female students of Ebonyi State University to take up cervical screening tests.

**2.0 METHODLOLGY**

**2.1 STUDY AREA**

The study area was Ebonyi State University, Abakaliki, a higher institution composed of 9 faculties as at the time of conducting the study. They include: Basic Medical Sciences (3 departments), Law (5 departments), Clinical Medicine (4 departments), Education (8 departments), Management Science (5 departments), Social Sciences and Humanities (9 departments), Sciences (9 departments), Agriculture and Resource Management Sciences (5 departments), Health Sciences (2 departments). The university is reputable for training students who are prestigious and have stood up in all works of life.

**2.2 STUDY DESIGN**

The study will be a descriptive cross sectional study.

**2.3 SAMPLE SIZE ESTIMATION**

The sample size was determined using the Cochran formula for sample size determination.

N= 

Where

N=desired sample size

Z=standard normal deviate of 1.96 with a confidence level of 95%

P=prevalence =35.0%(0.35)4

Q=1-P= 0.65

D=degree of desired accuracy (0.05)

N= (1.96) ^2×0.35× (1-0.35)/ (0.05) ^2

=349.6

Adding 10% none response rate,

= 10% of 349.6= 34.9

Thus, desired sample size is 349.6 + 34.9

**= 384.5 rounded off to 400**

**2.4 STUDY POPULATION**

The study population will be female non-medical students of Ebonyi state university.

**2.4.1 Inclusion criteria**

All full time non-medical students in the university who gave their consent

**2.4.2 Exclusion criteria**

1. Post graduate female students

2. Those in their first year of study (since most of them may not have reached the recommended age of screening which is 21 years).

3. Those not available in school during the period of data collection.

**2.5 SAMPLING TECHNIQUE**

The sample will be obtained using Multi-stage sampling technique. In the **first stage**, we will use the Balloting method of Simple Random Sampling technique to select 3 out of 9 Faculties in Ebonyi State University (i.e. after excluding faculties of Clinical Medicine and Basic Medical Science). Following the balloting, the following faculties were picked;

1. Faculty of Education (which comprises of 8 departments; Arts and Social science, Business, Educational foundation, Guidance and Counseling, Home Economics, Human Kinetics & Health Education, Science Education, Technology & Vocational education). This faculty has a total of 361 students as records gotten from students of affairs.
2. Faculty of Agriculture & Resource Management Science (which comprises of 5 departments; Animal Science, Agric-economics & Extension, Fishery & Aquaculture, Food Science & Technology, Soil Science & Environmental Management). This faculty has a total of 520 students as documented at the time of this study.
3. Faculty of Social Sciences and Humanities (which comprises of 9 departments; Economics, Mass Communication, Political Science, Psychology, Sociology & Anthropology, English language & Literature, History & International Relation, philosophy & Religion, Language & Linguistic). About 920 students make up this department.

Therefore, a sum total of students in the 3 faculty above include: 520+920+361=1801.

The **second stage** involved using the stratified sampling technique to achieve the desired sample size via proportion as seen below:

**Number of individual faculty × Total Number of Sample size**

**Total Number of faculty**

Individual proportion for faculty for questionnaires distribution

Faculty of Education= 361/1801 × 400 =80.17

Faculty of Agriculture & Resource Management Science =520/1801 × 400= 115.49

Faculty of Social Sciences and Humanities 920/1801 × 400 = 204.33

Total= 80.17+115.49+204.33=399.99 approximately 400.

In the **third stage**, the questionnaires was distributed randomly to students accordingly

**2.6 DATA COLLECTION**

The data was collected using a self- administered semi-structured questionnaire. The questionnaire was used to collect data on the knowledge, attitude and uptake of cervical cancer screening and the factors affecting uptake of the screening test.

**2.7 STUDY INSTRUMENT**

A Self-administered pretested semi structured questionnaire adapted by the researchers was used to collect data. The different sections included:

SECTION A: Social demographic characteristics

SECTION B: Knowledge of cervical cancer and available screening tests

SECTION C: Attitude towards cervical cancer screening

SECTION D: Uptake of the screening tests

SECTION E: Factors affecting uptake of the screening test.

