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Full Length Research

Sociodemographic and risk factors of cervical cancer among female staff of Federal Medical Centre, Owerri, Imo State, Nigeria

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ABSTRACT: This study examines the sociodemographic and risk factors for cervical cancer among female staff of Federal Medical Centre, Owerri, Imo State Nigeria. It is a descriptive cross-sectional survey which was conducted among 400 female staff using predesigned semi-structured questionnaires. The sampling technique adopted was systematic sampling technique. Data analyses were done using statistical package for social sciences version 23 software package. Chi square was used to determine the associations between age at marriage and cervical erosion. A total of 77(19.3%) respondents consume alcohol, 78(19.5%) have had sexually transmitted infection and 58(14.5%) had multiple sexual partners. Thirty-nine (7.5%) have had regular Pap test, while 293(73.2%) have never had Pap test. Cervical erosion was found among 114(38.3%) out of which 101(25.3%) occurred in women that were married on or before the age of 21 years. This study shows the association of cervical cancer among female staff of Federal Medical Centre, Owerri and their sociodemographic and other risk factors. Monogamy, late commencement of sexual activity, personal hygiene, use of barrier contraceptive methods, regular cervical screening and early detection efforts will help towards primary prevention.

Keywords: Cervical cancer, Owerri, risks factors, sociodemography.

INTRODUCTION

Cervical cancer is a cancer arising from the cervix. It is due to the abnormal growth of cells that have the ability to invade or spread to other parts of the body. Cervical cancer is second only to breast cancer as the most common female malignancy in both incidence and mortality worldwide (International Agency for Research on cancer, Global Cancer Observatory (GloboCan), 2018). More than 300,000 deaths occur as a result of cervical cancer each year (GloboCan, 2018), predominantly among economically disadvantaged women in both developing and industrialized nations (Sierra-Torres and Tyring, 2003). According to data collated from the Global Cancer Incidence and Mortality study, it is estimated that 80,000 African women are diagnosed of cervical cancer annually (World Health Organization, 2015). A total of 53,000 women in Africa actually die annually from cervical cancer, with higher prevalence in countries where women never attend cancer screening and low incidence seen in countries in North Africa compared to East Africa (WHO, 2015).

The incidence of cervical cancer in Nigeria is around 14,900 and since there are approximately 32 million Nigerian women aged 15 to 64 years old, there are up to 10,000 women dying annually from the condition, approxi-

mately a woman every hour (Adewole et al., 2005). Thus, in Africa, based on population registries, an average of 34 out of every 100,000 women are diagnosed with cervical cancer and 23 out of every 100,000 women die from cervical cancer every year (WHO, 2015). Yet, unlike most other cancers, cervical cancer is readily preventable when effective programs are implemented to detect and treat its precursor lesions. Epidemiologic study done by Juneja et al. (2003) shows that factors such as beginning intercourse at an early age, getting married before 18, giving birth at an early age, giving birth to three or more than three babies, risky sexual behavior, poor genital hygiene, refractory reproductive tract infection caused by Human Papilloma Virus (HPV), smoking cigarettes, lack of fruit/vegetables intake in diet are some of the risk factors of cervical cancers.

Other risk factors of cervical cancer include; age (Roopali et al., 2014); low socio-economic status (Canadian Cancer Society, 2017); family history, certain genetic factors, race, immunosuppression, chlamydia (American Cancer Society, 2015); circumcision (Gray et al., 2010).

The knowledge about risk factors of cervical cancer help women to focus on those ones that can be changed or avoided like smoking or Human Papilloma Virus Infection, rather than those one that cannot such as age and family history.

This study determines the sociodemographic characteristics and risk factors for cervical cancer, the association of age at marriage and cervical erosion among female staff of Federal Medical Centre, Owerri and find out if there is any association.

