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Pattern of cervical cancer seen at the National Hospital Abuja: A 6-year review

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ABSTRACT

Background/Objectives: Cancer of the cervix remains a significant public health challenge worldwide, particularly in low- and middle-income countries. Despite advances in prevention and treatment, the burden of the disease disproportionately affects women in low-income regions, where screening and vaccination programs are limited. The widespread adoption of HPV vaccination and enhanced screening programs could significantly reduce the global burden of this disease, particularly in regions with limited healthcare resources. This study sought to examine the pattern of occurrence of cancer of cervix over the years. ***Design/Methods:*** This study is a retrospective study involving the clinical records review of identified cases of cancer of the cervix managed within the hospital between year 2000 and 2006. ***Results:*** The study reviewed 84 confirmed cases of cervical cancer over six years at National Hospital Abuja, analyzing socio-demographic factors, stages of presentation and outcomes. The study reveals key patterns and challenges that align with global literature, underscoring the unique public health implications in Nigeria.The mean age of the patients was 46 years, with the highest incidence observed among younger women aged 31-40 years (28.6%) and 41-50 years (27.4%). ***Conclusion:*** Cancer of the cervix has continued without any reduction. As against the occurrence among older age group from previous studies, younger age groups are becoming targets of this disease. The current trend does not indicate that victory over cervical cancer is imminent therefore, there is need for a mass awareness campaing of cervical cancer prevention. In addition, it is important institutions formulate policies to make cervical smear a routine investigation for early detection.

Keywords: Cancer registry; Cervical cancer; Cancer mortality; Human papiloma virus; Patients health records

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INTRODUCTION

Cancer of the cervix remains a significant public health challenge worldwide, particularly in low- and middle-income countries. The disease originates in the cervix, the lower part of the uterus that connects to the vagina, and it is predominantly caused by persistent infection with high-risk types of the human papilloma virus (HPV)[1]. Although cervical cancer is preventable through screening and HPV vaccination, it remains one of the leading causes of cancer-related mortality among women globally. This is especially, where access to healthcare is limited. Globally, cervical cancer is the fourth most common cancer among women, with an estimated 604,000 new cases and 342,000 deaths in 2020 alone[2].

The burden of the disease disproportionately affects women in low-income regions, where screening and vaccination programs are limited. Sub-Saharan Africa, South Asia, and parts of Latin America report the highest incidence and mortality rates, with women often

being diagnosed at later stages due to inadequate access to early detection programs[3]. The major risk factor for cervical cancer is infection with HPV, a sexually transmitted infection. Of the over 100 HPV types, at least 14 are high-risk and associated with cancer development, with HPV types 16 and 18 being responsible for approximately 70% of cervical cancer cases[4].

Other contributing factors include:
1. **Early onset of sexual activity**: Women, who engage in sexual activity at a young age are more likely to be exposed to HPV.
2. **Multiple sexual partners**: The risk of contracting HPV increases with the number of sexual partners.
3. **Immunosuppression**: Women with weakened immune systems, such as those with HIV, are at a higher risk of persistent HPV infection and subsequent cervical cancer development.
4. Smoking: Tobacco use has been linked to an increased risk of cervical cancer, possibly due to the carcinogenic chemicals in tobacco affecting the cells of the cervix[5]

Cervical cancer develops over time, beginning with precancerous changes in the cervical cells, known as cervical intraepithelial Neoplasia (CIN). These changes can be detected through routine screening and, if untreated, may progress to invasive cervical cancer[6]. The slow progression from infection to cancer makes cervical cancer highly preventable through early detection of abnormal cells and vaccination against HPV.

The primary preventive measure for cervical cancer is the administration of the HPV vaccine. The WHO recommends vaccinating girls aged 9–14 before they become sexually active to ensure they are protected against the most oncogenic HPV strains[2]. Countries with robust vaccination programs, such as Australia and the UK, have witnessed a significant decline in HPV infections and cervical precancers[7]. Screening programs also play a crucial role in cervical cancer prevention.The Papanicolaou (Pap) test and HPV DNA testing are two commonly used methods to detect precancerous lesions. Routine screening enables the identification and treatment of CIN, preventing the progression to invasive cancer[1].
Women with cervical cancer may experience symptoms such as abnormal vaginal bleeding, pelvic pain, and pain during intercourse. Diagnosis typically involves a pelvic examination, colposcopy, and biopsy of suspicious cervical tissue. If cancer is confirmed, imaging tests like MRI or CT scans are used to determine the stage and extent of the disease[8].

