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Knowledge of Risk Factors and Preventive Measures against Cervical Cancer among Female Students of Nnamdi Azikiwe University, Awka.

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Abstract
Cervical cancer has continued to be a public health issue of great concern. This study investigated the knowledge of risk factors and preventive measures against cervical cancer among female students of Nnamdi Azikiwe University, Awka (UNIZIK). The descriptive survey research design was adopted for the study. The population consisted of 2398 final year (2010/2011 set) female students from all (10) the faculties in Nnamdi Azikiwe University, Awka campus. A sample of 350 female students was drawn from two faculties selected using purposive sampling technique and used for the study. Convenient sampling technique was however, employed in the administration of the instrument. A structured questionnaire named Knowledge of Risk Factors and Preventive Measures Against Cervical Cancer Questionnaire (KRPACQ) was the instrument used for data collection. The instrument was validated and the test-retest reliability value obtained using Pearson Product Moment Correlation Co-efficient was 0.82. Descriptive statistics of frequency and percentage (%) were used to analyze the data collected from 328 copies of the questionnaire found analyzable and represented with tables and bar chart. Ashur-scale was used as a criterion for assessing the knowledge of the respondents. The findings show that there is a high knowledge of cervical cancer and low knowledge on cause, risk factors and preventive measures for cervical cancer amongst the respondents. Based on this, it was recommended that education of the female students in the different levels of education in various institutions of learning on cervical cancer cause, risk factors and preventive measures should be intensified.
Keywords: *Cervical cancer, Preventive measures, Risk factors, UNIZIK.*

Introduction

Cervical cancer is a malignant neoplasm of the cervix uteri or cervical area (Abiodun, Fatungase & Olu-Abiodun, 2013). It is an important yet preventable women's reproductive health problem. Curado, Edwards, Shin, Storm, Ferlay, Heanue, and Boyle (2007) posited that it remains the commonest genital tract cancer. It is the second commonest cancer of women trailing behind breast cancer. Cervical cancer arises from an uncontrolled abnormal multiplication of cells in the cervix. World Health Organization (WHO, 2010) reported that globally, there are nearly 1.4 million cases of clinically recognized cervical cancer. As recorded by Cronje (2005), Shafi (2007) and Anorlu (2008), developing countries are responsible for 80 per cent of the 500,000 new cases of cancer of the cervix diagnosed annually worldwide, and account for 85 per cent of 250,000 deaths recorded yearly from the disease. Developed Nations have given prompt attention to the disease with resulting evident decrease in its incidence (Ezem, 2009). Their main focus was on early detection through screening but in Sub-Saharan Africa including Nigeria where cervical cancer is the predominant cause of cancer-related deaths; it is majorly presented in the late stage (Jimoh & Abdul, 2004) when only extenuatory treatment can be given.

There are symptoms that accompany cervical cancer which are enumerated as vaginal bleeding, post coital bleeding, foul smelling vaginal discharge, vaginal mass indicating malignance in some cases, moderate pain during coitus etc. for advanced cases, symptoms may include metastasis at abdomen, lungs or elsewhere, loss of appetite, weight loss, fatigue, pelvic pain, back pain, leg pain, swollen legs, heavy vaginal bleeding, bone fractures, and/or leakages of urine or faeces from the vagina in some cases (Nanda, 2006). Walter (2014) hence agreed that vaginal bleeding, vaginal discharge and abdominal pain are the most important symptoms.

Cervical cancer is caused by infection with Human Papilloma virus (HPV) which has more than 100 strains or subtypes. HPV strains 16 and 18 are the cause of 75 per cent of cervical cancer globally while strains 31 and 45 are the cause of another 10 per cent (Dillman, 2009). HPV can be transmitted through sexual contact whether vaginal, anal or oral coitus. HPV alone doesn't lead to the development of cervical cancer but works in line with certain risk factors. Risk factors are lifestyles or conditions that predispose an individual towards

contracting a disease. Numerous risk factors have been attributed to the development of cervical cancer including-infection with some strains of Human Papilloma virus, high parity, early sexual debut, promiscuity, early age at first full-term pregnancy, immune suppression, sexually transmitted infections (HIV, Chlamydia, Gonorrhea etc), poor nutrient status, smoking, government policy and socio-economic status. Being a female is the basic risk factor as cervical cancer is a disease of the female gender.

