

GYNAECOLOGICAL MALIGNANCIES IN NIGERIA: A SCOPING REVIEW

ABSTRACT

Introduction: Gynaecological malignancy is the major cause of death in women. The estimation of gynaecological epidemiology is invaluable in setting priorities for its control. Up until this point, no study has elucidated the epidemiological burden in Nigerian women. **Methods:** Our work covered all [not sure, change "all"] published articles on gynaecological malignancies in Nigeria. The terms of search are "Gynaecological malignancies" and "Nigeria". We searched databases (PubMed, AJOL, Research4Life, Science Direct, Scopus, and Google Scholar), journal homepagehomepages(BMC, Sahel Medical Journal), and free web searchsearches for related papers. Downloaded papers are assessed for eligibility following PRISMA 2009. **Results:** The charted data indicated that cervical, ovarian, and uterine were the commonest forms of cancer. The charted data indicated that cervical, ovarian, and uterine cancer were the commonest forms. The rarest was fallopian tube cancers. Developed cities in Nigeria, such as Lagos, Zaria, Anambra, and Enugu had the highest number of publications while less developed states; Imo, Lokoja, Oyo, Akwa Ibom, Bauchi, Benin, Delta, Kebbi and Ogun states had the least number of publications. Histological screening was the major means of diagnosis. Risk factors for some of the reported cases include active sexual history, age, parity, family history, vaginal bleeding[vaginal bleeding is a sign/symptom and not a risk factor], among others. **Conclusions:** The distribution pattern of gynaecological cancers is consistent with what is obtainable in world over where cervical, ovarian, and uterine cancers were identified as the most common types of cancer. National screening protocol, national health insurance schemes, and workforce education is key to early detection and mitigating the disease's state stage and improving survival outcomes.

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Keywords: Gynaecological Malignancies, Ovarian cancer, Fallopian tube cancer, Endometrial cancer, Vulva cancer, Vagina cancer, Prevalence, Incidence.

1. INTRODUCTION

Gynaecological cancers are public health [concerned] diseases and contribute to the global burden of diseases[1]. Gynaecological cancer encompasses a range of tumors with varying epidemiology, pathology, and treatment strategies[2]. It is the growth and spread of cancer cells throughout the reproductive organs of women with cervical, ovarian, uterine, vaginal and vulva as the most common ones[3]. Fallopian tube cancer though present rarely occurs. Gynecologic malignant patients are generally asymptomatic in the early stage of disease, with symptoms appearing as the cancer progresses[4] while ovarian cancer patient remains asymptomatic until the disease has metastasized[5]. More than one fourth of new cases of cancer in females are related to gynaecological cancer with more than 80% occurring between the age of 35–64[6]. The diagnosis of gynaecological cancer changes the lives of cancer patients and their partners. Women experience negative consequences in terms of sexual, psychological and social functioning[7]. Experts have projected a continued increase in the number of cancers with more adverse consequences in developing countries, such as Nigeria[1][8]. The estimation of cancer burden is necessary to set up priorities for disease control[9]. Thus, lack of adequate information is one of the major problems preventing cancer control strategies in Nigeria. This article will provide an overview on the exact situation and extent of gynaecological cancers in Nigeria based on

recent data on the burden thus serving as basis for the development of strategies for prevention and control of gynecologic cancer in Nigeria in the near future.

2. METHOD

2.1 Study Design

Scoping review is used to map the key concepts underpinning a research area and the main sources and types of evidence available[10] Scoping reviews can map evidence in a number of ways.[11] It involves the syntheses of findings from different types of study.[11] This scoping review aimed to collate, synthesize, and analyze the wide range of available evidence to map literature on the burden of Gynaecological cancer in Nigeria. The scoping review used the Arksey and O'Malley framework[12],[13] as reviewed and updated by Levac et al.[14] Arksey and O'Malley framework involves 5 distinctive steps;

Stage 1: identifying the research question

Stage 2: identifying relevant studies

Stage 3: study selection

Stage 4: charting the data

Stage 5: collating, summarizing and reporting the results

The result of the scoping review was reported using the Preferred Reporting Items for Systematic Reviews and Meta-analysis: Extension for Scoping Reviews (PRISMA-ScR) guidelines[15].

