

Awareness of Cervical Cancer among Public Secondary School Students in Epe Metropolis: Librarians' Inquisition

By

Rhoda Osebhaiemen Isiwele-Ishola CLN, MNLA

Okesanya Roseline Omoadoni CLN, MNLA

and

Bolanle Clifford Ishola CLN, MNLA

Abstract

The aim of the study was to determine librarians' inquisition on awareness of Cervical Cancer among public secondary school students in Epe Metropolis. Descriptive research design of the case study type was adopted in this study. The population of study comprises of all twenty seven (27) senior secondary schools in Epe metropolis. Random sampling technique was used to select all final year female senior secondary students (SS3) in 14(fourteen) senior secondary schools out of the population of twenty seven (27) senior secondary schools in Epe metropolis. Out of the 850 copies of questionnaires distributed, 831 were retrieved and found usable for analysis, giving a 97% percent response rate. Using the Statistical Package for Social Science (SPSS Version 23), data collected were then analyzed using descriptive statistics of mean, standard deviation, frequency count and percentage, in cognizance of the objectives of the research. The result was given along with the data which aid clarity of results and drawing of conclusion based on the information gathered. The study revealed that majority of the respondents had knowledge of cervical cancer but only 48.3% of the students' are aware of library and information services supportive of cervical cancer awareness and 49.8% respondents agreed that there is low level of students' awareness of information sources on cervical cancer. The study concludes that all and sundry should join in this campaign to ensure adequate information cum awareness for woman and more importantly girls.

Keywords: Cervical Cancer; Awareness; Public Secondary School; Students; Librarians; Epe Metropolis-Lagos, Nigeria

Introduction

Cancer is a generic term for a large group of diseases that can affect any part of the body. Other terms used are malignant tumors and neoplasm. One defining feature of cancer is the rapid creation of abnormal cells that grow beyond their usual boundaries, and which can then invade adjoining tissues and spread to other organs, the latter process is referred to as metastasizing. Metastases are a major cause of death from cancer. The most common cancers in the African Region

are cancers of the cervix, breast, liver and prostate as well as Kaposi's sarcoma and non-Hodgkin's lymphoma. (National Cancer Institute Dictionary of Cancer terms, 2020)

The rise in the number of cases of cancer is due to ageing populations and the increasing adoption of risky behaviors such as consumption of unhealthy diets, lack of physical exercise, and harmful use of alcohol, sexual recklessness and tobacco use. In the African Region, infections due to human papillomavirus and hepatitis B and C viruses significantly contribute to the burden of the top two cancers, namely cervical and liver cancer respectively.

January every year is designated as **Cervical Health Awareness Month**. Globally, one woman dies of cervical cancer every two minutes. Yearly, an average of 530,000 new cases with 264,000 deaths are recorded worldwide, More than 13,000 women in the United States are diagnosed with invasive cervical cancer each year. 85% of deaths from cervical cancer occur in developing countries. Cervical cancer is the second most common cancer in Nigerian women. In 2012, Nigeria recorded 14,089 new cases with 8240 deaths, but the disease is preventable with vaccination and appropriate screening. The incidence of cervical cancer has declined steadily in the United States over the past few decades, whereas cervical cancer rates continue to rise in many developing countries. The substantial decline in incidence and mortality in Western countries is due to vaccination, well developed papanicolaou (pap) smear screening programmes facilitated by awareness and effective information programmes (World Health Organization , National cervical cancer coalition 2020 Society of Gynaecology and Obstetrics of Nigeria , and Boardman, Matthews, Carter, Huh, 2019).

The incidence and problems associated with sexually transmitted diseases (STDs) are of great concern too, especially among secondary school students and young adults. For adolescent girls aged 15-20 years old, the most effective preventive method against cervical cancer would be

the primary prevention by the HPV vaccination. (Villa et al., 2005). It is important to assess the knowledge and views of the students on the awareness of cervical cancer in order to develop appropriate educational and awareness programs targeting young secondary school girls.

Research Questions

1. What is the level of students' awareness of cervical cancer
2. What is the level of students' awareness of library and information services supportive of cervical cancer awareness
3. What is the level of students' awareness of information sources on cervical cancer
4. What is the level of students' awareness of the danger of having multiple sex partners
5. What is the level of students' awareness of programmes to mitigate or curtail cervical cancer prevalence
6. What are the type of Information sources available to Students on cervical cancer
7. What are the factors militating against students' access to useful information resources on cervical cancer

Literature Review

National Cancer Institute Dictionary of Cancer terms (2020) opined that cancer is a term for diseases in which abnormal cells divide without control and can invade nearby tissues. Centre for Disease Control (2020) asserted that cancer is always named for the part of the body where it starts. Cervical cancer begins in the cervix – the lower narrow end of the uterus. Cervical cancer is preventable through primary prevention modalities and is curable if detected early. Unfortunately, majority of cases in Nigeria present at late stages. Society of Gynaecology and Obstetrics of Nigeria (2018) submitted that prevention and treatment of cervical cancer in Nigeria is crippled by lack of awareness and knowledge of the disease, suboptimal public investment and competing health needs.

