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RESEARCH ARTICLE

Knowledge and Utilization of Cervical Cancer Screening Services Among Female Undergraduates at FUTO

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Abstract

Background: Globally, cervical cancer is the fourth most common is a type of cancer in women. It that starts in the cervix. The cervix is a hollow cylinder that connects the lower part of a woman's uterus to her vagina. Cervical cancer is a leading cause of mortality particularly in young women. The aim of this study is to assess the knowledge and utilization of cervical cancer screening services among female undergraduates at Federal University of Technology Owerri.

Methods: A descriptive cross sectional research design was adopted for this study. A multi stage sampling technique was used in recruiting a total of 374 female students that participated in this study and a pretested questionnaire was used in the data collection of the study. Statistical Package for Social Sciences (SPSS) version 20 was used in the analysis of the study.

Results: The study showed that, 46.3% (173) of the respondents aged 15-24. From the study, majority of the respondents 85.8% (321) had heard about cervical cancer screening. Most of the respondents 81.9% (306) affirmed they would utilize cervical cancer screening if offered a chance. A good number of the respondents 33.95% (127), mentioned that opined "distance to facility" as one of the factors that influenced the utilization of cervical cancer screening services. Further results from the study based on the relationship between Socio-demographic characteristics and level of knowledge of respondents towards cervical cancer screening services demonstrated that there was a statistically significant relationship between age ($p = 0.0035$), academic level ($p = 0.0023$), healthcare plan ($p = 0.0327$) and level of knowledge of cervical cancer.

Conclusion: The study concluded that, while many female undergraduates had a good understanding of cervical cancer screening, this did not translate into a propensity to utilize screening services. From the study, it was recommended that, female undergraduates must have a thorough understanding of cervical cancer and how to prevent it.

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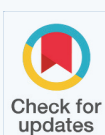
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Introduction

Cervical cancer is a type of cancer that starts in the cervix [1]. The cervix is a hollow cylinder that connects the lower part of a woman's uterus to her vagina [2]. Most cervical cancers begin in cells on the surface of the cervix. As one of the leading causes of mortality among women, cervical cancer is the second most common cancer in women worldwide and the leading cause of cancer deaths among women in developing countries [2]. In addition, cervical cancer has a relatively early onset, occurring primarily during reproductive ages, and is one of the three most common cancers among women under the age of 45 in most countries [3]. Cervical cancer is primarily caused by Human Papillomavirus (HPV) infection, which has been identified as a primary risk factor for cervical carcinogenesis [1]. Efforts to reduce this risk have resulted in the development of cervical cancer vaccines that target specific HPV strains, reducing the incidence of precancerous lesions significantly [3]. The World Health Organization (WHO) emphasizes the importance of total cervical cancer control, advocating for critical practices such as vaccination, screening, and treatment [1].

A recent study posited that mortality from cervical cancer varies in different geographic regions [4]. The mortality due to cervical cancer is high worldwide, mainly because of the absence of a functioning screening process and the advanced stage of the disease at diagnosis [5]. (South African HPV advisory board, 2010). About 527,624 women are already diagnosed with cervical cancer, and 265,672 die from the disease annually [6]. About 87% of all deaths from cervical cancer occur in sub-Saharan African countries. The age-standardized incidence rate for cervical cancer is much lower in developed countries at 5.0 per 100,000 compared to developing countries at 8.0 per 100,000 [7].

According to several studies, the mortality rate for cervical cancer is lower in developed nations at 2.2 per 100,000 compared with developing nations at 4.3 per 100,000 [2,7,8]. An important strategy towards reducing the incidence and mortality associated with cervical cancer is to increase the screening rate of women who have not screened or those who screen infrequently [9]. Knowledge about cancer of the cervix and its screening is important for screening uptake. Women with low levels of knowledge about cervical cancer and its prevention are less likely to access screening services [10]. Female health workers have

shown good knowledge of cervical cancer, however, cervical cancer screening attendance rates are still far from satisfactory in most countries [11].

