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Knowledge, Perception and Factors Influencing the Risk of Cervical Cancer among Lead City University Female Students in Ibadan, Oyo State

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Abstract: Introduction: Cervical carcinoma is a significant global health concern, especially in developing nations, where it ranks as the second most common cancer after breast cancer. Despite its prevalence, early detection through screening remains pivotal in curbing its impact. This study focuses on the awareness and perceptions of cervical cancer among female students at Lead-city University, Ibadan, highlighting the need for targeted interventions, especially among high-risk groups.

Methods: A descriptive cross-sectional study was conducted among female students residing in the hostels of Lead City University, Ibadan. A multistage sampling technique was employed, involving the systematic selection of rooms and occupants for surveys. Data were collected using a semi-structured questionnaire, covering socio-demographic characteristics, cervical cancer knowledge, perception, risk factors, and preventive practices. Chi-square tests and descriptive statistics were utilized for data analysis.

Results: The study revealed a predominant presence of adolescents, with more than half aged 25 or younger. While general knowledge levels varied, a significant proportion exhibited accurate

knowledge about cervical cancer, emphasizing the importance of pap smear tests and early detection. Positive perceptions were prevalent, especially among single individuals. Risk factors such as early sexual debut and multiple partners were notable concerns, underlining the vulnerability of this demographic.

Conclusion: Accurate knowledge and perceptions are pivotal in shaping preventive practices. The study underscores the urgency for targeted educational initiatives, dispelling misconceptions, and promoting early detection methods like pap smear tests. Collaborative efforts involving healthcare providers, educational institutions, and policymakers are vital in combating cervical cancer among university students.

Recommendations: Tailored interventions focusing on accurate information dissemination, emphasizing early detection methods, should be implemented within university campuses. Mass media campaigns and educational programs can significantly enhance awareness. Collaborative efforts should be fostered between healthcare providers, educational institutions, and policymakers to ensure effective cervical cancer prevention strategies.

Keywords: Cervical cancer, awareness, perceptions, university students.

BACKGROUND

Cervical carcinoma is a grave concern on a global scale, casting a shadow particularly over developing nations where it stands as the second most prevalent cancer after breast cancer (Maddong et al, 2003). The challenge is exacerbated in these regions, where not only is the absolute number of cases high, but the age at diagnosis is notably lower, and survival rates are distressingly low, underscoring the urgent need for targeted interventions (Jimoh et al, 2004). This predicament is further complicated by the decline in deaths from infectious causes and the evolving societal permissiveness, both of which have contributed to the escalating incidence of cervical cancer (Mandelblatt et al, 2004). The statistics are grim, with approximately 25 million people globally living with this disease, and the potential for a 50% increase in new cases to 15 million by 2020, as indicated in the World Global Cancer Report (WHO, 2007).

Developing nations, especially those in Central and South America, the Caribbean, Sub-Saharan Africa, and parts of Asia, bear the brunt of this burden, with incidence rates soaring above 30 per 100,000 women, in stark contrast to the relatively lower rates in North America and Europe, where the figures seldom exceed 10 per 100,000 women (Ferley et al, 2005). Disturbingly high incidence rates are reported in individual countries, with Tanzania standing at 69 per 100,000, Bolivia at 55 per 100,000, and Papua New Guinea at 40 per 100,000, underlining the severity of the issue (Ferley et al, 2005). Moreover, it's not just the diagnosed cases; an estimated 1.4 million women are living with cervical cancer globally, and an additional 7 million may harbor precancerous conditions that urgently need identification and treatment (Ferley et al, 2005). The situation is most dire in Sub-Saharan Africa, especially in Nigeria, where the estimated incidence rate stands at 25 per 100,000 women, echoing equally alarming rates reported in other African countries such as Uganda, Malawi, Ethiopia, and Kenya (WHO, 2005).