There is no adequate database for cervical cancer in Nigeria, no organized screening programmes, and National Health Insurance Scheme has limited coverage for cancer treatment.

World Health Organization (2020) stated that almost all cervical cancer cases are linked to infection with Human Papilloma Virus (HPV) – an extremely common sexually transmitted virus. While the Centre for Disease Control (2020) further opined that the risk of HPV infection is increased by factors such as early coitache – sex at a young age, multiple sexual partners, promiscuous male partners, history of sexually transmitted infections, multiparity and prolonged use of birth control pills. HIV infection causes a fivefold increase in risk of cervical cancer. Lucas and Gilles (2003) submitted that prevention of diseases is done at three levels which are: primary, secondary and tertiary levels. Primary prevention targets the entire population with the aim to prevent onset of illnesses through education, immunization, sanitation, nutrition, etc. secondary prevention targets high risk groups and aims at early diagnosis and treatment to prevent further damage. Tertiary prevention targets individuals who are already sick. The aim is to reduce damage and restore function through clinical care and rehabilitation.

While World Health Organization (2020) concluded that vaccination against HPV in girls 9-13 years of age combined with regular screening in women 30 years and over for precancerous lesions, followed by adequate treatment are key tools to prevent cervical cancer. Society of Gynaecology and Obstetrics of Nigeria (2018) opined that HPV vaccines offer partial protection against cervical cancer. Therefore, vaccinated women should still undergo screening. Centre for Disease Control (2020) submitted that screening test is used to look for a disease before there are any symptoms.

Laurie Elit, and Hamilton et al (2011) opined that in developing countries, the proportion of women who are screened but do not return for treatment is reported to be as high as 80%, which

interferes with effectiveness of screening programs. These women need options that are safe, effective, affordable, practical and sustainable. One of such is the “screen and treat” or “single visit” approach where visual inspection is followed immediately by cryotherapy for eligible women. This however is less effective for more extensive or severe lesions and such should be referred for alternative treatment. Costing the National Strategic Plan on Prevention and Control of Cervical Cancer in Nigeria (2020) stated that Nigeria currently has nine(9) comprehensive centres providing full complement pathology, radiotherapy, surgery and chemotherapy services, and the country plans to scale up to seventy-seven (77) centres by 2021. Women with invasive cancer should be referred to higher levels of care.

Methodology

This Descriptive research design of the case study type was adopted to investigate awareness of cervical cancer among public secondary school students in Epe metropolis, Lagos state, Nigeria. The population of study comprises of all twenty seven (27) senior secondary schools in Epe metropolis. The instrument for the study was a well-structured questionnaire, with sub-scales to measure the study constructs. In addition, items included in the questionnaire were self-developed. The questionnaire encompasses two sections namely, A, and B. It was presented on 4-point Likert scale. The face and content validity was used to validate the research instrument. Consequently, the instrument for the study was scrutinized by experts in medicine, librarianship and educational technology, who critically looked into the measuring items. This ensured content, construct and structural accuracy. In order to ascertain the reliability of the instrument, it was administered to a group of ten respondents from a representative outside the people used for the study. The administered instruments were analysed for reliability using Cronbach measure and a reliability coefficient on library and information services supportive= 0.77 alpha , awareness of information

sources= 0.87 alpha, awareness of the danger of having multiple sex partners= 0.88 alpha, programmes to mitigate or curtail= 0.79 alpha, Information sources available= 0.92 alpha, Information sources accessible= 0.75 alpha and cervical cancer =0.82 alpha respectively was obtained. Random sampling technique was used to select all final year female senior secondary students (SS3) in 14(fourteen) senior secondary schools out of the population of twenty seven (27) senior secondary schools in Epe metropolis. Out of the 850 copies of questionnaires distributed, while 831 were retrieved and found usable for analysis, giving a 97% percent response rate. Using the Statistical Package for Social Science (SPSS Version 23), data collected were then analyzed using descriptive statistics of mean, standard deviation, frequency count and percentage, in cognizance of the objectives of the research. The result was given along with the data which aid clarity of results and drawing of conclusion based on the information gathered.