**2.8 DATA MANAGEMENT**

**2.8.1 MEASUREMENT OF VARIABLES**

Knowledge was determined by using 30 questions. Each correctly answered question was awarded 1 point, and the total score was converted to percentage. It is relevant to note that researchers used 50% as cut off. Scores of 50% and above was recorded as good knowledge, and scores below 50% as poor knowledge.

This was repeated for Attitude (positive attitude was recorded as scores of 50% and above and negative attitude as scores below 50%)

**2.8.2 STATISTICAL ANALYSIS**

A descriptive statistic was done to ascertain Proportion, Mean, Standard deviation, and Frequency. Then Chi square test was used to determine the association between the outcome variable and other independent variables. The data was analyzed using descriptive and inferential statistics with the aid of Statistical Package for Social Sciences (SPSS) version 23.0, and Chi square test of statistical significance was used in the analysis and the level of statistical significance was set at p value of less than 0.05

**2.9 ETHICAL CONSIDERATION**

Ethical clearance for this study was obtained from Research and Ethics Committee of Ebonyi State University, Abakaliki.

**2.10 INFORMED CONSENT**

Written consent was obtained from the respondents (female non-medical students) after full explanation of the study purpose and their rights as participants are provided by the researchers. Data was then collected and confidentiality was maintained by non- inclusion of self- identifying characteristics in the questionnaire like name or address of participants.

**3.0 RESULTS**

**Table 1: Characteristics of study population**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage** |
| **Gender** Female**Age group**< 21 years 21 – 30 years>30 years**Age:**Mean (SD) = 23.18 (3.93)**Residence** Rural Urban | 400803091180311 | 10020.077.32.820.579.5 |
| **Religion** Christian Muslim Traditional**Parity** 1-4 ≥5**Marital status** Single Married Divorced**Ethnicity** Igbo Yoruba Hausa Fulani Other | 378161195513276053323612112 | 95.74.10.379.320.783.415.31.384.59.23.10.33.1 |

**Table 2: Awareness and responses to knowledge question (\*with multiple answer questions)**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage** |
| **Have heard of cervical cancer** Yes No**Cervical cancer\*** Ca cervix is malignancy of the cervix Ca cervix is coloring of the cervix Ca cervix is closure of the cervix**Cause of cervical cancer\*** Ca cervix is caused by virus | 304852362624162 | 78.121.982.59.18.461.6 |
|  Ca cervix is caused by bacteria Ca cervix is caused by fungi Ca cervix is caused by witchcraft**Symptoms of cervical cancer\*** Ca cervix has no symptoms Foul offensive vaginal discharge Irregular vaginal bleeding Post coital vaginal bleeding Fever Pelvic pain Weight loss**Risk factors for cervical cancer\*** Sexual intercourse at age  Multiple sexual partners Smoking History of HPV infection Use of IUCDs Impaired immunity Poor hygiene Alcohol use**Prevention of cervical cancer\*** Monogamous relationship Abstinence Condom Avoiding sharing of sharps**Heard of ca cervix screening** Yes No**Screening modalities for cervical cancer\*** PAP smear VIA Cervical biopsy HPV DNA test Colposcopy **Persons eligible for cervical cancer screening**Women above 21years/sexually active Married women only Women above 30years**Frequency of cervical cancer screening** 1-3 monthly Yearly 1-3 yearly Don’t know**Cancer of the cervix can be detected early** Yes No**If found, are they curable**YesNo | 8499602292171711032371671612071232221181411561099012556262481521761827567257469693101739625816167192 | 31.93.43.418.470.266.652.531.672.751.251.666.339.471.237.845.250.034.936.751.022.910.662.038.069.67.110.722.12.888.615.933.125.627.820.126.494.25.846.553.5 |
| **Knowledge of Cervical cancer** |  |  |
|  | Poor knowledge | 291 | 72.8 |
|  | Good knowledge | 103 | 27.3 |