The treatment of cervical cancer depends on the stage of the disease. Early-stage cancers can often be treated with surgery, including procedures such as hysterectomy (removal of the uterus) or trachelectomy (removal of the cervix) for women, who wish to preserve fertility[9]. For more advanced cases, a combination of radiotherapy and chemotherapy is commonly used. Radiation therapy aims to destroy cancer cells, while chemotherapy sensitizes the cancer to the effects of radiation[10].

Despite advances in prevention and treatment, cervical cancer continues to be a major health issue in underserved regions. Barriers to care include limited access to HPV vaccines, inadequate screening infrastructure and cultural stigma surrounding women's health. International efforts, such as the WHO's global strategy to eliminate cervical cancer as a public health problem, aim to address these disparities by increasing vaccination coverage, improving screening programs and ensuring access to appropriate treatments[11].

Cervical cancer in women remains a preventable and treatable condition, provided early detection and prevention strategies are effectively implemented. The widespread adoption of HPV vaccination and enhanced screening programs could significantly reduce the global burden of this disease, particularly in regions with limited healthcare resources.

The North Central zone of Nigeria, where this study took place has been shown to be characterized with features capable of advancing this disease due to poor health and socio-economic status. About 77% of the people live below poverty line, and female illiteracy is high. Some women marry at very young age and thus are exposed to high frequency of sexual exposure at early age, total fertility rate is very high, about 6.5 per married women commonly live in polygamous union or looking for sexual partners outside marriage allowing for multiple sexual partners for the men or women. In addition, health services are poorly developed. It is thus obvious that epidemiological factors as itemized above abound to promote the occurrence of this cancer. This study was carried out at National Hospital, Abuja to examine the pattern of occurrence of cancer of cervix over the years.

METHODS

Study setting

National Hospital Abuja, established under the Decree 36 0f 1999 (Now, Act 36 of 1999), commissioned on 22nd May 1999 by the former Head of State, His Excellency, General Abdulsalami Abubakar, and opened its door to patients on 11th October 1999. The Hospital was originally designed to cater for the needs of women and children in Nigeria and West African sub-region with a view to reducing morbidity rate, and to carrying out extensive research into particular causes of women and children-related disease in Africa. It was initially named National Hospital for Women and Children. In order for the vast majority of Nigerians to benefit from the services and modern equipment in the hospital, the scope of its operation was however expanded and the National Hospital, Abuja came into effect from 10th May 2000. Phase 1 of the Hospital contains 200 beds, though, the Centre has facilities expanded up to 500 beds. It is located in plot 132, Central Business District, Abuja, Nigeria. Source: (NHA Information Unit).

The Abuja Cancer Registry is a population-based cancer registry. It started operation as a hospital-based registry in September, 2006. It is situated in the National Hospital, Abuja- FCT, Nigeria, one of the leading apex hospitals in the country and the most competent hospital, where diagnostic and treatment or services including radiotherapy are available. Most patients within the environs and beyond are referred to the hospital. With the collaboration of Federal Ministry of Health and the Institute of Human Virology, Nigeria, a population-based registry started in January, 2009. The Registry is staffed with a Chairman and Registrar with Supervision from the Health Records Department.

Study design

This study is a retrospective study involving the clinical records review of identified cases of cancer of the cervix managed within the hospital between year 2000 and 2006.

Study population (health records)

All health records of female patients, who attended the Oncology clinic and those, who were admitted on the ward (treated for Ca cervix) at the National Hospital Abuja within the period under review.

Sample size and Sampling techniques

Due to the slim number of cases ever attended to, all cervical cancer cases diagnosed and managed within the period under review, were selected for review.

Data collection tools

Secondary data were collected from selected patients' health records of those patients, who were seen within the period under review, using a designed and validated Profoma (see Appendix 1). The Proforma was used to extract data from these records. Relevant information to the study objectives was collected. The records were retrieved from the Health Records Central Library, Oncology clinic and ward, and from the National Hospital Abuja Cancer Registry. Cases were traced to the Histology Laboratory to determine their histological diagnoses.

Data analysis and management

The Statistical Product and Service Solutions (SPSS) Version 16 was used to analyze and compute the data. Descriptive analysis such as frequency distribution and proportions was performed.

Ethical considerations

Ethics requirements demand that patients give explicit consent for their health records to be used in research, but as this was a retrospective study, it was difficult to obtain consent from individual patients. Local research ethics committees can however approve such research, when access to health records is essential for the research and individual personal consent is not practicable. All direct identifiers of patients were removed before data abstraction and subsequent transfer of information onto the computer system. The only possible identifier left was the unit number, which was used to track duplication and monitor abstraction processes. As patient unit number is not given in the study, all patients' health records were essentially de-identified.