Results

Analysis of Socio-demographic characteristic of the respondents

Table 1: Frequency Distribution of Respondents by Name of School

Name of School	Frequency	Percentage
OdoObara Senior High School	107	12.9
Epe Girls High School	94	11.3
Army Children Secondary School	92	11.1
Ogunmodede College	64	7.7
St. Patrick School	34	4.1
Lagos State Model Senior College, Igbonla	75	9.0
Epe Senior Grammar School	94	11.3
Igbooye Community Senior High School	32	3.9
Nazareth Senior College	14	1.7
Okemagba Senior secondary School	22	2.6
Pobona Senior secondary school	63	7.6
Adesowon Senior Grammar School	28	3.4
Government Technical College	30	3.6
Odomola Senior secondary school	82	9.9
Total	831	100.0

Table 1 revealed inter alia that 107 representing 12.9% of the respondents were from Odo Obara Senior secondary school and 94 of them or 11.3% were from Epe Girls senior secondary school and Epe Senior Grammar School, respectively while 14 (1.7%) of the total respondents were from Nazareth Senior College The above result implies that majority of the respondents were from OdoObara Senior Secondary School.

Table 2: Frequency Distribution of Respondents by Class level

Class level	Frequency	Percentage
SS2	0	0.0
SS3	831	100.0
Total	831	100.0

Table 2 revealed that all 831 presenting 100.0% of the respondents were from SS3 class. Therefore the above result implies that all of the respondents were from SS3 class used for the study.

Table 3: Frequency Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	0	0.0
Female	831	100.0
Total	831	100.0

Table 3 revealed that all 831 presenting 100.0% of the respondents were females. Therefore the above result implies that all of the respondents were female students used for the study.

Table 4: Frequency Distribution of Respondents by Age

Age group	Frequency	Percentage
15 years or Less	104	12.5
16 to 20 years	703	84.6
Above 20 years	24	2.9
Total	831	100.0%

Table 4 revealed the frequency

distribution according to age range of the respondents. The result showed that respondents with age range of below 15 years were 104 (12.5%) while those with age range of 16 to 20 years were 703 (84.6%) of the total respondents and respondents above 20 years were 24 (2.9%) of the total respondents. This showed that respondents with age range of 16 to 20years had the highest percentage.

Analysis of other items related to variables in the Questionnaire

RQ1: What is the level of students’ knowledge of cervical cancer

Table 5: Students' Knowledge of cervical cancer

Response	Frequency	Percentage
No	308	37.1
Yes	523	62.9
Total	831	100.0

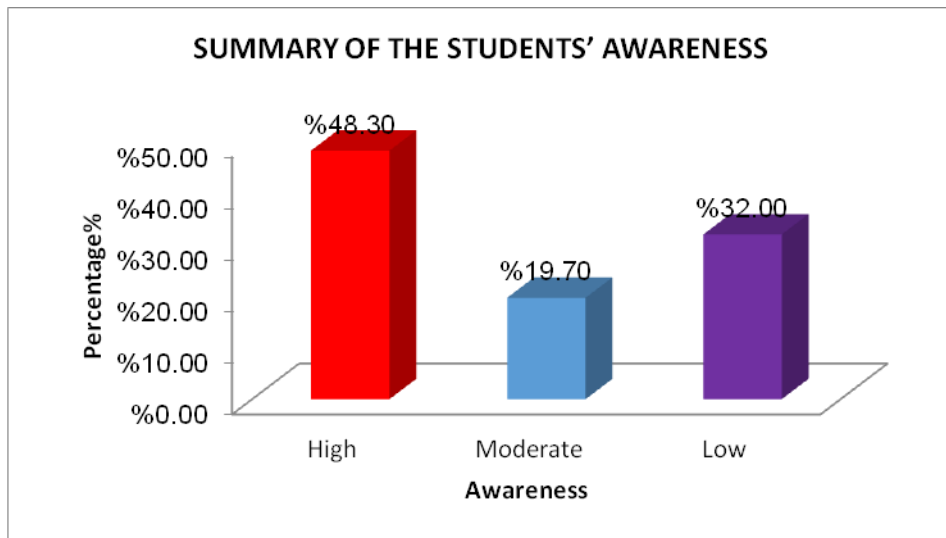
Findings in Table 5 shows that majority 523 presenting 62.9% of the respondents had Knowledge of cervical cancer, while 308 of them or 37.1% had no knowledge. Therefore the above result implies that majority of the respondents had knowledge of cervical cancer.

RQ2: What is the level of students' awareness of library and information services supportive of cervical cancer awareness?