Preventive measures are strategies mapped out to avoid the occurrence of or experiencing something unpleasant. Prevention of cervical cancer can be seen in two aspects- primary preventive measures and secondary preventive measures. Primary preventive measures includes; vaccination with Human papilloma virus vaccine (Gardasil, Cervarix or Gardasil9), practicing safe sex, ensuring fidelity to partner, going for family planning, avoiding smoking, and obtaining nutrient dense food. On the other hand, secondary prevention involves appropriate screening of women, diagnosis and treatment of premalignant diseases. This screening for early detection of changes in the cervical area can be performed by Papanicolaou (pap) smear, and visual inspection of the cervix after application of 3-5 per cent of acetic acid (VIA) or Lugol's iodine (VILI) (Dim, 2012) or Schiller's solution. W.H.O, (2006) recommended a 5years screening interval for women over 50years and a 3years interval for those within the age group of 25-45 years if the resources are available. HPV vaccine comes in 3 shots and can be administered to females within the ages 9-26 years.

Knowledge according to Oparah, Fidelis and Nwankwo (2014) is referred to as information, skill and understanding gained through learning and experience. Knowledge in this study is seen as the awareness or understanding of concepts, facts and experiences about the risk factors and preventive measures for cervical cancer. Female as used in this study constitutes women within the reproductive age of 15-49 years.

Statement of the Problem

Despite the numerous researches on cervical cancer, its incidence has been on the increase especially in developing Nations hence it remains a public health problem of great concern. Nigeria has a population of 40.43 million women aged 15 years and older who are at risk of developing cervical cancer (WHO, 2010). Institutions (Nnamdi Azikiwe University inclusive) probably, usually have a higher population of female gender than male and these females are often above 15 years of age. Nnamdi Azikiwe University female students hence fall within the age bracket of females mostly at risk of cervical cancer. Therefore, it is pertinent to ascertain their knowledge level on cervical cancer for proper sensitization of the students. Studies have shown that cervical cancer accounts for 74.6 per cent, 63.1 per cent, 66.2 per cent and 59.3 per cent of histological confirmed gynecological malignancies in Benin, Ilorin, Awka and Zaria, respectively (Gharoro, Abedi & Okpere, 1999; Ijaiya, Aboyeji, & Buhari, 2004; Ojiyi, Dike, Okeudo, Ejikem, Nzewuihe, & Agbata, 2013). Incidence rate of cervical cancer in UK is 8/100,000 women whereas in Nigeria, Ahmed, Sabitu, Idris, and Ahmed, R. (2013) posited that its incidence rate is 250/100,000 women. This sharp contrast may be attributed to poor knowledge of risk factors, preventive measures (cervical screening) for cervical cancer and poor practice of the preventive measures.

In Owerri, Ezem (2009) noted that knowledge of cervical cancer is low compared to other result of researches carried out in other parts of Nigeria and in developed Nations and only 7.1 per cent of respondents have ever been screened, majorly due to lack of knowledge of screening. Eke, Ezeama, Eke.C, Eleje, Akabuike and Ezebialu (2010) studying female workers in Nnewi reported that knowledge of risk factors for cervical cancer was found to be low generally. Chinaka and Udeajah (2012) discovered that some respondents in Ebonyi State wrongly believe that prolonged use of intrauterine device (IUD) is a risk factor. Abiodun, Fatungase and Olu-Abiodun (2013) in their study in Ogun state, found out that knowledge and perception of their respondents on cervical cancer and cervical screening is generally poor. It is on this premise that this study intends ascertain the knowledge of risk factors and preventive measures against cervical cancer amongst female students of Nnamdi Azikiwe University, Awka. This study therefore hinges on Health Belief Model (HBM) which proposes that the perception of the severity of illness, susceptibility to illness and its consequences are the factors that predict the likelihood of a person taking recommended preventive health action (Abiodun, Fatungase & Olu-Abiodun, 2013). Onwunaka, Nwimo, Ilo and Okafor (2015) reported that in its original formulation, HBM hypothesized that health related actions depend upon the simultaneous occurrence of three classes of components: 1) the existence of sufficient motivation to make health salient; 2) the belief of a perceived threat to health; and 3) the belief that following a particular health recommendation would be beneficial in reducing the perceived threat.