Despite its proven importance, rates of attendance for screening programmes vary widely and are considerably low [3,12-14]. The low prevalence of early cervical cancer screening and limited access to its treatments are largely attributed to differences in diagnosis and subsequent mortality from the disease among high- and low-income countries. For instance, the screening uptake for cervical cancer in the three developing regions was only 6%, 12%, and 8.3% in South Africa, Bhutan, and Nigeria, respectively [15]. An important strategy towards the reduction of its burden in a developing country is early diagnosis and management of the premalignant lesions of the disease, this would be achieved via screening of women at risk [16,17]. Cervical cancer screening services among undergraduates in tertiary institutions are imperative, and cervical cancer usually develops slowly, which means that most cases can be identified and managed when screening is performed regularly [18]. Cervical cancer knowledge is important because it is one of the most easily preventable forms of female cancer if early screening and diagnosis are made. Low awareness level about the disease and its risk factors, beliefs about the disease, poor access to preventive services, unaffordability of the service, and the current health service system can all affect the decision to seek health care services for cervical cancer [19].

Worldwide, it has been posited by several studies that cervical cancer is preventable and curable if detected early enough and treated correctly [2,14,15,20]. Cervical cancer is a leading cause of mortality, particularly in young women [12]. The knowledge of young school girls about cervical cancer screening is a problem, and there is a need to determine what factors might be influencing the utilization of these screening services. In Nigeria, undergraduates are faced with various choices. Young women engaging in early detection screening services is imperative, but studies show that several factors hamper it [15,21]. A global estimate of 500,000 diagnoses of cervical cancer cases are reported each year, and 250,000 women die from cervical cancer [22]. This knowledge and utilization of seeking health care among women with cervical cancer limits treatment options, hence low survival estimates: 60% of patients die within the first year after diagnosis and about 80% die within the first 2 years [23]. In

spite of this, there is still a paucity of information on the knowledge and uptake of these services among female undergraduates in Nigerian universities. Therefore, this research will provide insight into the various factors influencing the knowledge of female undergraduates and the utilization of cervical cancer screening services.

Methods

Study design and setting

A descriptive Cross-sectional Research design was used for this study on the knowledge and utilization of cervical cancer screening services among female undergraduates at Federal University of Technology Owerri.

This study included only undergraduates of academic level 200-500 level at federal university of technology Owerri who were present as at the time of the study.

This study excluded female undergraduates of academic level 200-500 level at federal university of technology Owerri who were said to be sick or were admitted at the Health center. The study excluded undergraduates of academic level 200-500 level who refused to give in their consent for the study.

Sampling size

The sample size was determined using the Taro and Yamene formula (1967) for sample size determination.

$$n = \frac{N}{1 + Ne^2}$$

$$1 + Ne^2$$

where:

n is the desired sample size

N is the population size of Female Undergraduates (10,389)

e is margin of error at 5% = (0.05)

Therefore,

$$n = 392.30362210$$

Furthermore, to account for Non Response Rate, the sample size was increased by 10% = 0.10 = 392x 0.10 = 39.2 ≈ 40

$$n = 392 + 40 = 432$$

Sampling technique

A probability based multi-stage sampling procedure was employed to draw samples for the study

Stage 1: Selection of faculties

Simple random sampling was used to select three (3) Schools out of the nine (9) faculties in Federal University of Technology Owerri. Numbers were assigned to each faculty, folded and put in a basket, shuffled and three were picked one after the other without replacement to give every faculty an equal chance of selection.

Stage 2: Selection of departments

Simple random sampling was also used to select two (2) departments in each from the selected faculties making a total of six (6) departments. This was done via balloting to give every department an equal chance of selection.

Stage 3: Selection of levels

Students from second year and above across the selected departments were recruited for the study before utilizing a systematic random sampling to pick the respondents

Stage 4: Selection of respondents

In each of the selected departments, 72 respondents ($432/6 = 21.8 \sim 72$) were selected using systematic random sampling from the provided class list. This was done systematically to ensure that every participant has an equal chance of being selected.

Data collection

The instrument for data collection was a semi-structured questionnaire aimed to obtain relevant information on the knowledge and utilization of cervical cancer screening services among female undergraduates at Federal University of Technology Owerri. The Data tool (Questionnaire) consisted of Five (5) sections as follows:

Section A: Consisted of information on the socio demographic characteristics of female undergraduates at Federal University of Technology Owerri.

Section B: Consisted of questions on the level of knowledge of female undergraduates at Federal University of Technology Owerri towards cervical cancer screening.