In this disconcerting scenario, early detection through screening emerges as the linchpin for controlling cervical cancer. The transition time from premalignant lesions to full-blown cervical cancer provides a window of opportunity, especially in secondary healthcare centers, where early detection can lead to almost complete cures. However, the effectiveness of this approach hinges on the level of screening uptake. Disturbingly, studies reveal alarmingly low levels of awareness and uptake of cervical cancer screening, reflecting a significant gap in public health initiatives (Chukwuali et al, 2003; Ezen, 2007; Onajole et al, 2004). The gravity of this situation is further magnified in educational institutions. Institutions of higher learning, such as polytechnics in Nigeria, house a cohort of vulnerable young women. The period of adolescence and early adulthood, marked by newfound freedom and exploration, also brings increased vulnerability to

risky sexual behaviors. Studies have shown a strong association between HPV infection, early sexual debut, and promiscuity during this phase, making this demographic particularly susceptible to cervical cancer (WHO, 2004; Ayinde et al, 2003).

Lead City University in Ibadan, Oyo State, embodies this challenge. With students as young as 16 years old, this institution mirrors the broader vulnerability faced by young women in educational settings. Despite sporadic health promotion efforts, there is a discernible lack of systematic and coordinated initiatives targeting this demographic. Exploring the knowledge, perception, and socio-demographic characteristics influencing cervical cancer risks among Lead City students is not just an academic exercise; it is a critical step toward shaping targeted interventions and raising awareness among these young women. By understanding their unique challenges and barriers, public health interventions can be tailored to bridge the existing gaps, ensuring that knowledge translates into action, ultimately preventing and controlling cervical cancer in this vulnerable demographic.

Materials and Methods

Study Area: Lead City University, Ibadan (LCU) is a prestigious private institution established in 2005 and officially approved by the Federal Government of Nigeria. It operates under the accreditation of the National University Commission (NUC) and has graduated over 12,000 students since its inception. Situated in the tollgate area of Ibadan, the university provides a conducive academic environment for its diverse student body.

LCU offers a wide range of programs catering to both young adolescents and adult working professionals. These programs are delivered through specialized faculties, namely Social Sciences & Entrepreneurial Studies, Information Technology & Applied Sciences, and Law. The university's curriculum is designed to meet the educational needs of students from various backgrounds and interests.

To accommodate its students, LCU provides more than ten hostels within the campus. These hostels are designed to offer a comfortable living space for both male and female students. Notably, the university places significant importance on the well-being and safety of its female students, ensuring suitable accommodations for them within the campus premises.

Study Design: A descriptive cross-sectional study was conducted among female students at Lead City University, Ibadan.

Study Population: The participants comprised female students residing within the halls of residence at the Lead City University.

Inclusion Criteria: The study included all female students residing within the main campus of Lead City University, Ibadan. Male students were excluded from this study.

Sampling Method: 400 female students were recruited using a multistage sampling techniques.

Data Collection, Management and Analysis: A semi-structured questionnaire was used, comprising sections on socio-demographic characteristics, knowledge of cervical cancer, perception, risk factors, and preventive practices. Four trained female research assistants conducted data collection over a two-weeks period. Surveys were conducted in the evening between 4-7 pm, after students had finished their classes. Collected data were entered into a computer and analyzed using the Statistical Package for Social Science (SPSS) Version 21. Data were presented through charts and tables, and knowledge and perception scores were calculated based on mean scores. Respondents scoring above the mean were categorized as having good knowledge/perception. Chi-square (X^2) tests were used for inferential statistics, with a significance level set at 5%.

Ethical Clearance: Ethical clearance was obtained from the research and ethical committee of Lead City University Ibadan authority. Informed written consent was obtained from each participant before their inclusion in the study.