Fig 1: Pie Chart showing Knowledge Proportion among participants

**Table 3: Attitude towards cervical cancer screening (\*multiple answer questions)**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage** |
| **Cervical cancer can be prevented through frequent screening** Yes No**Cervical cancer screening is very important** Yes No**Readily agree to cervical cancer screening** Yes No**Recommend cervical cancer screening to friends and family** Yes No**Willing to pay for cervical cancer screening** Yes No**Don’t have any risk of developing cervical cance**r Yes No**Cervical cancer screening has been recommended for me** Yes No**I went for the screening test** Yes No**Factors that affect going for cervical cancer screening\*** Painful procedure Females 21years old are safe Test could be dangerous and risky No factor Wasn’t aware of any cervical cancer screening center | 31840324413134232429256952558514120951293456083124153 | 88.811.288.811.288.211.891.88.272.927.175.025.040.359.714.885.216.121.429.644.354.6 |

**Table 4: Uptake of the screening test (\*with multiple answer questions)**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage** |
| **I have been screened for cervical cancer before** Yes No**Number of times one has been screened** Once Twice Thrice**Last time screened**Less than 1 yearOver 1year but less than 3years ago Over 3years ago/can’t remember**Frequent of the screening**Regularly every 1-3years Whenever I remember Whenever the doctor or nurse refers me I recently screened for the first time**Method used in cervical cancer screening** | 583073810102124131918117 | 15.984.165.517.217.236.241.422.434.532.720.012.7 |
|  PAP smear VILI VIA Don’t know method used**Reason for having not been screened\*** Husband did not agree Fear of being tagged promiscuous Fear of being diagnosed with cancer High cost of screening I did not know where to go for screening No time Procedure is cumbersome Not being sexually active Never thought of it Lack of awareness of test | 44421023598571127716065118137 | 73.36.73.316.77.318.626.822.440.122.418.920.537.243.2 |

Fig 2: Bar Chart showing the distribution of known method of screening

**Table 5: Factors affecting uptake**

|  |  |  |
| --- | --- | --- |
| **Variable** | **Frequency** | **Percentage** |
| **Reproductive health can be assessed in a private hospital** Yes  No**Reproductive health can be assessed in a government hospital** Yes No**Recommended for screening when I visited the hospital** Yes No**I know where cervical cancer screening is provided** Yes No**I am physically fit so I have no need for cervical cancer screening**Yes No**It is too embarrassing to do a cervical cancer screening** Yes No**PAP smear is painful** Yes No**Doing a PAP smear will only make one worry more** Yes No | 2295519074942591322262191038120173183108136 | 80.619.472.028.026.673.436.963.168.032.028.771.328.571.544.355.7 |

**Table 6: Association between socio-demographic characteristics and knowledge of cervical cancer**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** |  | **Knowledge of cervical cancer****N (%)** | **Total**  | ***X*2(p-value)** |
|  |  | **Poor**  | **Good**  |  |  |
| **Age**  |  |  |  |  |  |
|  | < 21 years | 62 (77.5) | 18 (22.5) | 80 | 1.14 (0.56) |
|  | 21 – 30 years | 221 (71.5) | 88 (28.5) | 309 |  |
|  | >30 years | 8 (72.7) | 3 (27.3) | 11 |  |
| **Place of residence** |  |  |  |  |
|  | Rural | 57 (71.3) | 23 (28.7) | 80 | 0.09 (0.76) |
|  | Urban  | 227 (73.0) | 84 (27.0) | 311 |  |
| **Religion** |  |  |  |  |  |
|  | Christian | 273 (72.2) | 105 (27.8) | 378 | 0.44 (0.82) |
|  | Others | 13 (76.47) | 4 (23.52) | 17 |  |
| **Parity of respondents** |  |  |  |  |
|  | 1 – 4 | 131 (67.2) | 64 (32.4) | 195 | 0.21 (0.37) |
|  | >4 | 36 (70.0) | 15 (29.4) | 51 |  |
| **Marital status** |  |  |  |  |  |
|  | Single | 233 (71.3) | 94 (28.7) | 327 | 0.89 (0.64) |
|  | Married | 46 (76.7) | 14 (23.4) | 60 |  |
|  | Divorced  | 4 (80.0) | 1 (20.0) | 5 |  |
| **Ethnicity** |  |  |  |  |  |
|  | Hausa/Fulani/Yoruba | 39 (79.6) | 10 (20.4) | 49 | 2.45 (0.29) |
|  | Igbo | 240 (72.3) | 92 (27.7) |  |  |
|  | Others | 7 (58.3) | 5 (41.7) |  |  |