Section C: Consisted of Questions on the utilization of cervical cancer screening services among female undergraduates at Federal University of Technology Owerri.

Section D: Consisted of questions on the factors influencing the utilization of cervical cancer screening services among female undergraduates at Federal University of Technology Owerri.

Reliability of the instrument was determined using test retest method. 40 copies of the questionnaire were given to some respondents outside the area of study by the researcher. This area for reliability testing was among female undergraduates at Imo state university. This area shared similar characteristics with the Federal University of Technology Owerri. Chrombach alpha test was used to test for the reliability of the questionnaire and a reliability coefficient of 0.81 was obtained. Data was obtained with the aid of Two (2) field assistants who were hired and trained to aid the researcher in the data collection process.

Data analysis

The Statistical Package for the Social Sciences (SPSS) version 20 was used in the analysis of the data gotten from the study. Results were expressed in percentages, frequencies, tables and charts (Descriptive Statistics). Chi Square Test was used to ascertain the association stated in the hypothesis ($p = 0.05$).

Ethical consideration

A letter of introduction and ethical clearance was obtained from the Department of Public Health Ethical clearance committee in Federal University of Technology Owerri (FUTO) before the research was conducted. The purpose of the research was explained to each respondent and verbal informed consent was obtained from them before inclusion into the study. Also, anonymity of the respondents was assured and ensured. The confidentiality of the information they give was also maintained.

Results

Socio demographic characteristics of the female undergraduates

Table 1 below revealed that 46.3% (173) of the respondents aged 15-24, 30.1% (113) were 25-34 years of age, 14.5% (55) were aged 35-44 years, 1.62% (6) were between 45-49 years of age and none of the respondents were above 50 years of age. 68.9% (258)

Table 1: Socio demographic characteristics of the female undergraduates.

Characteristics	Frequency (n = 374)	Percentage (%)
Age		
15-24	173	46.3
25-34	113	30.1
35-44	55	14.5
45-49	6	1.62
50 and Above	00	0
Total	374	100
Ethnicity		
Igbo	258	68.9
Hausa/Fulani	4	1.0
Yoruba	39	10.5
Others	73	19.6
Total	374	100
Religion		
Christianity	182	48.5
Muslim	61	16.3
Traditional	20	5.2
Others	112	29.9
Total	374	100
Academic level		
100L	50	13.4
200L	79	21.2
300L	91	24.2
400L	82	21.9
500L	72	19.2
Total	374	100
Parents/care givers educational qualification		
No formal education	15	4.0
Primary	74	19.8
Secondary	99	26.5
Tertiary	104	27.8
Others	82	21.8
Total	374	100
Occupation of parents/Caregiver		
Artisan e.g Carpenter, Barber, Tailor, Driver	23	6.1
Civil servant e.g Teacher	75	20.1
Self-employed e.g Trader, Photographer	66	17.5
Unemployed	27	7.2
Professionals e.g. Doctor, Nurse,	53	14.1
Others	131	34.9
Total	374	100
Who do you live with at home?		
Parents	177	47.2
Family friends	134	35.8
Myself	63	16.8
Total	374	100
Where do you reside in school?		
Off campus	294	78.6
School Hostel	80	21.4
Total	374	100
Do you have a health care plan at any health facility?		
Yes	240	64.1
No	134	35.9
Total	374	100

of the respondents were of Igbo ethnic group, 19.6% (73) included ethnicity not listed but label 'others', 10.5% (39) were Yoruba, and 1.0% (4) Hausa. 48.5% (182) of the respondents were Christians, 29.9% (112) of other religions not listed, 16.3% (61) were Muslims, and 5.2% (20) were Traditional. Concerning the academic levels of the participants, 24.2% (91) reported '300 l', 21.9% (82) 400 l, 21.2% (79) 200 l, 19.2% (72) 500 l, and 13.4% (50) 100 l. 26.5% (99) of the female undergraduates reported their parents/care givers had attained secondary education levels, 27.8% (104) tertiary, 21.8% (82) 'others', 19.8% (74) attained primary level of education, and 4.0% (15) of the respondents reported their parents had no formal education. 34.9% (131) of the undergraduate females reported 'others' when asked concerning the occupation of their parents/care givers, 20.1% (75) civil servants, 17.5% (66) of the respondents had guardians/parents who were self-employed, 14.1% (53) Professionals, 7.2% (27) unemployed, and 6.1% (23) Artisans. 47.2% (177) of the respondents reportedly lived with their parents at home, 35.8% (134) with family friends, and 16.8% (63) lived

alone. While 78.6% (294) of the respondents resided off campus, 21.4% (80) lived in the school hostel. 64.1% (240) of the participants affirmed they had a healthcare plan at a health facility, while 35.9% (134) did not.