RESULTS

This study is a retrospective clinical records review, where a review of patient's health records to assess the patterns of cervical cancer among women attending National Hospital Abuja, Nigeria was carried out. Eighty four (84)

confirmed cases of cervical cancer in various stages were reviewed. There was a persistent and sustained rate of cervical cancer over the period examined.

The Mean age was 46 years lower than what had been found in previous studies. Younger age groups (31-40 and 41-50) were found to be predominantly affected with their respective rates of 28.6% and 27.4% respectively. Cases were found to present mostly in late stage of stage III and IV, and multiple sexual partnership, high parity and poor socio-economic status associated with low literacy level were predisposing factors. Mortality due to the disease was found to be relatively high among the study group.

Table 1: Age distribution of patients with cervical cancer

Age in years	No of cases	%
21-30	9	10.7
31-40	24	28.6
41-50	23	27.4
51-60	16	19
61-70	9	10.7
71-80	3	3.6
Total	**84**	**100**

Recommendations include intensive public health enlightenment campaign on the disease, routine cervical Pap smear to detect early cases of cervical cancer and female education to reduce ignorance.The demographic variables contain in this study include age, address of patient, marital status, parity or number of children, age at marriage, number of marriages, number of wives of husband, stage of cancer at presentation, date of first presentation, treatment plan and outcomes of treatment, among others as presented in tables:

Table 1 shows the distribution of cervical cases according to age. Cases were aged between 21 to 80 years. The mean age was 46.04 ± 11.32 years. Over half of the cases were aged below 50 years with most being within the age group of 31 – 40 years. This shows that cases were in the younger age group as the majority were within this age group of 31 – 40 years.

Table 2 that follows illustrates the proportion of cases according to socio-demographic characteristics.On the basis of marital status, most (89.3%) of the patients were married. Few (9.5%) of them were widows before their presentation at the hospital for medical attention, while 1.2% were already divorced before their presentation. No case of being single or never married among the participants. On the basis of settlement, the majority of patients were from the rural environment (58.33%). Most cases as shown on this table in the section of parity shows that high parity or increasing number of child bearing tends to enhance its occurrence. A significantly lower proportion was found among those with less number of children (21.43%).

Table 2: Other socio-demographic characteristics with cervical cancer distribution

Socio-demographic characteristics	No of patients	%
Marital Status		
Married	75	89.3
Widowed	8	9.5
Divorced	1	1.2
Total	**84**	**100**
Domiciliary		
Urban	35	41.7
Rural	49	58.3
Total	**84**	**100**
No of children (parity)		
≤ 4	18	21.4
4	66	78.6
Total	**84**	**100**

Table 3 shows the distribution of cases on the basis of the stages of cancer at presentation along their socio-demographic characteristics. The table shows that most cases, especially advanced cases were found among the older age group i.e. among those above 40 years of age, except in stage IV, where most cases (II) were diagnosed

among those age 40 years and below. The table also shows that most cases that presented late were from the rural areas. They tend to present with advanced forms of this disease. Those from the urban settings tend to present with early stages of this disease. Most cases appeared in stages III and IV and they are mostly from the rural setting.

Table 3: Other socio-demographic characteristics with cervical cancer distribution

Socio-demographic characteristics	Cancer stages				Total
	I	II	III	IV	
Age					
≤ 40	4	6	12	11	33
40+	8	12	26	5	51
Total	**12**	**18**	**38**	**16**	**84**
Domiciliary					
Urban	12	6	16	1	35
Rural	9	13	21	6	49
Total	**21**	**19**	**37**	**7**	**84**
No of children (parity)					
≤ 4	5	6	13	7	32
4	9	15	26	2	52
Total	**14**	**21**	**39**	**9**	**84**

Again, most cases are those, who have had large number of children. The table shows that stage III is the commonest stage of presentation by the cases and also the commonest form in this hospital. This was followed by stage II and then by the terminal stage IV and stage I as shown by the data in the table above.

As shown on Table 4, mortality rate is shown to be 11.9% i.e. for every ten (10) patients treated, one (1) dies. Of all, 28.6% did not however complete their medical treatment or procedures as they discharged against medical advice to withdraw from treatment. A comparatively higher proportion of the cases was successfully managed through the conventional management procedure and discharged home alive (59.5%).