**Table 7: Association between socio-demographic characteristics and uptake of cervical cancer screening**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Variable** |  | **Have been screened for cervical cancer****N (%)** | **Total** | ***X*2(p-value)** |
|  |  | **Yes** | **No** |  |  |
| **Age**  |  |  |  |  |  |
|  | < 21 years | 14 (20.8) | 54 (79.4) | 68 | 3.6 (0.21) |
|  | 21 – 30 years | 44 (15.3) | 243 (84.7) | 287 |  |
|  | >30 years | 0 (0) | 10 (100) | 10 |  |
| **Place of residence** |  |  |  |  |
|  | Rural | 21 (28.4) | 53 (71.6) | 74 | 10.37 (0.001) |
|  | Urban  | 37 (12.9) | 249 (87.1) | 286 |  |
| **Religion** |  |  |  |  |  |
|  | Christian | 52 (15.0) | 294 (85.0) | 346 | 6.85 (0.32) |
|  | Others | 6 (40.0) | 10 (60.0) | 10 |  |
| **Parity of respondents** |  |  |  |  |
|  | 1 – 4 | 38 (21.0) | 138 (78.4) | 176 | 0.53 (0.46) |
|  | >4 | 13 (26.5) | 35 (73.5) |  |  |
| **Marital status** |  |  |  |  |  |
|  | Single | 42 (14.0) | 258 (86.0) | 300 | 4.64 (0.09) |
|  | Married | 14 (25.5) | 41 (74.5) | 55 |  |
|  | Divorced  | 1 (20.0) | - | 1 |  |
| **Ethnicity** |  |  |  |  |  |
|  | Hausa/Fulani/Yoruba | 17 (37.0) | 29 (63.0) | 45 | 18.53 (<0.001) |
|  | Igbo | 41 (13.6) | 261 (86.4) | 302 |  |
|  | Others | 0 (0) | 12 (100) | 12 |  |

**4.0 DISCUSSION**

Cervical cancer is largely a preventable disease [1]. An important strategy towards the reduction of its burden in a developing country is by early diagnosis and management of the premalignant lesions of the disease; this would be achieved via screening of women at risk. The current study evaluated the determinants of cervical cancer screening services among female non-medical students in Ebonyi State University, Abakaliki. Our respondents are females as is in most other studies done in the past, and involved students in the higher institution of learning (university) as was in a previous study done among first year students of the university Free state, South Africa, 2018 [9]. Most of the respondents are single, nulliparous, and reside in the urban area. It was observed that there was no statistical significant association between all the sociodemographic characteristics of the respondents and their knowledge of cervical cancer. However, with regards to uptake, we noticed that, where the respondents live has a significant association with their uptake of cervical cancer screening. Higher proportion of those living in the rural area [10] (28.4%), had more uptake, compared to (12.9%) among those living in the urban area [11]. Similarly, respondents of Hausa, Fulani and Yoruba ethnic nationality had higher proportion of cervical cancer uptake compare to the Igbos 41 (13.6%) and respondents from other tribes 0 (0%). There was no statistical significant association between other sociodemographic features of the respondents and uptake of cervical cancer screening.

 The respondents in our study had poor knowledge of cervical cancer, although most of them correctly identified cervical cancer as a preventable disease and the majority (71.2%) of them noted HPV as a risk factor, their general level of knowledge about cervical cancer and its screening was poor, since most (72.8%) scored poorly on the knowledge score. However, about 70.2% of the respondents identified offensive vaginal discharge as a symptom of cervical cancer, and a good number knew that pelvic pain and irregular vaginal bleeding could be caused by cervical cancer. This finding is in tandem with the study done in Abakaliki, Ebonyi State, Nigeria, amongst secondary school teachers which showed that about 71.2% of those who knew about cervical cancer were aware that human papilloma virus was the cause of cervical cancer [12].