Knowledge of cervical cancer screening among female undergraduates

Demonstrated in table 2, majority of the respondents 85.8% (321) had heard about cervical cancer screening, while 14.2% (53) denied. For example (Figure 1), 25.4% (82) listed 'social media' as their source of information on cervical cancer screening, 19.3% (62) said "health practitioners", 19.2% (61) listed 'other' sources, 12.4% (40) reported 'school', 12.0% (38) said "parents/family", 10.1% (32) reported TV/Radio programs, and 1.6% (5) said "Newspaper/Magazines". 53.0% (198) of the female undergraduates affirmed family history of cervical cancer is a risk for cervical cancer, while 47.0% (176) said "No". 58.0% (217) also accepted cervical cancer is diagnosed with Pap smear, however 42.0% (157) did not agree. 57.1% (213) obliged that digital cervix

Table 2: Knowledge of cervical cancer screening among female undergraduates.

Variables	Frequency (n = 374)	Percentage (%)
Have you heard about cervical cancer screening?		
Yes	321	85.8
No	53	14.2
Total	374	100
What is your source of information?		
School	40	12.4
Parents/Family	38	12.0
Social Media	82	25.4
TV/Radio programs	32	10.1
Health Practitioners	62	19.3
Newspaper/Magazines	5	1.6
Others	61	19.2
Total	321	100
Family history of cervical cancer is a risk for cervical cancer		
Yes	198	53.0
No	176	47.0
Total	374	100
Cervical Cancer is diagnosed with Pap smear		
Yes	217	58.0
No	157	42.0
Total	374	100
Digital cervix examination is used for cervical cancer screening		
Yes	213	57.1
No	161	42.9
Total	374	100
Cervical cancer is higher among undergraduates in developing countries		
Yes	138	36.9
No	236	63.1
Total	374	100

SOURCES OF INFORMATION ON CANCER SCREENING

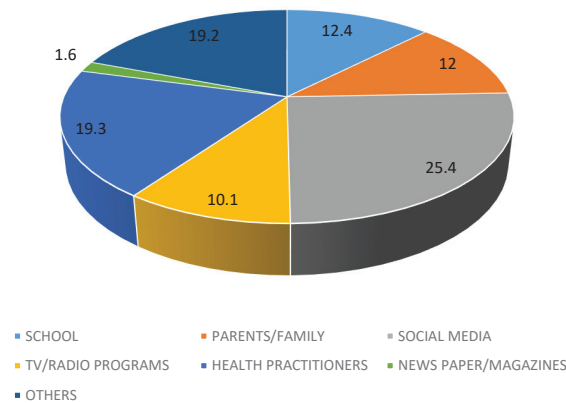


Figure 1 Sources of information on cancer screening.

examination is used for cervical cancer screening, and 42.9% (161) reported disagreement. While 36.9% (138) of the respondents affirmed that cervical cancer is higher among undergraduates in developing countries, 63.1% (236) said “No”.

Level of utilization of cervical cancer screening

From table 3, majority of the respondents 81.9% (306) affirmed they would utilize cervical cancer screening if offered a chance, while 18.0% (68) did not accept. 65.3% (244) of the respondents affirmed they had been advised by a physician to screen for cervical cancer, while 34.7% (130) replied “No”. Additionally, 43.5% (163) replied ‘Yes’ when asked if they had screened for cervical cancer prior to the time of this study, while 56.5% (211) reported they had not. 32.1% (52) of the respondents who said “Yes” reported duration to be less than a month, 26.2% (43) between 6 months to a year, 25.6% (42) said “4-6 months”, 10.0% (16) said “2-3 months”, and 6.1% (10) reported longer than a year. Reasons for the screening included responses such as, “Just decided to go for the screening to save my life” 39.3% (64), 27.6% (45) ‘Presented with symptoms’, 16.6% (27) ‘for more long life’, 12.0% (20) of the respondents reported ‘Cancer cases in the family’, and 4.4% (7) listed other purposes. 20.3% (33) of the respondents affirmed they have had to deal with abnormal screening outcome, while 79.7% (130) said “No”.