Table 5 shows the distribution of deaths according to socio-demographic characteristics of cases. On the basis of age, more deaths were recorded among those aged above 40 years (23.1%) as compared to death of 11.8% among those 40 years old and below. There was no significant difference between death rates of these two groups. More deaths were recorded from the urban group (22.2%) compared to the 12.2% death rate among the rural group. There was no significant difference between their death rates. Death was found to be higher with those, who have had less number of children i.e. 4 children and less.

The death rate among this group was found to be 20. 0% when compared to the death rate of 15.0% among those with fewer children. Again no significant difference between their death rates. No difference in death rate between those with early stages (stage I and II) and late stages (stage III and IV). The number of deaths in each group was 5 and their corresponding rates were 17.9% for early stages and 15.7% for late stages However, there was no significance between these rates (p=.05).

Table 4: Treatment outcome

Outcome	No of cases	%
Alive	50	59.5
Dead	10	11.9
Discharged against medical advice (DAMA)	24	28.6
Total	**84**	**100**

DISCUSSION

The study reviewed 84 confirmed cases of cervical cancer over six years at the National Hospital Abuja, analyzing socio-demographic factors, stages of presentation and outcomes. The findings revealed key patterns and challenges that align with global literature, underscoring the unique public health implications in Nigeria.The mean age of the patients was 46 years, with the highest incidence observed among younger women aged 31-40 years (28.6%) and 41-50 years (27.4%). This contrasts with previous studies indicating a higher mean age, suggesting a younger demographic trend in Nigeria, potentially linked to early onset of sexual activity and high parity rates. Early sexual exposure and high parity, which are prevalent in the region, are known risk factors for persistent HPV infection and subsequent cervical cancer development, as supported by previous research[1].

A significant majority of patients (89.3%) were married, and 58.3% resided in rural areas. This rural dominance correlates with late-stage presentation (Stages III and IV) due to limited access to healthcare and screening programs in under-served regions. Similar trends have been noted in other low-resource settings where rural populations experience higher barriers to cervical cancer prevention and treatment (Castle et al., 2020).

Most cases presented in advanced stages (Stage III: 45.2%; Stage IV: 19%), reflecting poor awareness, cultural stigmas and limited screening programs. These late-stage presentations exacerbate treatment challenges and mortality rates, consistent with findings from studies highlighting the importance of early detection in improving outcomes[8].

Mortality rate among the study group was 11.9%, while 28.6% discharged against medical advice, a concern that highlights potential socio-economic barriers or distrust in the healthcare system. This underscores the need for robust health education, advocacy, campaigns and patient support mechanisms. Furthermore, 59.5% of cases were successfully managed, indicating that adequate treatment can significantly improve survival rates when accessible.

Table 5: Characteristics of fully managed cases with proportionate mortality

Socio-demographic characteristics	Outcome		Proportionate death
	Cases	Deaths	
Age			
≤ 40	34	4	11.8
40+	26	6	23.1
Domiciliary			
Urban	27	6	22.2
Rural	33	4	12.1
No of children (parity)			
≤ 4	20	4	20
4	40	6	15
Cancer stage			
Early (I-II_	28	5	17.9
Advanced (III-IV)	32	5	15.6

The findings reveal critical gaps in cervical cancer prevention and management in Nigeria. Notable factors include low literacy levels, poor socio-economic status and insufficient healthcare infrastructure. Strategies such as widespread HPV vaccination and routine cervical screening are essential. Similar initiatives in other countries, like Australia's HPV vaccination program, have demonstrated success in reducing disease incidence and mortality[7].

In summary, these findings align with global evidence emphasizing the importance of early detection and vaccination to reduce cervical cancer burden. The WHO recommends HPV vaccination for girls aged 9–14 and routine screening to detect and treat precancerous lesions early, measures that could address the challenges seen in this study population[11].

Furthermore, public health campaigns targeting rural communities and addressing socio-economic barriers are crucial to reducing disparities and late-stage presentations. It also highlights the persistent burden of cervical cancer in Abuja, Nigeria. It also reinforces the global understanding that prevention and early intervention are key to combating this disease. Implementing these measures, as suggested by international guidelines, could significantly improve outcomes for women in similar settings.

Limitations to the study

This relies mainly on information contained in the patients' health records. It is typical to encounter incomplete data and or missing notes or mislaying of entire recruited records. This is capable of creating gaps in available information for this study. These might have in a little way affected the quality of data collection.