METHODOLOGY

This descriptive cross-sectional survey was carried out in Federal Medical Centre, Owerri, Imo State, Nigeria. The study was a prospective hospital-based conducted between October 2016 to March 2017. Imo State is located in South-Eastern Nigeria. Federal Medical Centre, Owerri is a specialist hospital located along Orlu road in Owerri Municipal. The number of staff was about two thousand six hundred and four (2,604) within which one thousand seven hundred and thirty-six (1,736) were female. The hospital has 18 departments with 13 wards. Using 50% prevalence of cervical cancer, sample size for the study was calculated based on Jaykaran and Tamoghna formular at 95% confidence level and 5% degree of precision (Jaykaran and Tamoghna, 2013), the sample size was 400.

Systematic sampling technique *(*Best, 1981; Nwana, 1986) was employed in selecting subjects. Inclusion criteria were female staff of Federal Medical Centre Owerri, ≥15 years of age while exclusion criteria were women who had undergone hysterectomy and who have been diagnosed of cervical cancer. Subjects that fit-in with the criteria were selected until the sample size (n) of 400 was attained (Best, 1981). The entry point was the first participant that her name appeared on the female staff list for each department/section. The sampling interval was calculated thus; N/n=1,736/400 = 4.3 ≈ 4. Each departmental/sectional head submitted their female staff list to the researcher and using systematic sampling method, participants were selected for the study after duly written informed consent.

The instrument for data collection was self-developed semi-structured questionnaire. The questions were related to socio-demographic characteristics and behavioral profile of the study population. The questionnaire is divided into three (3) sections namely; sociodemographic characteristics of respondents comprises of nine (9) questions; behavioral profile of respondents comprises of nine (9) questions; and medical examination findings indicating presence or absence of cervical erosion. The instruments for data collection were validated by public health specialist at Federal University of Technology, Owerri and Madonna University, Elele who are also member of ethical committee, Federal Medical Centre, Owerri. Test-retest method was used to assess the reliability of the instrument. Pilot samples were administered to 24 women in six (6) randomly selected departments in Imo State University Teaching Hospital (IMSU), Orlu. The instrument was re-administered on the same respondents after two weeks, the results obtained were scaled and compared for consistency test via Crombach Alpha test; a reliability coefficient of 0.85 was obtained.

All participants were asked to visit the Cancer Clinic at Obstetrics &Gynecology (O&G) department on a scheduled date. On their visit, predesigned semi-structured questionnaire were administered to the participants by the investigator after an informed written consent and information regarding socio-demographic characteristics and behavioral profile were collected. Also, the uterine cervix were examined using speculum by a nurse who had undergone training and was supervised by a gynecologist, and findings on presence or absence of cervical erosion (precursor of cervical cancer) were noted. Statistical data analysis was carried out using statistical package for the social sciences (SPSS) version 23. Chi square test was used to determine association between age at marriage and cervical erosion (precursor lesion for cervical cancer)

Ethical approval

Ethical approval was obtained from Ethical Committee, Federal Medical Centre, Owerri. All the staff who accepted to participate in the study were issued a written consent form which they signed. All information obtained was strictly confidential. Objectives and nature of the study were explained to subjects that agreed to participate. The information about participant's identity was not included

with other data and only the researcher had access to this information. No reference to the participant's identity was made at any stage during data analysis.

RESULTS

Sociodemographic characterisitcs

A total of 400 female staff participated in this study and their mean age was 33.15 years. Table 1 shows the socio-demographic characteristics of participants. The respondents were highest in the age group between 35 to 40years and least in the age group between 18 to 25 years. The respondents' marital status for married, singled, divorced and widowed were 323(80.7%), 63(15.8%), 11(2.7%), and 3(0.8%), respectively. Fifty eight (12.5%) of the respondents were nulliparous while 182(45.5%) had two children or less. Fifty one (12.7%) had secondary education while 349(87.3%) had tertiary education.

Respondents' time of marriage for age group 18 to 25 and 26 to 35 were 226(56.5%) and 121(43.5%) respectively. Most of the respondents' age at first time of birth were seen in age group 21 to 30 years, 316(79%) while the least were recorded in age group below 18 years. Most respondents had their first sexual relationship 18 years and above, 381(96%). There was few family history of cervical cancer 16(4%).