Factors that influences the utilization of cervical cancer screening services

From table 4, 33.95% (127) opined “distance to

facility”, 20.06% (75) of the respondents reported possible factors influencing utility of cervical cancer screening to be ‘financial constraints’, 19.69% (74) ethnic factors, 19.78% (74) reported lack of information, and 6.53% (24) reported religious factors.

Association between socio-demographic factors and level of knowledge of respondents towards cervical cancer screening services

Table 5 showed the results for the test of a statistically significant association between Socio-demographic characteristics of female undergraduates and level of knowledge of respondents towards cervical cancer screening in Federal University of Technology, Imo State, Nigeria (Figure 2). There was a statistically significant association between age of female undergraduates and level of knowledge of respondents towards cervical cancer screening at FUTO ($p = 0.0035$). Given the association between academic level of female undergraduates and level of knowledge of respondents towards cervical cancer screening among female undergraduates in the study population, there was a significant relationship ($p = 0.0023$). On the hypothesis between parent’s educational qualification and level of knowledge of respondents towards cervical cancer screening among female undergraduates in primal population, there was no statistically significant association ($p = 0.1686$). Given the association between place of residence of female undergraduates and level of knowledge of respondents towards cervical cancer screening in the study population, there was no statistically significant association ($p = 0.920$).

Table 3: Level of utilization of cervical cancer screening.

Variable	Frequency (n = 374)	Percentage (%)
Would you utilize cervical cancer screening if offered a chance?		
Yes	306	81.9
No	68	18.0
Total	374	100
Have any physician advised you to screen for cervical cancer before?		
Yes	244	65.3
No	130	34.7
Total	374	100
Have you screened for cervical cancer before?		
Yes	163	43.5
No	211	56.5
Total	374	100
If YES when was that?		
Less than a month	52	32.1
2-3 months	16	10.0
4-6 months	42	25.6
6 months to a year	43	26.2
longer than a year	10	6.1
Total	163	100
What was your reason for the screening?		
Presented with symptoms	45	27.6
Cancer cases in the family	20	12.0
For more long life	27	16.6
Just decided to go for the screening to save my life	64	39.3
Others	7	4.4
Total	163	100
Have you ever had abnormal cervical cancer screening result before?		
Yes	33	20.3
No	130	79.7
Total	163	100

Table 4: Factors that influences the utilization of cervical cancer screening services.

Variable	Frequency (n = 374)	Percentage (%)
What are the possible factors influencing your utility of cervical cancer screening?		
Financial Constraints	75	20.06
Distance to facility	127	33.95
Lack of Information	74	19.78
Religious Factors	24	6.53
Ethnic factors	74	19.69

Table 5: Association between the socio demographic factors and level of knowledge of respondents towards cervical cancer screening among female undergraduates.

Socio Demographics	Level of Knowledge of CCSS		X2	p-value	Decision
	Yes (%)	No (%)			
Age	84.8%	15.2%	12	0.0035	S
Academic Level	73.7%	26.3%	2.0	0.0023	S
Parents Educational Qualification	50.7%	49.3%	3.332	0.1686	NS
Place of Residence	55.8%	44.2%	8.57	0.920	NS
Healthcare Plan	70.1%	29.9%	17	0.0327	S