TABLE 6: Level of Students' Awareness of Library and Information Services Supportive of Cervical Cancer Awareness

S/A	ITEMS	HA (%)	FA (%)	RA (%)	NA (%)	Mean	Std. Dev
1	Information literacy programmes	209 (25.2)	212 (25.5)	98 (11.8)	312 (37.5)	2.38	1.221
2	Provision of information sources	221 (26.6)	219 (26.4)	147 (17.7)	244 (29.4)	2.50	1.171
3	Awareness campaign	170 (20.5)	222 (26.7)	176 (21.2)	263 (31.6)	2.36	1.129
4	Selective dissemination of information	163 (19.6)	208 (25.0)	189 (22.7)	271 (32.6)	2.32	1.124
5	Reference services information provision	187 (22.5)	160 (19.3)	201 (24.2)	283 (34.1)	2.30	1.159
6	Open access publishing and repository	188 (22.6)	193 (23.2)	184 (22.1)	266 (32.0)	2.36	1.151
7	Provision of technological infrastructure	212 (25.5)	233 (28.0)	138 (16.6)	248 (29.8)	2.49	1.166
8	Capacity building	226 (27.2)	167 (20.1)	181 (21.8)	257 (30.9)	2.44	1.187
9	Current awareness services	178 (21.4)	240 (28.9)	166 (20.0)	247 (29.7)	2.42	1.126
	TOTAL	195 (23.5)	206 (24.8)	164 (19.7)	266 (32.0)		
	N=831, Weighed Average mean =2.40, Grand mean=2.39					2.40	1.159

Sources: Researcher's field-report, 2021



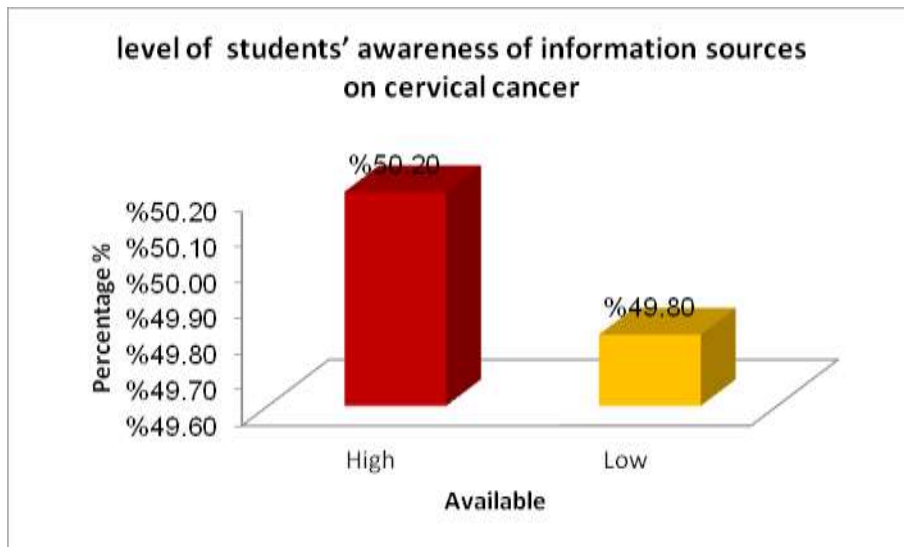
The results of findings show that 48.3% of the students' awareness of library and information services supportive of cervical cancer awareness while low were 32.0% and moderate were 19.7% respectively.

RQ3:What is the level of students' awareness of information sources on cervical cancer

TABLE 7: level of students' awareness of information sources on cervical cancer

S/A	ITEMS	Yes (%)	No (%)	Mean	Std. Dev
1	Newspapers	428 (51.5)	403 (48.5)	1.52	.500
2	Internet	297 (35.7)	534 (64.3)	1.36	.480
3	Radio	375 (45.1)	456 (54.9)	1.45	.498
4	Television	326 (39.2)	505 (60.8)	1.39	.489
5	Friends/Relatives	431 (51.9)	400 (48.1)	1.52	.500
6	Library	589 (70.9)	242 (29.1)	1.71	.455
7	Textbook	451 (54.3)	380 (45.7)	1.54	.498
8	Classroom	437 (52.6)	394 (47.4)	1.53	.500
9	Interaction	420 (50.5)	411 (49.5)	1.51	.500
	TOTAL	417(50.2)	414(49.8)		
N=831, Weighed Average mean =1.50, Grand mean=1.39				1.50	.491