Behavioral risk factors associated with cervical cancer

Table 2 shows the distribution of respondents based on behavioral risk factors associated with cancer of cervix. Three hundred and ninety-three (80.7%) do not smoke while 7(1.7%) smokes. Three hundred and twenty three (80.7%) do not drink alcohol, 322(80.5%) had never had sexually transmitted infection. Two hundred and ninety two (73%) had between one and two sexual partners while 58(14.5%) had three or more sexual partners. One hundred and twenty three (30.8%) use condom and 293(73%) do not do Pap smear test.

Other variable results association between age at marriage and cervical erosion

Table 3 shows the distribution of cervical erosion according to age at marriage. One hundred and fourteen (38.3%) had cervical erosion of which the highest, 101(25.3%) occurred among women married at age below 21 years while the least, 52(13%) married at 21 years and above. One hundred and eighty seven (61.7%) had no cervical erosion. Statistical analysis using chi-square test showed that there was significant association between age at marriage and cervical erosion ($p<0.05$). This connotes that women who got married before the age of 21 years are more likely to develop cervical erosion when compared to women that got married at age 21 years and above.

Table 1. Sociodemographic characteristics of the respondents by age, marital status Number of children, Education, Age at marriage, Age at first child, Age at first sexual relationship and family history of cervical cancer.

Category factor	No of respondents	Percentage (%)
Age (in years)		
18-25	5	1.2
26-34	103	25.8
35- 40	196	49
41-49	79	19.8
50 and Above	17	4.2
Marital status		
Married	323	80.7
Single	63	15.8
Widowed	11	2.7
Divorced	3	0.8
No of children		
0	58	12.5
1-2	182	45.5
3 and Above	160	40
Education		
Primary	0	0
Secondary	51	12.7
Tertiary	349	87.3
Age at marriage		
Below 18	0	0
18-25	226	56.5
26-35	174	43.5
Age at first child		
Below 18	7	1.8
18- 20	22	5.5
21- 30	316	79
31 and Above	55	13.7
Age at first sexual intercourse		
Younger than 18	16	4
18 and Above	381	96
Family history of cervical cancer		
Yes	16	4
No	381	96

Table 2. Association of respondents based on smoking habit, regular alcohol intake, having sexually transmitted infection, multiple sexual partners, use of contraceptive pills, PAP smear test and cervical cancer.

Factor	No of respondent	Percentage (%)
Smoking habit		
Yes	7	1.7
No	393	98.3
Regular alcohol intake		
Yes	77	19.3
No	323	80.7
Having-sexually transmitted infection		
Yes	78	19.5
No	322	80.5
HIV	9	2.3
Gonorrhea	5	1.3
Chlamydia	7	1.7
HPV	4	0.9
Syphillis	2	0.3
Having-multiple sexual partners		
0	50	12.5
1-2	292	73
3 and Above	58	14.5
Use of contraceptives		
Oral contraceptive pills	38	9.5
Condom	123	30.8
IUCD	35	8.8
Permanent method	19	4.7
None	185	46.2
PAP test		
Yes (Regularly)	30	7.5
Yes (Rarely)	77	19.3
No	293	73.2

Table 3. The distribution of cervical erosion and age at marriage.

Age at marriage	Cervical erosion	
	Present (%)	Absent (%)
<21 Years	101(25.3)	124(31)
≥ 21 Years	52(13.0)	123(30.7)
Total	114(38.3)	187(61.7)

X^2 =11.615, df =1, p = 0.00.

DISCUSSION

This study is a descriptive survey conducted with the purpose of determining cervical cancer risk among female staff of Federal Medical Centre, Owerri, Imo State, Nigeria. The findings from this study showed that the mean age of participants were 33.15 years, this is because participants working in the institution of study fell in 26 to 34 and 35 to 40 age group category.