RESULTS

Table 1 shows the sociodemographic characteristics of the respondents. In terms of age, 44.8% were between 16-20 years old, 25.0% were aged 21-25, 3.5% were in the 26-30 age group, and 26.6% were older than 30, with a mean age of 24.2 ± 3.7 years. Regarding marital status, 87.3% were single, and 12.75% were married. In terms of ethnicity, 86.5% were Yoruba, 9.0% were Igbo, and 4.5% belonged to other ethnic groups. Furthermore, 83.0% of respondents reported their parents as responsible for education, 4.5% mentioned relatives, 8.0% cited husbands, and 4.5% indicated themselves or friends. Lastly, in the context of faculties, 19.6% were from FFMS, 65.0% from FBCS, 3.5% from Environmental Sciences, 5.6% from Sciences, and 6.3% from Engineering.

TABLE 1: Sociodemographic characteristics of respondents

Variable	N Percentage(%)
Age (years)	
16-20	179 44.8
21-25	100 25.0
26-30	14 3.5
>30	107 26.6
Mean 24.2 ± 3.7	
Marital status	
Single	349 87.3
Married	51 12.75
Ethnic group	
Yoruba	346 86.5
Igbo	36 9.0
Others (Hausa, Edo, Egun, Igara, Itsekiri)	18 4.5
Responsible for education	
Parent	332 83.0
Relative	18 4.5
Husband	32 8.0
Myself/friend	18 4.5
Faculty of respondents	
FFMS	78 19.6
FBCS	260 65.0
Environmental Sciences	14 3.5
Sciences	23 5.6
Engineering	25 6.3

KNOWLEDGE ABOUT CERVICAL CANCER

Table 2 below illustrates respondents' knowledge about cervical cancer, indicating that 99.8% recognized it as a life-threatening condition, 80.0% understood the connection between smoking and higher risk, and 82.0% acknowledged the risk associated with early onset of sexual intercourse. Additionally, 84.8% were aware of the link between multiple sexual partners and cervical cancer, while 75.5% recognized the connection with human papillomavirus (HPV) infection. Furthermore, 63.2% believed that virgins are protected, but only 24.8% knew that being slim reduces the chances of cervical cancer. Lastly, 37.5% were aware that women with relatives affected by cervical cancer are at higher risk, while 62.5% were not aware of this association.

Table 2: Respondents Table Knowledge of Cervical Cancer

Variable	n (%) Yes (%) No (%)	
Cervical cancer is a life threatening situation	399 (99.8)	**1 (0.3)**
Women who smoke are at higher risk.	320 (80.0%)	**80 (20.0%)**
Early age at onset of sexual intercourse can increase risk	328 (82.0)	72 (18.0)
Women who have multiple sexual partner tends to have a higher rate of cervical cancer	339 (84.8)	61(15.2)
Cervical cancer is linked to hiuman papilloma virus (HPV) infection	302 (75.5)	98 (24.5)
Women who are virgins are protected	253 (63.2)	147 (36.8)
Being slim reduces the chances of cervical cancer	147 (24.8)	293 (65.4)
Women with relatives with cervical cancer are at higher risk	150 (37.5)	250 (62.5)

KNOWLEDGE SCORE

The mean knowledge score is 5.62+1.5. The table indicates that 39.7% of the respondents had poor knowledge about cervical cancer, while 60.3% demonstrated good knowledge about cervical cancer.

Table 3: Respondents Knowledge Score

Variable	n (%)
Poor knowledge	170 (39.7)
Good knowledge	230 (60.3)

PERCEPTION OF CERVICAL CANCER

Table 4 illustrates respondents' perceptions regarding cervical cancer. A majority (51.5%) agreed that cervical cancer is a rare condition, while 40.8% were uncertain, and 7.8% disagreed. Furthermore, 96.0% believed that cancer of the cervix can be treated if detected early, with only 3.0% uncertain and 1.0% in disagreement. Additionally, 88.2% felt that screening for cervical cancer is necessary, while 13.0% were uncertain, and 1.3% disagreed. Regarding the necessity of screening related to sexual activity, 20.5% thought that not having sex for many years exempted them from screening, 34.0% were uncertain, and 45.5% disagreed. Moreover, 24.8% believed that having only one sexual partner negates the need for cervical cancer screening, 27.0% were uncertain, and 48.2% disagreed.