RELATIONSHIP BETWEEN SOCIO-DEMOGRAPHICS AND LEVEL OF KNOWLEDGE OF CCS

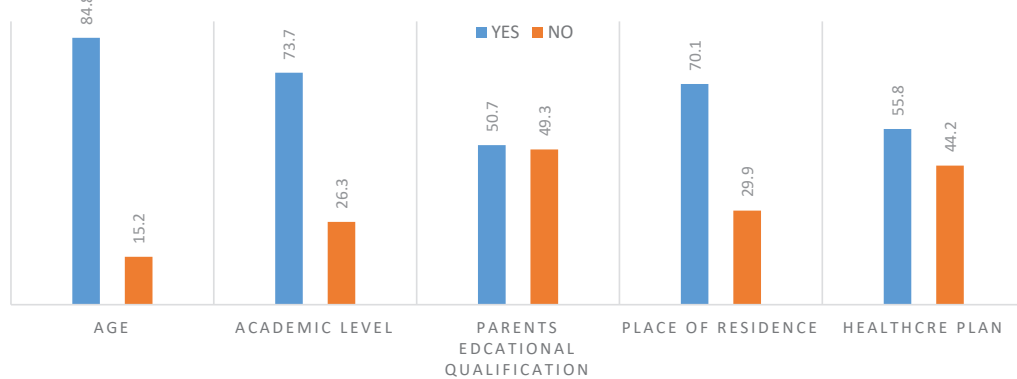


Figure 2 Relationship between socio-demographics and level of knowledge of CCS.

Finally, there was a statistically significant association between healthcare plan and level of knowledge of respondents towards cervical cancer screening in the study population ($p = 0.0327$).

Association between Level of knowledge towards cervical cancer screening services and utilization of cervical cancer screening services

Table 6 showed the results for the test of a statistically significant association between knowledge of cervical cancer screening services and utilization of cervical cancer screening services. There was a statistically significant association between good knowledge and utilization of cervical cancer screening services among female undergraduates ($p = 0.00532$)

Discussion

Based on the findings of this study on the sociodemographic characteristics of the respondents, it was revealed that 46.3% of the female undergraduates were in the age range of 15-24 years. This finding is consistent with a statement in a publication by Dozie UW, et al. [2] that female undergraduates in a cervical cancer survey conducted

among participants in Lagos had a mean age of 20 years. Further findings of the study showed that the respondents' majority were Christians (48.5%) and of Igbo origin (68.9%). This could be due to the fact that the study was conducted in the south-eastern part of Nigeria, which is predominated by people of Igbo and Christian origin. Close to three-quarters of the female undergraduates in the study affirmed they had a healthcare plan at a health facility (64.1%). This finding is similar to a study conducted among female undergraduates in Lagos. 65% of the female undergraduates showed they registered a healthcare plan in facilities of interest. *Gitonga E, et al. [24]* suggested similar figures among medical personnel in an Ondo study by *Bruni L, et al. [7]*.

Findings from this study were based on the level of knowledge about cervical cancer screening among female undergraduates at FUTO. 'Yes' responses received were 85.8% and 14.2% negative. This corroborates previous findings on the knowledge of cervical cancer screening. In the study, 25.4% of the female undergraduates listed 'social media' as their source of information on cervical cancer screening. This could be due to several media campaigns and awareness about cervical cancer. Additionally, 53.0%

Table 6: Association between level of knowledge towards cervical cancer screening services and utilization of cervical cancer screening services.

Utilization of CCSS	Level of Knowledge of CCSS		X ²	p-value	Decision
	Good Knowledge	Poor Knowledge			
Yes	86.1%	13.9%	12.41	0.00532	Sig.
No	13.9%	86.1%			

CCSS*: Cervical Cancer Screening Services; Sig: Significant

of the respondents correctly affirmed that a family history of cervical cancer is a risk for cervical cancer screening strategies. This is, however, in contrast with a study by Mlange R, et al. [25] conducted in Uganda. From this study, it was revealed that 58.0% of accepted cervical cancer is diagnosed with a pap smear. The efficacy of HPV vaccines in preventing cervical cancer has been highlighted in numerous studies, including Dozie UW, et al. [2] work, which highlights factors contributing to health-seeking delays in cervical cancer screening. Furthermore, Bekele HT, et al. [3] publications provide global estimates of cancer incidence, mortality, and prevalence, emphasising the global impact of HPV-related cancers, including cervical cancer. A publication by Dhendup J, et al. [15] revealed figures that demonstrated otherwise. Further investigation showed that 42.0% did not agree. This could be due to a lack of formal knowledge about cervical cancer screening. The female undergraduates also agreed that digital cervix examination is used for cervical cancer screening (57.1%), while 63.1% of the respondents refused that cervical cancer is more prevalent among undergraduates in developing countries. A survey conducted in Anambra is consistent with this observation by Tangjitgamol S, et al. [26].