Research Questions

The research questions for this study are:

1. Do female students of Nnamdi Azikiwe University have knowledge of cervical cancer?
2. What causes of cervical cancer are known by Nnamdi Azikiwe University female students?
3. What risk factors for cervical cancer are known by Nnamdi Azikiwe University female students?

4. What preventive measures for cervical cancer are known by Nnamdi Azikiwe University female students?

Method

The study adopted descriptive survey research design which according to Agbonlahor and Osagiede (2014) involves studying a group of people or items by collecting and analyzing data from only a few people or items considered to be a good representative of the entire population. The area of focus of this study is Nnamdi Azikiwe University main campus, Awka. The school popularly known as UNIZIK is situated along Enugu-Onitsha express road in the capital city of Anambra state- Awka. The school's main campus located at Awka is sited 35km to the south-west of Awka. The inhabitants of Awka are mainly civil servants, business men and women, students and farmers. The population of this study consisted of all the final year (2010/2011 set) female students of the 10 faculties in Nnamdi Azikiwe University, Awka campus. The campus has ten (10) faculties with a total population of 2398 final year female students. Precisely, faculty of Agricultural Sciences has 96 final year female students, Art-293, Biosciences-407, Education-422, Engineering-84, Environmental management-108, Law-100, Management Sciences-378, Social Sciences-296, Physical Sciences-214.

The sample consists of 350 final year female students in faculties of Education and Management sciences. Using purposive sampling technique, the researchers selected these two faculties out of the ten faculties in the main campus because they are among the faculties with the highest number of female final year students. The nine departments in Education faculty and the number of their final year female students are as follows- Adult Education-42, Educational Foundations-69, Early Childhood and Primary Education-20, Educational Management and Policy-28, Guidance and Counselling-18, Human Kinetics and Health Education-17, Library and Information Sciences-16, Science Education-111, and Vocational and Technical Education-101. While for Management Sciences, Accountancy-91, Banking and Finance-51, Business Administration-53, Cooperative Economics-55, Entrepreneur-Nil, Marketing-44, and Public Administration-84. Convenient sampling technique was however used to administer 175 copies of the questionnaire in faculty of Education and 175 copies of the questionnaire in faculty of Management Sciences.

The instrument for collection of data was a structured questionnaire named- Knowledge of Risk Factors and Preventive Measures Against Cervical Cancer Questionnaire (KRPACQ). The instrument contained four sections with each dealing with knowledge of cervical cancer, causes of cervical cancer, risk factors for cervical cancer and preventive measures for cervical cancer respectively. The questionnaire was validated by two lecturers in the department of Human kinetics and Health Education Nnamdi Azikiwe University, Akwa. They examined the items in the questionnaire to ascertain their clarity, ability to elicit the needed information and also the appropriateness of the language. The reliability of the instrument was established by administering 15 copies of the questionnaire to the female students of faculty of Social Sciences Nnamdi Azikiwe University, Akwa. This faculty is outside the sample faculties for this research. The same was repeated after a week. This Test-Retest method was carried out to ensure the internal consistency of the result of the items in the questionnaire. The Pearson product moment correlation coefficient was applied to determine the consistency of the items. Therefore a reliability of 0.82 was obtained; this result indicates that the instrument is reliable.

Out of the 350 administered copies of the questionnaire, 328 were returned and found analyzable hence 94 per cent return rate was achieved. The data collected in this study was analyzed using descriptive statistics of frequency and percentage. The analyzed data were put in frequency and percentage tables and represented with bar chart. Ashur-scale was used as a criterion for deciding the knowledge of the respondents. Items with less than 40 per cent were considered to be "low" level of knowledge, 40-59 per cent "average", 60-80 per cent "high" and above 80 per cent "very high" level of knowledge.

Results

Research Question 1: Do female students of Nnamdi Azikiwe University have knowledge of cervical cancer?

Table 1: **Knowledge of cervical cancer by female students of Nnamdi Azikiwe University**

ITEMS	FREQUENCY	PERCENTAGE (%)
Cervical cancer affects only the female gender.	229	70
Cervical cancer occurs in the cervical area	157	48
Cervical cancer is a non communicable disease.	164	50
Cervical cancer is a preventable disease	88	27
TOTAL	**638**	**195**

Table 1 shows that the greater number of Nnamdi Azikiwe University female students (70%) have knowledge of cervical cancer to affect only female while 48 per cent, 50 percent and 27 per cent identified cervical cancer to occur in the cervical area, non communicable and a preventable disease respectively.