Many respondents in this study had inadequate knowledge of risk factors for cervical cancer, as only 39.4 and 45.2% knew that smoking and impaired immunity, respectively, are risk factors. Low knowledge of association of smoking with cervical cancer is not surprising as smoking is not a common practice among Nigerian women but poor knowledge of the link between impaired immunity and cervical cancer is not encouraging in view of the evidence linking cervical cancer with HIV. Some of the respondents even had the erroneous belief that IUCD, poor hygiene, and alcohol could result in cervical cancer. This finding is similar to the findings in studies done in Lagos, Nigeria [13].

Development of any national cervical cancer prevention and control program is pivotal in reducing morbidity and mortality associated with cervical cancer in sub-Saharan Africa, but this is still a distant dream in Nigeria [14]. It was therefore not surprising that only about one-quarter of the respondents knew the cervical cancer screening interval. The commonest known screening modality in this study was Pap smear (69.6%). Less than half of the respondents recognized VIA, cervical biopsy, HPV DNA testing, and colposcopy as screening modalities for cervical cancer. This finding is similar to the study done in Lagos, Nigeria [15], where colposcopy was the least recognized form of screening for cervical cancer. This low knowledge of other methods calls for more awareness campaign on screening modalities for cervical cancer so as to give people more knowledge of the disease.

The respondents in our study had good attitude towards cervical cancer screening as many (88.8%) opined that the screening is very important, that cervical cancer can be prevented through screening (88.8%) and will readily go for the screening. Saad et al[16] reported that lack of physicians’ referral and ignorance about location of service centers were the two most frequent reason for failure of utilization. The study also revealed that respondents had a fair attitude towards screening as many opined that better facilities, provision of female staffs and offering services at a cheaper cost at screening centers will enhance utilization. Adebayo noted that though most women did not consider themselves susceptible to cervical cancer, not withstanding, majority (88.9%) were willing to undergo screening and 93.8% were willing to take HPV vaccine or recommend it to a friend. However, majority said they will recommend the consent of their spouse to be screened [17].

The findings from our study showed poor uptake of cervical cancer screening among our respondents as 84.1% have not been screened before. This corroborate with those of Mathivha [18] who also documented a similar low level of cervical cancer screening uptake among females Limpopo. Reasons given for poor uptake were lack of awareness and not knowing where to go for the screening amongst others. Poor utilization documented in this study also affirms the findings from the Nnewi study among nurses [19]. Reasons given for non-utilization such as fear of the results and not being candidate for cervical cancer have been documented in earlier studies in Uganda [20] and Nigeria [13]. These misconceptions need to be addressed in an intervention program targeting this category of health workers. This finding cannot be over-emphasized as looking up to health professionals for health information and guidance is essential in many societies [21].

 A study done by Okaba et al showed that uptake of cervical cancer screening was poor as only 0.7% had undergone screening and the commonest reason for this was; not being sexually active, lack of time and fear of the result [22]. This is similar to the finding in our study as 84.1% of the respondents have never been screened before.

 **5.0 Conclusion**

At the end of this study, it was clearly evident that there was poor knowledge of cervical cancer and its screening modalities among female non-medical student of Ebonyi State University as clearly seen in far majority of participants. Furthermore, there was also poor uptake of the screening services. Certain factors such are culturally related, finance and fear of the unknown as seen in the results were related to the poor uptake, most common of which are, not knowing where to go for the screening and lack of awareness of cervical cancer screening, along with spouse refusal. Hence there is need for an intervention to promote cervical cancer screening so as to combat the menace of the condition.

**To the Government**

1. The government should ensure provision of screening centers at little or no costs so as to ensure many beneficiaries of the scheme.

2. Policies should be made in the hospital to encourage doctors ensure that patients are made to do screening as necessary.