Sources: Researcher's field-report, 2021



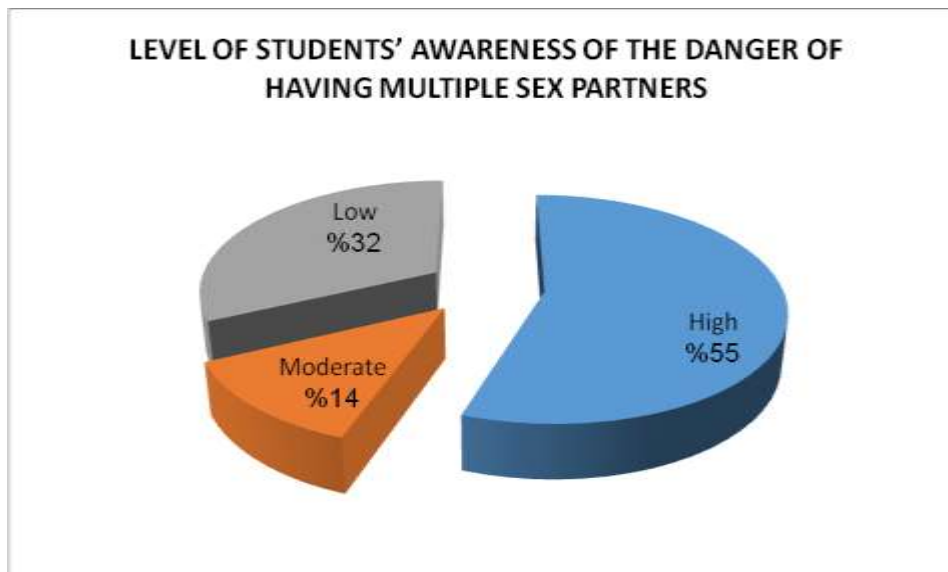
The results of findings show that 50.2% of the respondents agreed that there is high level of students' awareness of information sources on cervical cancer .Though 49.8% said low

RQ4: What is the level of students' awareness of the danger of having multiple sex partners?

TABLE 8: Level of Students' Awareness of the danger of having multiple sex partners

S/A	ITEMS	HA (%)	FA (%)	RA (%)	NA (%)	Mean	Std. Dev
1	Having sexual contacts too early can predispose to cervical cancer	446 (53.7)	129 (15.5)	96 (11.6)	160 (19.3)	3.04	1.193
2	Having multiple sex partners can predispose to cervical cancer	435 (52.3)	97 (11.7)	82 (9.9)	217 (26.1)	2.90	1.288
3	Having just one male sexual partner who has other partners can predispose to cervical cancer	338 (40.7)	172 (20.7)	70 (8.4)	251 (30.2)	2.72	1.274
4	Giving birth to many children can cause cervical cancer	182 (21.9)	171 (20.6)	103 (12.4)	375 (45.1)	2.19	1.224
5	Prolonged use of birth control pills (Medications to prevent pregnancy) can cause cervical cancer	223 (26.8)	165 (19.9)	131 (15.8)	312 (37.5)	2.36	1.233
6	HIV infection can increase the risk of cervical cancer	288 (34.7)	157 (18.9)	121 (14.6)	265 (31.9)	2.56	1.257
7	HPV infection is the main factor that predispose to cervical cancer	209 (25.2)	210 (25.3)	124 (14.9)	288 (34.7)	2.41	1.200
	TOTAL	303 (36.5)	157 (18.9)	104 (12.5)	267 (32.1)		
N=831, Weighed Average mean =2.59, Grand mean=2.39						2.59	1.238

Sources: Researcher's field-report, 2021



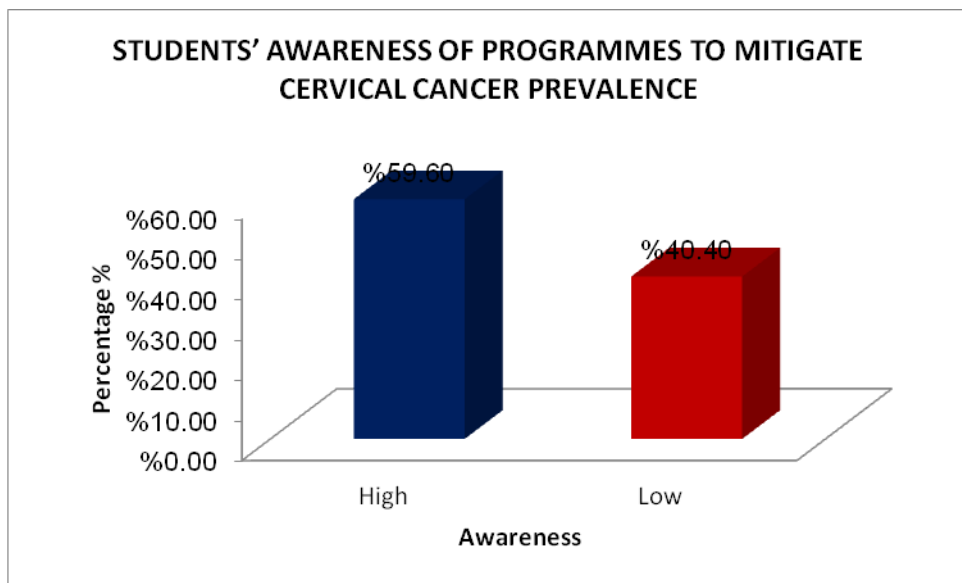
The results of findings show that 55% of the respondents' (students') are aware of the danger of having multiple sex partners while 32.0% low and 13.0% said moderate respectively.