CONCLUSION

Evidence from this research shows that cancer of the cervix has continued without any reduction. The study shows persistent unreduced level of cases over the years. As against the occurrence among older age group from previous studies, this study shows that younger age groups are becoming targets of this disease. Socio-demographic status such as rural dwelling, parity does not seem to significantly determine the occurrence of this disease. In the time past (previous studies), more cases were found among rural population and those with high frequency of child birth. In this present study, no such differences were seen to have occurred. Mortality among victims was previously found to be relatively low. In this study, mortality rate was found to be high (11.9%).

Late presentation, just like in other studies was a common phenomenon in this study. This study reminds the healthcare provider of the need to pay close attention to this disease. The current trend does not indicate that victory over cervical cancer is imminent. The involvement of younger age group and late presentation, which do not indicate good prognosis or outcome indicate the need for adequate surveillance to reduce the increasing death rate recorded among this group studied. .

Recommendations

1. Need for health education program to create awareness on this disease among the people.
2. There is the need to institute cervical smear as a routine investigation for women to detect early cases. This would ensure it is cured as early diagnosis is thereby achieved.
3. Promotion of female education to enhance the knowledge level of women and thereby reduce ignorance that hinders women understanding of their health problems.
4. Cancer Registries should be given more attention to enhance clinical decisions, followup and treatment.
5. The combination of improved screening and treatment of pre-malignant conditions with effective HPV vaccination has the best potential to reduce the burden of cancer of the cervix significantly.
6. There is need for additional centers to be established for effective treatment and palliative care among women, who diagnosed with a case of cancer.

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REFERENCES

1. Arbyn M, Weiderpass E, Bruni L *et al.* Estimates of incidence and mortality of cervical cancer in 2018: A worldwide analysis. *The Lancet Global Health.* 2020;8(2):e191-e203. doi:10.1016/S2214-109X(19)30482-6.
2. World Health Organization (WHO). Cervical cancer, 2021. https://www.who.int/news-room/fact-sheets/detail/cervical-cancer.
3. Bruni L, Albero G, Serrano B, *et al.* S. ICO/IARC Information Centre on HPV and Cancer (HPV Information Centre). Human Papilloma virus and Related Diseases in the World. Summary Report, 2021. https://hpvcentre.net/statistics/reports/XWX.pdf.
4. de Sanjose S, Quint WG, Alemany L, *et al.* Human papillomavirus genotype attribution in invasive cervical cancer: A retrospective cross-sectional worldwide study. *The Lancet Oncology.* 2018;11(11):1048-1056. doi:10.1016/S1470-2045(10)70230-8.
5. International Agency for Research on Cancer (IARC). *Personal habits and indoor combustions. Volume 100E. A review of human carcinogens*. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, 2012. https://monographs.iarc.who.int/wp-content/uploads/2018/06/mono100E.pdf.
6. Castle PE, Maza M, Gage JC. The development of cervical cancer screening in Latin America. *Clinical Obstetrics and Gynecology.* 2020;63(1):38-48. doi:10.1097/GRF.0000000000000502.
7. Drolet M, Bénard É, Pérez N, Brisson M, HPV Vaccination Impact Study Group. Population-level impact and herd effects following the introduction of human papilloma virus vaccination programme: Updated systematic review and meta-analysis. *The Lancet.* 2019;394(10197):497-509. doi:10.1016/S0140-6736(19)30298-3.
8. Bhatla N, Aoki D, Sharma DN, Sankaranarayanan R. Cancer of the cervix uteri. *International Journal of Gynecology & Obstetrics.* 2018;143(Suppl 2):22-36. doi:10.1002/ijgo.12611.
9. Pecorelli S. Revised FIGO staging for carcinoma of the cervix. *International Journal of Gynecology & Obstetrics.* 2009;105(2):107-108. doi:10.1016/j.ijgo.2009.02.009.
10. Peters WA, Liu PY, Barrett RJ, *et al.* Concurrent chemotherapy and pelvic radiation therapy compared with pelvic radiation therapy alone as adjuvant therapy after radical surgery in high-risk early-stage cancer of the cervix. *Journal of Clinical Oncology.* 2015;18(8):1606-1613. doi:10.1200/JCO.2000.18.8.1606.
11. World Health Organization (WHO). *Global strategy to accelerate the elimination of cervical cancer as a public health problem,* 2020. https://www.who.int/publications/i/item/9789240014107.

Authors Contribution:

MS conceived of the study, initiated the design, participated in literature search, data abstraction and collection, analysis and coordination. AIT supervised the conception, design, literature search and participated in data abstraction and collection, analysis, coordination and reworked and reviewed the final manuscript. SQB, AAA and NS participated in the design, literature search, records retrieval, technical process, data abstraction, data analysis and coordination and reviewed the final manuscript.

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