Table 4: Respondents Perception of cervical cancer

	n (%)		
Variable	**Agree n (%)**	**Uncertain n (%)**	**Disagree n (%)**
Cervical cancer is a rare condition	206 (51.5)	163 (40.8)	31 (7.8)
Cancer of the cervix can be treated if detected early	384 (96.0)	12 (3.0)	4 (1.0)
Screening for cancer of the cervix is necessary to detect cancer of the cervix.	353 (88.2)	52 (13.0)	5 (1.3)
If I hadn't had sex for many years I	82 (20.5)	136 (34.0)	182 (45.5)

wouldn't need cervical cancer screening.			
There is no need for cervical cancer screening if you had only one sexual partner.	99 (24.8)	108 (27.0)	193 (48.2)

PERCEPTION SCORE

The mean perception score was 6.68+1.92. Most of the female respondents had good perception of cervical cancer 247 (55.1%). This is shown in Table 6 below.

Table 6: Respondents Perception Score.

Variable	n (%)
Poor perception	150 (42.4)
Good perception	250 (55.1)

RISK OF CERVICAL CANCER

From the table below, a significant majority (66.3%) had engaged in sexual activity, with 13.0% admitting to having sex with someone other than their regular partner in the last 6 months. Additionally, a small percentage (2.5%) had a family history of cervical cancer among immediate relatives (mother or sister). Concerning other risk factors, 7.5% had experienced a sexually transmitted infection, 8.8% had undergone induced abortions, and 4.5% had smoked more than a few puffs of tobacco. Conversely, substantial proportions had not been involved in these risky behaviors, with 33.8% reporting no sexual activity, 87.0% refraining from extramarital affairs, 97.5% having no family history of cervical cancer, 92.5% avoiding sexually transmitted infections, 91.3% not having induced abortions, and 95.5% abstaining from smoking.

Table 7: Respondents risk of cervical cancer

Variable	Yes (%)	No (%)
Have you ever had sex	265 (66.3)	135 (33.8)
Have you ever had sex with other person other than your regular partner in the last 6 months.	52 (13.0)	348 (87.0)
Has any member of your immediate family (mother, sister) ever had cancer of the cervix	10 (2.5)	390 (97.5)
Have you ever had sexually transmitted infection	30 (7.5)	370 (92.5)
Have you ever had an induced abortion	35 (8.8)	365 (91.3)
Have you ever smoked more than a few puffs of tobacco	18 (4.5)	382 (95.5)

RISK SCORE

Three hundred and thirty five (74.8%) of the respondent had high risk for cervical cancer. Only 14 (3.1%) had a low risk for cervical cancer. This is shown in table 9 below.

Table 8: Respondents Risk Score

Variable	n (%)
High risk	**335 (74.8)**
Low risk	**14 (3.1)**

DEMOGRAPHIC CHARACTERISTICS BY RISK

The table below categorizes respondents into low and high-risk groups based on their marital status, knowledge, and perception of cervical cancer. In terms of marital status, 3.5% of those at low risk were single, while 96.5% of those at high risk were married, with a chi-square value of 2.057 and a p-value of 0.152, indicating no statistically significant difference in marital status between the two risk groups. Regarding knowledge levels, 4.9% of those at low risk had poor knowledge, while 95.1% had good knowledge. Among those at high risk, 3.4% had poor knowledge, and 96.6% had good knowledge. The chi-square value was 0.524, and the p-value was 0.469, suggesting no significant association between knowledge levels and risk. In terms of perception, 1.4% of those at low risk had poor perception, while 98.6% had good perception. For those at high risk, 5.6% had poor perception, and 94.4% had good perception. The chi-square value was 3.913, with a p-value of 0.048, indicating a statistically significant association between perception levels and risk, suggesting that those at high risk were more likely to have poor perception compared to those at low risk.