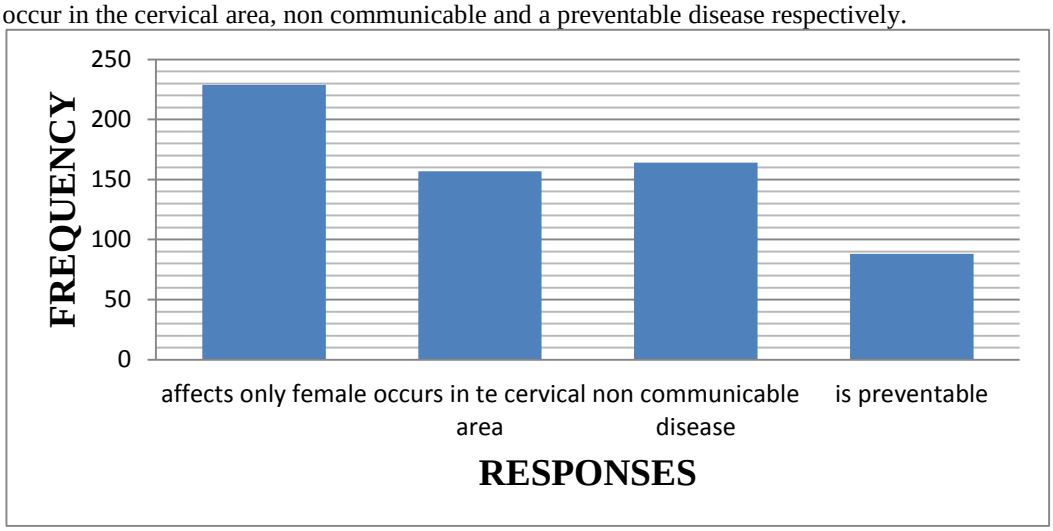

Fig 1: Bar Chart Showing Knowledge of Respondents on Cervical Cancer

Research Question 2: ***What causes of cervical cancer are known by Nnamdi Azikiwe University female students?***
Table 2: **Nnamdi Azikiwe University Female students' knowledge of the cause of Cervical Cancer.**

CAUSE	FREQUENCY	PERCENTAGE (%)
Dog bite	0	0
Human papilloma virus	114	35
Worms in the cervix	89	27
Frequent vaginal douching	110	34
Poisoned food	41	13
TOTAL	**354**	**109**

The data in Table 2 show that only 35 per cent of the respondents had knowledge of the cause of cervical cancer while the rest of the respondents 27 per cent, 34 per cent, and 13 per cent wrongly indicated worms in the cervix, frequent vaginal douching and poisoned food respectively as cause of cervical cancer.

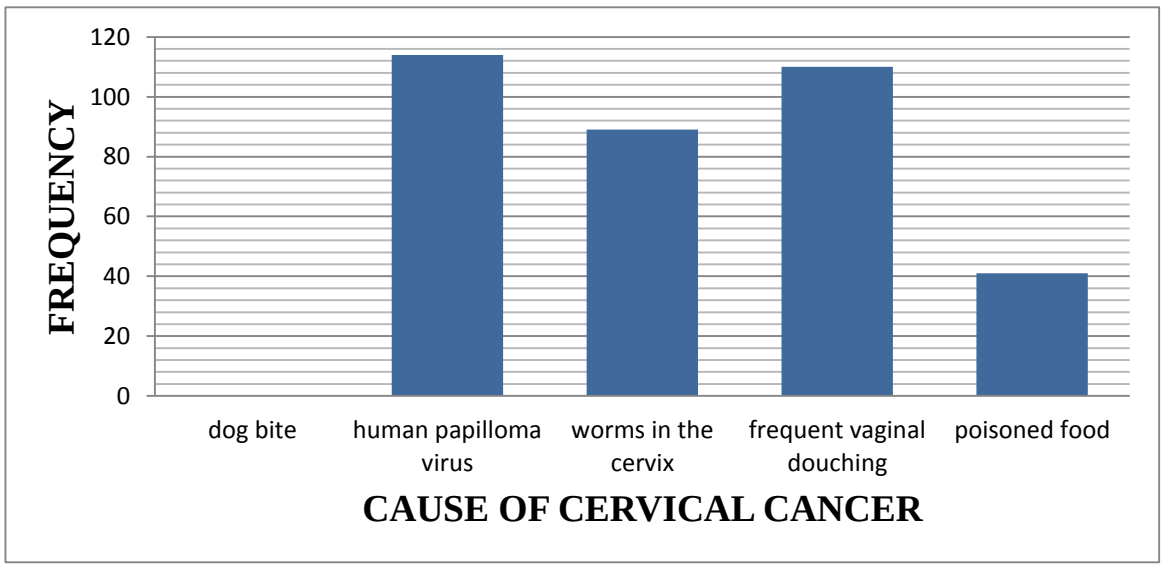

Fig 2: **Bar Chart Showing Knowledge of Respondents on Cause of Cervical Cancer**