**To the Public Health Physician and Health Workers**

1. First contact PAP smear should be offered to women who present for Antenatal visits.

2. Sensitization of the populace and patients who present for daily clinic should be done on a regularly basis.

**To the University and the General Population**

The general population should take the issue of cervical cancer screening seriously as preventing the disease is much better than its management. The more enlightened once who have undergone screening, should advice and encourage others to go the screening as well. Also, lots of research activities should be encouraged and conducted by the university community to ensure further addition to knowledge. Activities should be put in place to ensure that incoming students be oriented on the danger of cervical cancer and the necessity of screening

**5.1 Limitations of the Study**

1. The study cannot be generalized because it was done in a restricted setting.

2. There was a financial challenge on the part of researchers as it impeded on the coverage of more participants as the researchers had hoped for wilder coverage.

3. The study was a cross-sectional study which implied that it was done within a short time frame and presented a snap shot of the possible outcome. However, a longitudinal study would have covered a longtime frame and presented a more generalized view on the subject matter.

4. Researchers encountered participants who did not fill most of questionnaires and some answers were perceived to be false hence, data had to scrutinized and cleanse before analysis.

**DISCLAIMER (ARTIFICIAL INTELLIGENCE)**

Authors hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of manuscripts. This guarantees the fact that the originality of the study was maintained.

**CONSENT AND ETHICAL APPROVAL**

Individual’s informed consent was obtained from the respondents after detailed explanation of the objectives, scope, and benefits of the study had been made known to them.

The permission of the various head of departments in the selected department was granted before the research was commenced.

Ethical clearance was sorted from the Hospital Research Ethics Committee affiliated with the university.

**COMPETING INTERESTS**

Authors have declared that no competing interests exist.

COMPETING INTERESTS DISCLAIMER:

Authors have declared that they have no known competing financial interests OR non-financial interests OR personal relationships that could have appeared to influence the work reported in this paper.