RQ5: What is the level of students' awareness of programmes to mitigate or curtail cervical cancer prevalence?

TABLE 9: level of students' awareness of programmes to mitigate or curtail cervical cancer prevalence

S/A	ITEMS	Aware (%)	Not Aware (%)	Mean	Std. Dev
1	Health education	762 (91.7)	69 (8.3)	1.92	.276
2	Government policies	505 (60.8)	326 (39.2)	1.61	.489
3	Delayed coitarche (first sexual intercourse)	510 (61.4)	321 (38.6)	1.61	.487
4	Safe sex	322 (38.7)	509 (61.3)	1.39	.487
5	Vaccinations against HPV	396 (47.7)	435 (52.3)	1.48	.500
6	HPV Testing	416 (50.1)	415 (49.9)	1.50	.500
7	Pap smear	554 (66.7)	277 (33.3)	1.67	.472
	TOTAL	495 (59.6)	336 (40.4)		
	N=831, Weighed Average mean =1.59, Grand mean=1.39			1.59	.458

Sources: Researcher's field-report, 2021



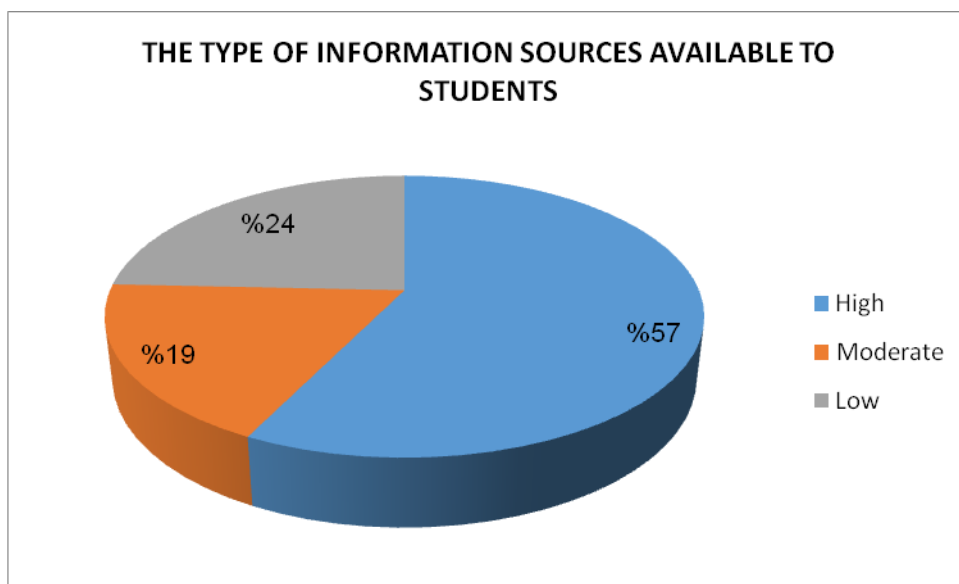
The results of findings show that 59.6% of the respondents agreed that awareness programmes to mitigate or curtain cervical cancer prevalence is high while 40.04% indicated low awareness.

RQ6: What are the types of Information sources available to Students on cervical cancer?

TABLE 10: Type of information sources available to students on cervical cancer

S/A	ITEMS	VRA (%)	RA (%)	OA (%)	NAA (%)	Mean	Std. Dev
1	Newspapers	311 (37.4)	207 (24.9)	128 (15.4)	185 (22.3)	2.77	1.170
2	Internet	334 (40.2)	173 (20.8)	165 (19.9)	159 (19.1)	2.82	1.156
3	Radio	359 (43.2)	136 (16.4)	151 (18.2)	185 (22.3)	2.81	1.212
4	Television	372 (44.8)	106 (12.8)	151 (18.2)	202 (24.3)	2.78	1.247
5	Library	260 (31.3)	164 (19.7)	155 (18.7)	252 (30.3)	2.52	1.218
6	Textbook	288 (34.7)	173 (20.8)	127 (15.3)	243 (29.2)	2.61	1.232
7	Classroom	240 (28.9)	178 (21.4)	193 (23.2)	220 (26.5)	2.53	1.165
8	Interaction	358 (43.1)	155 (18.7)	143 (17.2)	175 (21.1)	2.84	1.192
	TOTAL	315 (37.9)	162 (19.4)	152 (18.4)	202 (24.3)		
N=831, Weighed Average mean =2.71, Grand mean=2.39						2.71	1.199

Sources: Researcher’s field-report, 2021



The results of findings show that 57.0% of the respondents agreed that Information sources available to Students on cervical cancer is high while 24% said low and 19.0% said moderate