Research Question 3: ***What risk factors for cervical cancer are known by Nnamdi Azikiwe University female students?***

Table3: **Nnamdi Azikiwe University Female Students' Knowledge of the Risk Factors for Cervical cancer.**

RISK FACTORS	FREQUENCY	PERCENTAGE (%)
Having many sexual partners	105	32
Long-term use of intrauterine device	69	21
Sexually transmitted infections	101	31
Use of sanitary pad more than once	48	15
Having many children	21	6
Smoking	19	6
Age	4	1
Early sexual exposure	55	17
Total	**422**	**129**

The data in table 3 indicate that 32 per cent, 31 per cent, 17 per cent, 6 per cent, 6 per cent and 1 per cent of the respondents identified having many sexual partners, sexually transmitted infections, early sexual exposure, having many children, smoking and age respectively as risk factors associated with cervical cancer. However, 21 per cent and 15 per cent of the respondents wrongly identified long-term use of intrauterine device (IUD) and use of sanitary pad more than once respectively as cause of cervical cancer.

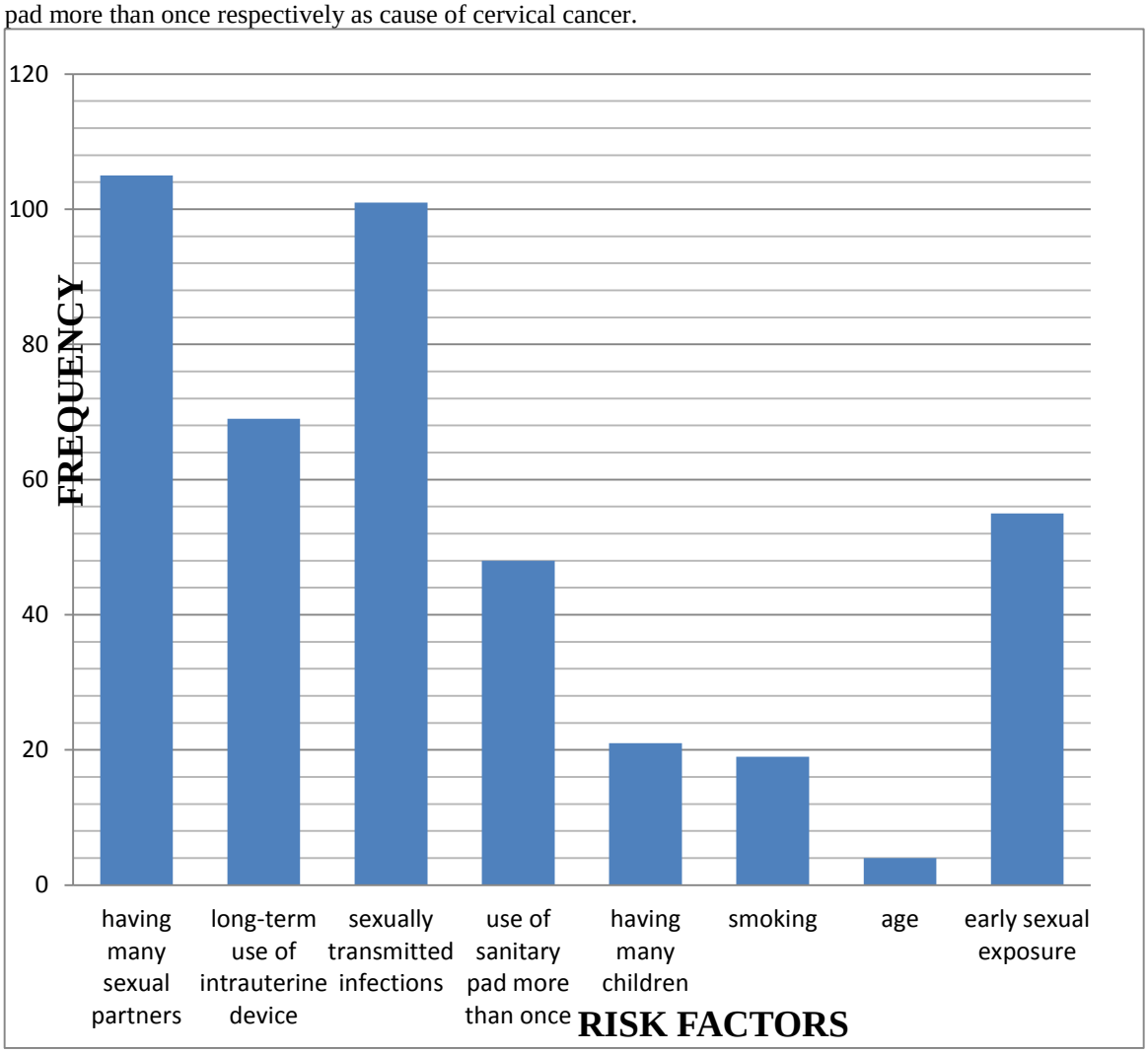

Fig3: **Bar Chart for Knowledge of Respondents on Risk Factors for Cervical Cancer**

Research Question 4: ***What preventive measures for cervical cancer are known by Nnamdi Azikiwe University female students?***

Table 4: **Knowledge of Preventive Measures for Cervical cancer.**

PREVENTIVE MEASURES	FREQUENCY	PERCENTAGE (%)
Vaccination with HPV vaccine	73	22
Cervical screening	89	27
Good nutrition and exercise	51	16
Human papilloma virus testing	58	18
Practicing safe sex	102	31
Avoiding smoking	32	10
Drugs	11	3
Having only one sexual partner	146	45
Total	**562**	**172**

Data contained in table 4 above indicate that about 45 per cent, 31 per cent, 27 per cent, 22 per cent, 18 per cent, 16 per cent, and 10 per cent of the respondents identified having only one sexual partner, practicing safe sex, cervical screening, vaccination with HPV vaccine, human papilloma virus testing, good nutrition with exercise, and avoiding smoking respectively as the preventive measures against cervical cancer. On the other hand, 3 per cent of the respondents wrongly indicated drugs as a preventive measure against cervical cancer.