The majority of the respondents, 81.9%, affirmed they would utilize cervical cancer screening if offered a chance, and 65.3% of the female undergraduates had been well-advised by a physician to screen for cervical cancer. The high positive turnout could be owed to medical practitioners formally and informally sensitizing patients to the importance of cervical cancer screening. Although 43.5% had been screened for cervical cancer prior to the time of this study, further findings revealed that 56.5% had not. This finding could be due to several factors, such as 'distance to facility' (33.9%), financial constraints (20.0%), and ethnic factors (19.6%). A previous study by Tawiah A, et al. [8] suggested undergraduates did not undergo cervical cancer screening because 'they lacked time' (25.7%), followed by 'lack of confidence in the procedure' (33.2%).

This study revealed that 32.1% of the female undergraduates had last been screened in less than a month. This also expresses good knowledge of cervical cancer screenings among the respondents. The findings of the study further revealed that 39.3% of the female undergraduates took cervical cancer screenings 'just to save' their lives. This goes in line with a study by Dykens JA, et al. [12] on the level of knowledge of respondents towards cervical cancer

screenings. This could be due to a fear of the terminal effects of uncontrolled cancer.

Another study by NCI (2014) corroborates this finding that 16.6% of undergraduates who underwent cervical cancer screenings did it because they wanted to 'stay alive longer'. The results of this study on the association between socio-demographic characteristics and respondents' level of knowledge about cervical cancer screening among female undergraduates in FUTO revealed that age is significantly associated with respondents' level of knowledge about cervical cancer screening among female undergraduates ($p = 0.0035$). In comparison to younger undergraduates, older age groups indicated superior knowledge of cervical cancer screening. This is consistent with a study by Behnamfar F, et al. [27], which revealed that respondents' age was related to their level of knowledge of cervical cancer screening ($p = 0.0041$). Further research into the study revealed that respondents' academic level is also substantially connected with their knowledge of cervical cancer screening ($p = 0.0023$). This contradicts a report issued by Bruni L, et al. [28], which found no meaningful link. This suggests that as students' academic levels advanced, so did their understanding of cervical cancer screening. In comparison to 100 students, 500 students explained a greater comprehension of CCS. This could be due to increased access to information as a result of years of research. Also, according to the findings of a study among female undergraduates in Imo, there was no significant relationship between respondents' parents' educational qualifications and their degree of knowledge about cervical cancer screening among female undergraduates in the study group ($p = 0.1686$). The study found that even though some respondents' parents or guardians had minimal formal education, they still had a strong understanding of CCS. Mlange R, et al. [25] back up this claim in their research. There was no significant relationship between female undergraduates' place of residence and their level of knowledge of cervical cancer screening ($p = 0.920$). This is in line with a prior study conducted by... This indicates that undergraduates' living quarters did not improve their ability to understand CSS. This study found a link between having a healthcare plan in a healthcare facility and having a high degree of knowledge about cervical cancer screening ($p = 0.0327$). This is supported by a previous study by Mwaka AD, et al. [29]. Findings of this study showed an association between knowledge of cervical cancer screening services and utilisation of cervical cancer screening services ($p = 0.00532$). This suggests that well-informed female students understand the importance and are more

likely to seek cervical cancer screening than those who were uninformed. This is supported by a study by Saghari S, et al. [30].

Conclusion and Recommendation

Age, academic level, and healthcare plan were all associated with the level of knowledge of female students towards cervical cancer screening in this study. The findings of this study revealed that while many female undergraduates had a good understanding of cervical cancer screening, this did not translate into a propensity to utilize screening services. This study underlines the need for the state health system to address perceived hurdles and common misconceptions, promote campaigns, and develop health policies to encourage female undergraduates in Imo State to undergo cervical cancer screening. The study recommends the following:

- Female undergraduates must have a thorough understanding of cervical cancer and how to prevent it.
- Accessibility to screening facilities must be improved.
- Awareness campaigns must provide accurate information so that female undergraduates can make informed choices.
- If cervical cancer is discovered, the importance and effectiveness of screening and treatment must be emphasized. As a result, information is critical, but it must be supplemented with prescriptive information on how to take preventative action.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent to publish

Not applicable.

Availability of data and materials

The data set from the study are available to the corresponding author upon request.

Competing interests

Authors have declared that they have no competing interests.

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