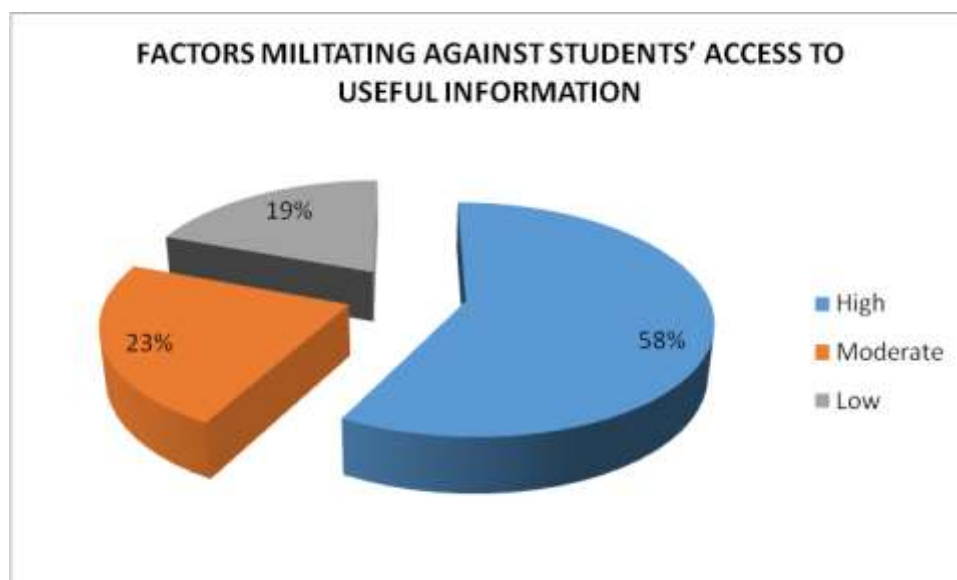
RQ7: What are the factors militating against students’ access to useful information resources on cervical cancer?

TABLE 11: Factors militating against students’ access to useful information resources on cervical cancer

S/A	ITEMS	SA (%)	A (%)	D (%)	SD (%)	Mean	Std. Dev
1	Costly nature of information materials	301 (36.2)	247 (29.7)	135 (16.2)	148 (17.8)	2.84	1.102
2	Inability to locate those information in Libraries	318 (38.3)	196 (23.6)	188 (22.6)	129 (15.5)	2.85	1.099
3	Not aware of available information	224 (27.0)	296 (35.6)	176 (21.2)	135 (16.2)	2.73	1.030
4	Lack of access to internet services in my school	265 (31.9)	216 (26.0)	197 (23.7)	153 (18.4)	2.71	1.101
5	Nonexistence of library in my school	187 (22.5)	187 (22.5)	243 (29.2)	214 (25.8)	2.42	1.100
6	Nonexistence of information centres in my school	204 (24.5)	243 (29.2)	187 (22.5)	197 (23.7)	2.55	1.102
7	Nonexistence of libraries in my area	223 (26.8)	248 (29.8)	193 (23.2)	167 (20.1)	2.63	1.083
8	Lack of time to go through information materials on cervical cancer	204 (24.5)	283 (34.1)	183 (22.0)	161 (19.4)	2.64	1.054
9	Lack of access to television and radio	257 (30.9)	223 (26.8)	213 (25.6)	138 (16.6)	2.72	1.074
	TOTAL	243 (29.2)	238 (28.6)	190 (22.9)	160 (19.3)		
	N=250, Weighed Average mean =2.67, Grand mean=2.39					2.67	1.082

Sources: Researcher's field-report, 2021

SUMMARY OF FACTORS MILITATING AGAINST STUDENTS' ACCESS TO USEFUL INFORMATION RESOURCES ON CERVICAL CANCER



The results of findings show that 58.0% of the respondents agreed that factors militating against students' access to useful information resources on cervical cancer is high while 23% indicated moderate and 19.0% low. The study showed that majority of the respondents agreed that there are factors militating against students' access to useful information resources on cervical cancer. The mean and standard deviation used corroborate this claim. This was shown with the weighted average mean and standard deviation score of (**Weighed Average mean =2.67, Grand mean=2.39**). Indeed, there are factors militating against students' access to useful information resources on cervical cancer

Discussion and Conclusion

The present article is an exploratory study that produces valid knowledge on Awareness of Cervical Cancer among Public Secondary School Students in Epe Metropolis. It is an intensive study geared towards a thorough understanding of the situation in Nigeria. The study revealed that majority of the respondents had knowledge of cervical cancer but only 48.3% of the students' are aware of library and information services supportive of cervical cancer awareness and 49.8% respondents agreed that there is low level of students' awareness of information sources on cervical cancer. Meaning librarians needs to do more to increase awareness of cervical cancer and in designing of library and information services to increase on this awareness avoidable cancer. These findings are supported by Society of Gynaecology and Obstetrics of Nigeria (2018) which submitted that prevention and

treatment of cervical cancer in Nigeria is crippled by lack of awareness and knowledge of the disease, suboptimal public investment and competing health needs.