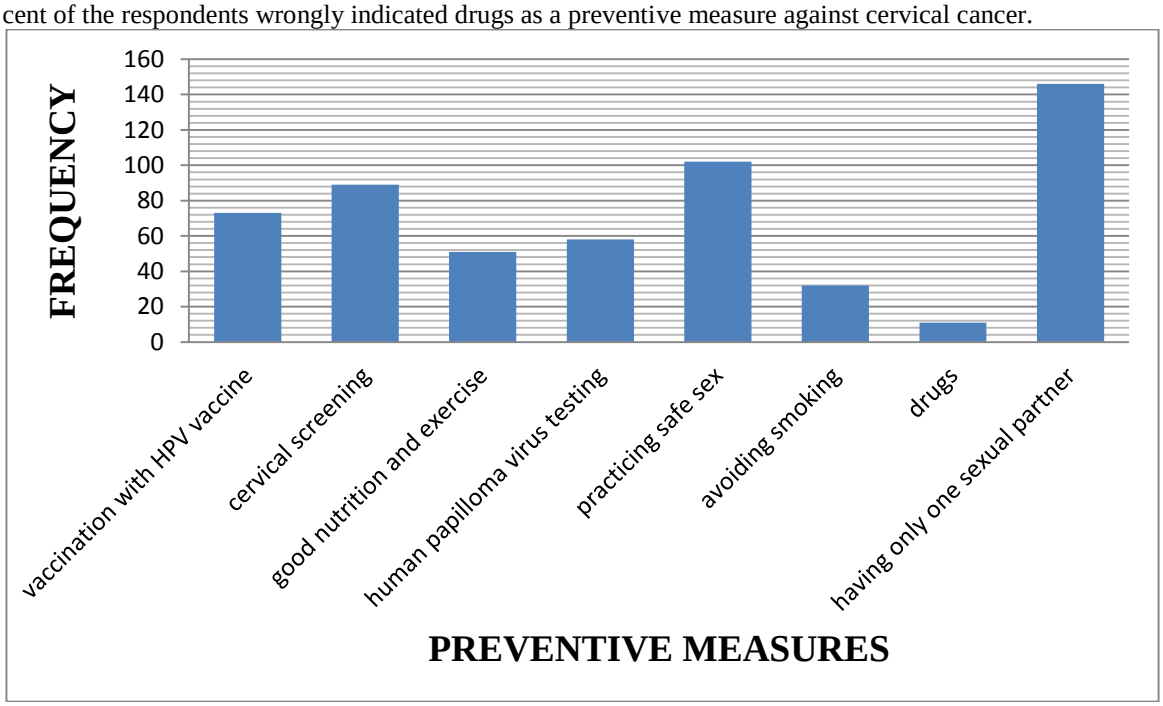

Fig4: **Bar Chart Showing Respondents' Knowledge of Preventive Measures against Cervical cancer**

Discussion of Results

On knowledge of cervical cancer, the finding of this study revealed a high knowledge of Nnamdi Azikiwe University female students on cervical cancer as a disease of the female gender however; average knowledge was found for its non communicable nature and occurrence in the cervix. On the other hand, there was a poor knowledge on the preventive nature of cervical cancer. In their study of Nnewi female workers, Eke, Ezeama, Eke.C, Eleje, Akabuike and Ezebialu (2010) corroborated this finding as they found a high level of awareness amongst their respondents. This result however differs from findings of other studies that recorded less than 40 per cent (Chinaka & Udeajah, 2012; Eze, Umeora, Obuna, Egwuatu & Ejikeme, 2012) and 6.1 per cent (Abiodun, Fantungase & Olu-Abiodun, 2013) of respondents having knowledge of cervical cancer. This finding is in congruence with the expectation of the researchers as the population for the research is university students. Hence the expectation is in tandem with the submission of Chinaka and Udeajah (2012) that the highest level of awareness are from studies using undergraduates and health care professionals.

Table 2 shows that greater percentage of the students had no knowledge of the cause of cervical cancer as only 35 per cent of the respondents rightly agreed with Dillman (2009) and Dim (2012) that human papilloma virus as the cause of cervical cancer whereas the rest of the respondents had misconceptions on the cause of cervical cancer. Knowledge of cause of cervical cancer is therefore low amongst the respondents and this can be attributed to the fact that according to Eze and Ibekwe (2010), HPV's link to cervical cancer was first discovered in 1980s

and awareness and knowledge of it are not yet widespread even in developed countries. This therefore shows the need for education of the female students across different levels of education on the cause of cervical cancer.

Also, on risk factors finding as shown in Table 3 indicates a generally low knowledge amongst the respondents. All the risk factors in Table 3 were poorly known by the respondents while some even had misconceptions concerning the risk factors as 21 per cent and 15 per cent of the respondents wrongly identified long-term use of intrauterine device (IUD) and use of sanitary pad more than once respectively as cause of cervical cancer. This is not expected as the respondents are university students. However, this misconception is in line with the findings of Madong, Madaka and Mannaseh (2003), Chinaka and Udeajah (2012). This finding can be attributed to the fact that most of the respondents have little concern for their health hence indicating the need for education of the female students across different levels of education on the risk factors for cervical cancer.

This study also found that greater number of the respondents (68.3%) recognized that cervical cancer is preventable which is in concordance with the finding of Eke, Ezeama, Eke C., Eleje, Akabuike and Ezebialu (2010) as most of their respondent (89.7%) knew that cervical cancer can be prevented. This is probably attributed to the fact that the respondents in both studies were university students. Nevertheless, this finding differs from that of Eze, Umeora, Obuna, Egwuatu and Ejikeme (2012) who recorded 30 per cent of their respondents to be aware that cervical cancer is preventable.