It is important to note that majority of the participants 323(80.7%) were married. This finding corroborates a previous report by Jean et al. (2015) who found most participants who had cancer or at risk of developing cancer were between 30-55 years old. According to Roopali et al. (2014), 58.2% females that had cervical cancer were married while another study by Reis et al. (2011) found that non married women had a decrease risk for cervical cancer (OR=0.07). Their study confirmed that reproductive history of women is an associated risk factor for cervical cancer. Many of the participants 160(40%) in the study had 3 or more children. This finding agrees with a study carried out by Suma et al. (2014) in which they found majority of the subjects 154 (43.2%) having 3 children or more than 3 children. Also, Saad et al. (2013), Durowade et al. (2012) and Raychaudhuri and Mandal (2012) found multiparity as a risk factor among study subjects. Nerima et al. (2013) study indicates that 43.8% of the participating women had 3 or more children and so bear cervical cancer risk. Furthermore, it was discovered that 29(7.3%) participants gave birth to their first child before the age of 21 years. Study done by Suma et al. (2014) reported that 52.2% of subjects gave birth to their first child before the age of 22 years. Juneja et al. (2003) noted age at the first child was a risk factor for cervical cancer. The relative risk of acquiring the disease was 6 times more in case of women who had first child at age below 20 years (Dutta et al., 1990).

Behavioral risk factors identified in the present study were alcohol consumption, having sexually transmitted infection, having multiple sexual partners and no routine pap smear test. According to a study carried out by Reis et al. (2011), it was found that non ingestion of alcohol decreases risk for cervical cancer while the ingestion of alcohol increases the risk of developing cervical cancer.

Findings from this study also revealed that 58(14.5%) participants had 3 or more sexual partners. Having multiple sexual partners was found to be a risk factor for cervical cancer by Durowade et al. (2012). In their study, they found a statistically significant association between having multiple sexual partners and positive cervical smear. Since cervical cancer is generally regarded as a sexually transmissible condition, sexual behavior has been associated with cervical cancer. Ninety six percent (96%) in the present study had never done Pap test. Neriman et al. (2013) found in their study that a great majority of participating women (82.4%) were considered to be under risk of developing cervical cancer because they have never had Pap test. They indicated that these women are likely to develop cervical cancer because they did not go for early diagnosis of cervical cancer through Pap test. Pap test is cheap and has substantial importance in terms of

early diagnosis of cervical cancer. It is a useful test for identifying females at risk of developing cervical cancer. Negligence of Pap smear test is an important risk factor that prevents early detection.

Finally, the study showed that 101(25.3%) participants that married on or before the age of 21 years had cervical erosion and the association between age at marriage and cervical erosion was found to be statistically significant as shown in Table 3. This finding agrees with a study by Durowade et al. (2012) that found a significant association between respondent's age at marriage and cervical erosion (cervical cancer precursor lesion).

Conclusion

This study showed that various risk factors for cervical cancer (age, marital status, number of children/parity status, age at first child birth, use of alcohol, having sexually transmitted infections, having multiple sexual partner, Pap test negligence and cervical erosion) were present among participants. Cervical cancer is both preventable and a curable disease. Pre-invasive stage of cervical cancer can be detected by screening method using Pap smear which is simple, cost effective and useful test for identifying females at risk of developing cervical cancer. Monogamy, late commencement of sexual activity, personal hygiene and use of barrier contraceptive methods help towards primary prevention. Since lesions of the cervix such as chronic cervical erosions, unhealthy cervix and lacerations are predisposing conditions for malignancy of the cervix, it is of paramount importance to detect these lesions early enough and treat them adequately if cancer of the cervix is to be warded off. Women should undergo regular cytological screening (Pap test) as they form risk group for dysplasia, which may lead to cervical malignancy. Implementation of free cervical cancer screening programme in Government owned hospitals is highly recommended. Suitable programs to impart health education to these vulnerable groups for improving their awareness regarding cervical cancer should be organized. Most importantly, the awareness of women has to be raised through the trainings to be provided by midwives that have significant roles in pregnancy and delivery with house visits and by nurses as the health instructors in women's health topics in the clinical areas.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

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