**References**

1. Umeora O.U.J, Egbuji C.C, Onyebuchi A.K, Ezeonu P.O. Cervical Cancer. In: Our Teachers, comprehensive textbook of Obstetrics and Gynecology 1st edition: St. Benedict Printing and Publishing. 2017
2. WHO. Comprehensive Cervical Cancer Control; A guide to essential practice. 2014; 2:27-39.
3. WHO. Costing and National Strategic Plan on Prevention and Control of Cervical Cancer: Nigeria 2017-2021; 2020: 3
4. Ifemelumma C.C, Anikwe C.C, Okorochukwu B.C, Onu F.A, et al. Cervical Cancer Screening: Assessment of Perception and Utilization of Services among Health Workers in Low Resource Setting. International Journal of Reproductive Medicine. 2019; 01.
5. National Cancer Institute 2025 “https://www.cancer.gov/types/cervical/screening
6. Timoney MT, Atrio JM, McGowan JP, et al. Screening for Cervical Dysplasia and Cancer in Adults With HIV [Internet]. Baltimore (MD): Johns Hopkins University; 2022 Mar. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK579640/>
7. Souza J, Hunt B, Asirwa F, Adebamowo C, Lopes G. Cancer care outcome disparity in high, middle and low income countries. Journal Clinical Oncology. 2016; 34(1):6-13.
8. Atnafu, D.D., Khatri, R. & Assefa, Y. Drivers of cervical cancer prevention and management in sub-Saharan Africa: a qualitative synthesis of mixed studies. Health Res Policy Sys 22, 21 (2024). <https://doi.org/10.1186/s12961-023-01094-3>
9. Ogwunga CC, Anyadoh-Nwadike SO, Ahumibe NC, Nwakwasi EU. Knowledge and Attitude of Female Students of Tertiary Institutions in Imo State, Nigeria Towards Cervical Cancer and Its Screening. J Community Health. 2021 Jun;46(3):509-514. doi: 10.1007/s10900-020-00892-y. PMID: 32710233.
10. Aimiosior MO, Omigbodun AO. Knowledge of Cervical Cancer and Cervical Cancer Screening Methods Among Female Secondary School Students in Ibadan, Nigeria. Afr J Biomed Res. 2020 Jul;23(SE1):99-103. PMID: 35813969; PMCID: PMC9265138.
11. Ifemelumma CC, Anikwe CC, Okorochukwu BC, Onu FA, Obuna JA, Ejikeme BN, Ezeonu OP. Cervical Cancer Screening: Assessment of Perception and Utilization of Services among Health Workers in Low Resource Setting. Int J Reprod Med. 2019 Feb 3;2019:6505482. doi: 10.1155/2019/6505482. PMID: 30854395; PMCID: PMC6377970.
12. Agboeze J, Ezeani NN, Nwali MI, Ukaegbe C, Mu'awiyyiah-Babale S. Cervical Cancer Screening Knowledge, Uptake and Barriers among Female Undergraduates in a Nigerian University. *Niger Med J*. 2022;63(3):220-225. Published 2022 Sep 12. doi:10.60787/NMJ-63-3-103
13. Chigbu CO, Onyebuchi AK, Egbuji CC, Ezugwu EC. Experiences and unmet needs of women undergoing Pap smear cervical cancer screening: impact on uptake of cervical cancer screening in south eastern Nigeria. J Cancer Educ. 2015 Mar;30(1):81-5. doi: 10.1007/s13187-014-0691-1. PMID: 24980966.
14. Black E, Richmond R. Prevention of Cervical Cancer in Sub-Saharan Africa: The Advantages and Challenges of HPV Vaccination. *Vaccines (Basel)*. 2018;6(3):61. Published 2018 Sep 8. doi:10.3390/vaccines6030061
15. Olubodun, T., Balogun, M.R., Odeyemi, A.K. *et al.* Barriers and recommendations for a cervical cancer screening program among women in low-resource settings in Lagos Nigeria: a qualitative study. *BMC Public Health* **22**, 1906 (2022). <https://doi.org/10.1186/s12889-022-14314-2>
16. Sadoh AE, Okonkwobo C, Nwaneri DU, Ogboghodo BC, Eregiea C, Oviawe O, Famuyiwa O. Effect of Peer Education on Knowledge of Human Papilloma Virus and Cervical Cancer among Female Adolescent Students in Benin City, Nigeria. Ann Glob Health. 2018 Apr 30;84(1):121-128. doi: 10.29024/aogh.24. PMID: 30873785; PMCID: PMC6748253.
17. Agboola Adebayo MD, Bello Oluwasomidoyin O (2021) The determinants of knowledge of cervical cancer, attitude towards screening and practice of cervical cancer prevention amongst antenatal attendees in Ibadan, Southwest Nigeria ecancer 15 1225
18. Mathivha L, Ramathuba DU, Maputle MS. Factors Affecting Participation in Cervical Screening by Female Nurses in Public Health Institutions in Vhembe District, Limpopo Province. Nurs Rep. 2023 Mar 8;13(1):424-435. doi: 10.3390/nursrep13010039. PMID: 36976691; PMCID: PMC10051518.
19. Udigwe okanadu Gerald. Knowledge attitude and practice of cervical cancer screening among female nurses in Nnewi, south east Nigeria. Nigeria journal of clinical practice. 2016;9(1).
20. Okaba E. Knowledge, Attitude and Practice Concerning Cervical Cancer Screening Among Reproductive Age Group Women in Low-Resource Settings Yenagoa Bayelsa State. Niger Med J. 2024 Sep 26;65(4):512-523. doi: 10.60787/nmj-v65i3-492. PMID: 39398398; PMCID: PMC11470275.
21. Owoeye GO, Nwaogwugwu JC, Ehinze ES. Knowledge, Attitude and Practices of Cervical Cancer Screening among Female Teachers in an urban community in Lagos, Nigeria. *Niger Med J*. 2022;63(3):236-247. Published 2022 Sep 12.
22. Olubodun Tope, Olalade Oluwakemi, mobolanle Balogun. Knowledge and practice of cervical cancer prevention among women residing in urban slum. Pan African medical journal.2019;32:130.