Table 4 shows a low knowledge of female students of Nnamdi Azikiwe University (22%) on human papilloma virus (HPV) vaccine as a preventive measure for cervical cancer. This finding can be attributed to the fact that only few of the respondents have knowledge of human papilloma virus as the cause of cervical cancer. Chinaka and Udeajah (2012) corroborated this finding by reporting that there is a dearth of information on knowledge of HPV among women in Nigeria. There is therefore urgent need for education of the young and older women on human papilloma virus vaccine as there is paucity of knowledge/information on the vaccine. Evident in table 4 also is the fact that this study recorded a low knowledge of cervical screening as a preventive measure for cervical cancer amongst the respondents as only 27 per cent had knowledge. This finding is surprising as based on the education level of the respondents; they are expected to know about the cervical cancer screening. This low knowledge was corroborated by the findings of Feyi-Waboso, Kamanu and Aluka (2005), Thomas, Babarinsa, Ajayi, Fawole, Ojemakinde and Omigbodun (2005), Eze, Umeora, Obuna, Egwuatu and Ejikeme (2012) and Chinaka and Udeajah (2012), who in their various studies recorded 16 per cent, 19.7 per cent, 25 per cent and 25.6 per cent levels of knowledge of cervical screening respectively among their subjects. This low knowledge level can be explained by the fact that according to Chinaka and Udeajah (2012) other studies in Nigeria that focused on health care providers recorded higher level of cervical screening awareness. These studies that focused on health care providers include- in Nnewi, knowledge was 87 per cent, in Sagamu 78.3 per cent and in Ilorin 69.8 per cent as recorded by Eke, Ezeama, Eke C., Eleje, Akabuike and Ezebialu (2010); Olusegun and Adepiti (2008) and Arnolu (2008) respectively. This finding therefore justifies the need for education of Nnamdi Azikiwe University female students on cervical screening as knowledge of cervical screening will probably increase the likelihood of being screened. That screening prevents cervical cancer-related death is not dubitable and it has the efficacy of reducing the pernicious effect of the disease if women are adequately screened. This however, indicates that greater use of opportunistic screening approach by physicians should be intensified as Onah, Ezugwu and Eze (2001) posited that presently even amongst Nigeria gynaecologists only 15 per cent request for cervical screening of their patients. Also Aboyeji, Ijaiya and Jimoh (2004) submitted that 76.9 per cent of those who did a cervical smear did so because a health worker asked them to do it. Other cost effective means of cervical screening like visual inspection of the cervix after application of acetic acid or Lugol's iodine can as well be utilized in resource poor communities.

Result as shown in table 4 also indicates that 16 per cent of the respondents know that good nutrition and exercise is a preventive measure for cervical cancer while 18 per cent, 45 per cent, 31 per cent, 10 per cent and of the respondents know human papilloma virus testing, having only one sexual partner, practicing safe sex and avoiding smoking respectively to be preventive measures undertaken against cervical cancer while 3 per cent of the respondents misconceived drug to be a preventive measure. This data show a low knowledge of preventive measures against cervical cancer amongst the respondents apart from having only one sexual partner whose knowledge level is on the average. This is not expected as the respondents are post secondary school students. Education of female students across different levels of education is hence necessary to aid individuals know the little things they can do daily that will go a long way in preventing cervical cancer occurrence.

Conclusion

From the findings of this research, it can be concluded that there is a high knowledge of cervical cancer amongst the female students of Nnamdi Azikiwe University. However, there is a poor knowledge on the cause and risk factors for cervical cancer amongst the respondents. Also, there is generally poor knowledge of preventive measures for cervical cancer.

Recommendations

1. Proper education of the female students at all level of education on all spheres of cervical cancer should be done effectively to enable them lead lives that will be free of the deleterious effects of the disease. Also, sensitization on the need to be vaccinated and screened is pertinent.
2. Chinaka and Udeajah (2012) submitted that the most important reason given by respondents who had Pap smear was the fact that it was part of the general screening program. It is hence recommended that the tertiary institutions in the country should incorporate cervical screening into their health services and make it compulsory especially for final year students and students who are up to the age range for screening.
3. In the same vein, vaccination with human papilloma virus vaccine should be given to the newly admitted students as part of medical service.
4. Women are more likely to undergo cervical screening if their doctor recommended it, hence the need for doctors to intensify opportunistic cervical screening for their adult female patients.
5. Cervical cancer management services should as well be made available, accessible and affordable to resource poor communities in other to help cure and manage existent cervical cancer cases as this will also help reduce the incidence of the disease.
6. Government should put in place a national policy on screening for cervical cancer and other cancers with appropriate screening guidelines and also devote more fund for prevention strategies more especially for HPV vaccination and cervical screening programmes.
7. In the interim, other cost effective means of cervical screening like visual inspection of the cervix after application of 3-5 percent of acetic acid (VIA) or Lugol's iodine (VILI) etc should be utilized by resource poor communities.

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