The study also revealed that 55% of the respondents are aware of the danger of having multiple sex partners and 59.6% of the respondents agreed that there is students' awareness of programmes to mitigate or curtail cervical cancer prevalence though 40.04% indicated low awareness. The findings synchronize with the World Health Organization (2020) and Centre for Disease Control (2020) and the findings may have arisen because of these earlier efforts. Similarly, the study also revealed the type of Information sources available to Students on cervical cancer to include newspaper (77.7%) internet (76.8%), radio (80.4%) , television (72.8%), library (74.5%) textbook (73.8%) ,classroom (77.9%) , library (67.6%) .

The study further revealed the factors militating against students' access to useful information resources on cervical cancer to include : costly nature of information materials (65.9%), inability to locate those information (61.9%), Lack of awareness (62.6%), lack of access to internet services in their school (31.9%). Sadly (45.0%) indicated that nonexistence of library in their schools, nonexistence of libraries in their area (55.6%) and Nonexistence of information centres (53.7%) in their school as factors militating against their access to useful information resources on cervical cancer. Others are lack of time to go through information materials on cervical cancer (58.6%) and lack of access to television and radio (57.7%). This findings aligns with that of Society of Gynaecology and Obstetrics of Nigeria (2018) which submitted that there is no adequate database for cervical cancer in Nigeria, no organized screening programme. The study concludes that cervical cancer is avoidable/ preventable with vaccination and appropriate screening and all a sundry should join in this campaign to ensure adequate information cum awareness for woman and more importantly girls especially on vaccination and screening to reduce mortality arisen from cervical cancer which is an avoidable and preventable disease.

Recommendation

- 1) Libraries should have more cutting edge services designed towards creating more awareness on cervical cancer
- 2) Librarians should take the lead in creating awareness for other related avoidable and preventable diseases bedevilling mankind. The information component in our profession is a powerful tool that allows us to research and collaborate with any group across discipline.

What use is gathering information and knowledge without using it as a tool for human development, endearing civilization and promoting innovation?

- 3) Government should put in place policies that ensure that functional libraries and information centres are located in schools across the country. It should be a rigid policy: no library, close down the school.
- 4) Government and corporate bodies should increase campaign on cervical cancer, especially in January every year.
- 5) Nigeria library association, both at state and at the National level should dedicate sub themes for awareness campaign on available diseases like cervical cancer in their annual programmes and conferences.

REFERENCES

- Adetokunbo, O. L. and Herbert M. G. (2003). *Public Health Medicine for the Tropics*, 4th Edition 2003.
- Alliance for Cervical Cancer Prevention (2004). *Planning and Implementing Cervical Cancer Prevention and Control Programs: A manual for Managers*, Seattle: ACCP 2004
- Cecelia, H. B., Kirk J. M., Jori S. C. and Warner, K. H. (2019) - Cervical cancer Medscape reference. Centre for Disease Control (2021) Cervical cancer. Retrieved from www.cdc.gov/cancer/cervical/index/html on 12th June, 2021
- Society of Gynaecology and Obstetrics of Nigeria (2018) *Guidelines for the Prevention of Cervical Cancer*, first edition.
- Costa, J. (2020). *Cancer. Encyclopedia Britannica*.
<https://www.britannica.com/science/cancer-disease>. Accessed 7th April, 2021
- Costing the National Strategic Plan on Prevention and Control of Cervical Cancer in Nigeria 2017-2021 (November 2020).
- National Cancer Institute Dictionary of Cancer terms
(www.cancer.gov/publications/dictionaries/cancer-terms/def/cancer)
- Elima, J, Maria P.C., Olufemi O., etal (2013). *Cancer incidence in Nigeria: a report from population-based cancer registries*
- Robert, B. W. and Neal K. (2008) *Public Health and preventive medicine*. 15th edition 2008. 0-07-159318-7

Laurie, E, and Hamilton et.al. (2011) Cervical cancer prevention in Low-Resource Settings

Villa, L.L., Costa R.L.R., Petta C.A, et.al. (2005). Prophylactic quadrivalent human papillomavirus (types 6, 11, 16, and 18) L1 virus-like particle vaccine in young women: a randomized double-blind placebo-controlled multicentre Phase II efficacy trial. *Lancet Oncol*, 6, 271-8.

World Health Organization (2012) (www.who.int/health-topics/cevical-cancer)

WHO (2021). International Agency for Research on Cancer. Retrieved on March 29, 2021.<https://www.who.int/cancer/PRGlobocanFinal.pdf>