Table 9: Respondent demographic Characteristics and Risk Levels:

Variable	Low risk n (%)	High risk n (%)	X2	P value
Marital status				
Single **Married**	14 (3.5) 0 (0)	286(96.5) 43 (100)	2.057	0.152
Knowledge				
Poor knowledge **Good knowledge**	7 (4.9) 7 (3.4)	171 (95.1) 263 (96.6)	0.524	0.469
Perception				
Poor perception **Good perception**	2 (1.4) 11 (5.6)	188 (98.6) 236(94.4)	3.913	0.048

DISCUSSION

This study delves into the perceptions of cervical cancer and preventive practices among female students at Leadcity University, Ibadan. The demographic analysis underscores a dominant presence of adolescents, with over half of the participants aged 25 years or younger, aligning with findings in Arowojolu et al.'s comparable study.

In terms of cervical cancer knowledge, more than half of the students exhibited a strong understanding, recognizing it as a common disease and understanding the importance of pap smear tests for early detection and potential cure. In contrast, Nganwai et al.'s study in Chile highlighted limited awareness, with only about one-third of women in the outpatient department comprehending the purpose of pap smear tests. Similarly, studies in Greece and Finland by Akujobi et al. revealed that less than half of the respondents were acquainted with pap smear tests. While general knowledge levels were comparable, the study in Finland demonstrated significantly higher awareness. Moreover, studies like Akujobi et al.'s in South Eastern Nigeria reported elevated cervical cancer knowledge among female tertiary institution students. Conversely, research by Jasmen et al. in the United States revealed that less than one-tenth of respondents were aware of the association between HPV and cervical cancer, mirroring this study's findings.

This research also unveiled that more than half of the respondents held positive perceptions about cervical cancer, especially among the single individuals. About two-thirds of the HND II students exhibited a good perception of cervical cancer. However, Paraskevopoulou et al. in Greece reported a poor perception of cervical cancer among their respondents, particularly among university students and nurses. Similarly, a study by Gharoro et al. showed a comparable level of perception to the one reported in this study. Tan et al. in Malaysia reported a higher

percentage of respondents with a positive perception of cervical cancer compared to this study. Mass media and education were the primary sources of information for the respondents, aligning with the findings reported by Gerend et al. in Malaysia among women aged 18 to 26 years. Other common sources included posters, pamphlets on campus, family, and friends. Consequently, programs on university campuses and public initiatives can be highly effective in educating women about preventive measures for cervical cancer.

The study also highlighted the prevalence of risk factors among the undergraduate population, including early sexual debut, multiple sexual partners, low condom usage, and induced abortions, often conducted by medical personnel such as nurses. Akujobi et al.'s research in 2008 similarly noted a higher proportion of sexually active female respondents. Although no significant differences were found in marital status and knowledge levels between low and high-risk groups concerning cervical cancer, a significant correlation in perception levels was identified. Individuals at high risk were more likely to harbor negative perceptions. These observations provide valuable insights for focused interventions aimed at enhancing awareness and perceptions among high-risk populations.

Conclusion and Recommendation

The study conducted among female students at Leadcity University, Ibadan, has shed light on crucial aspects of cervical cancer awareness and perceptions. The study underscores the vital role of accurate knowledge and perceptions in shaping preventive practices. Addressing misconceptions and enhancing awareness about cervical cancer and its preventive measures, especially among high-risk groups, is essential. To achieve this, tailored educational initiatives focusing on accurate information dissemination are necessary. Emphasizing early detection methods such as pap smear tests in university-specific interventions is crucial. Utilizing mass media and educational programs within university campuses can significantly amplify awareness and promote healthy practices among young women. Collaborative efforts involving healthcare providers, educational institutions, and policymakers are pivotal in effectively combating cervical cancer within the student population.

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