2.2 Research question

The aim of this scoping review is to establish existing evidence and extent of research of gynaecological cancers (cervical, ovarian, uterine, vaginal, vulva and fallopian tube) in Nigeria. Epidemiological burden is measured with respect to incidence, prevalence and mortality.

The secondary research questions include:

- What evidence of gynaecological cancer research exists in Nigeria?
- What evidence exists on potential screening techniques/methods/recommendations for gynaecological cancers in Nigeria?
- What evidence exists on the kind of gynaecological cancers frequently encountered in Nigeria?
- What evidence exists on the trend of gynaecological cancer in Nigeria?

The eligibility of the review question was validated using the Population, Concept and Context (PCC) mnemonic, derived by the Joanna Briggs Institute. [10]

Table 1: PCC defining the eligibility of the main scoping review question

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| P-population: Women |
| C-Concept: Gynaecological malignancies: Ovarian, Uterine (endometrial), Vaginal, Vulva Cervical and Fallopian tube cancers |
| C-Context: The epidemiological burden (incidence, morbidity, prevalence, and mortality); and potential screening methods/ techniques in Nigeria. |

2.3 Information sources

Studies published in English were identified by electronically searching PubMed, Google scholar, African journal online library, HINARI, Science daily, free web search, Medline and the Cochrane Database.

Reference lists of relevant articles were assessed and included in the review. The keywords ranged [were] from “Gynaecological malignancies”, “Nigeria” and “cancer”. Some of the authors were contacted directly for further clarifications pertaining to their study.

2.4 Search strategy

A three step search strategy was utilized based on the JBI types of reviews[10]. The first step is an initial limited search of at two online databases (Pubmed, AJOL) relevant to the topic. This initial search was followed by an analysis of the text words contained in the title and abstract of retrieved papers, and of the index terms used to describe the articles. A second search was done using all identified keywords and index terms and undertaken across all included databases. Thirdly, the reference list of all identified reports and articles were searched for additional studies. In cases of confusion the authors of primary studies or reviews were contacted for further information via research gate and direct mails.

2.5 Selection procedure

The principal investigator conducted an extensive title screening guided by this review’s eligibility criteria and all eligible studies imported to a folder created in Mendeley reference manager for the study. The library created was cleaned for duplicate before the titles, full text and abstract cleaning stage. Subsequently, the cleaned library was shared among the review team. The abstract and full texts were screened independently with emphasis on the eligibility criteria. In the event of uncertainty as to whether articles met the criteria for study inclusion were discussed as a team. Names of authors from articles in the search results were not blinded for abstract or full-text review.

2.6 Selection criteria

Articles reporting on gynaecological malignancies in Nigeria were included. Based on the abstract, articles of all types with any data on prevalence, incidence, management and classification were included for further screening. Studies were included or excluded following predefined criteria.

2.6.1 Inclusion criteria

Studies conducted in Nigeria.

Studies based on human participants (women).

Studies on gynecologygynecologic cancers (ovarian, uterine, endometrial, vaginal, fallopian tube, cervical and vulva)

Studies reporting on the epidemiological burden (morbidity, incidence, prevalence, and mortality) Studies that reported findings on the risk factors of gynaecological malignancies

Studies evaluating the quality of life of patients living with gynaecological cancers

Primary study designs (quantitative, qualitative, and mixed methods studies)

Case reports and case series

Studies that involved diagnosis and screening

Studies in English language

Hysterectomy for gynaecological malignancies

Studies on genital tract cancer

2.6.2 Exclusion criteria

Studies focused on other cancer.

Studies focused on economic burden of gynaecological cancers.

Gray literature, conference papers, opinions, editorials, theses, dissertations, and unpublished studies.

Articles without full text

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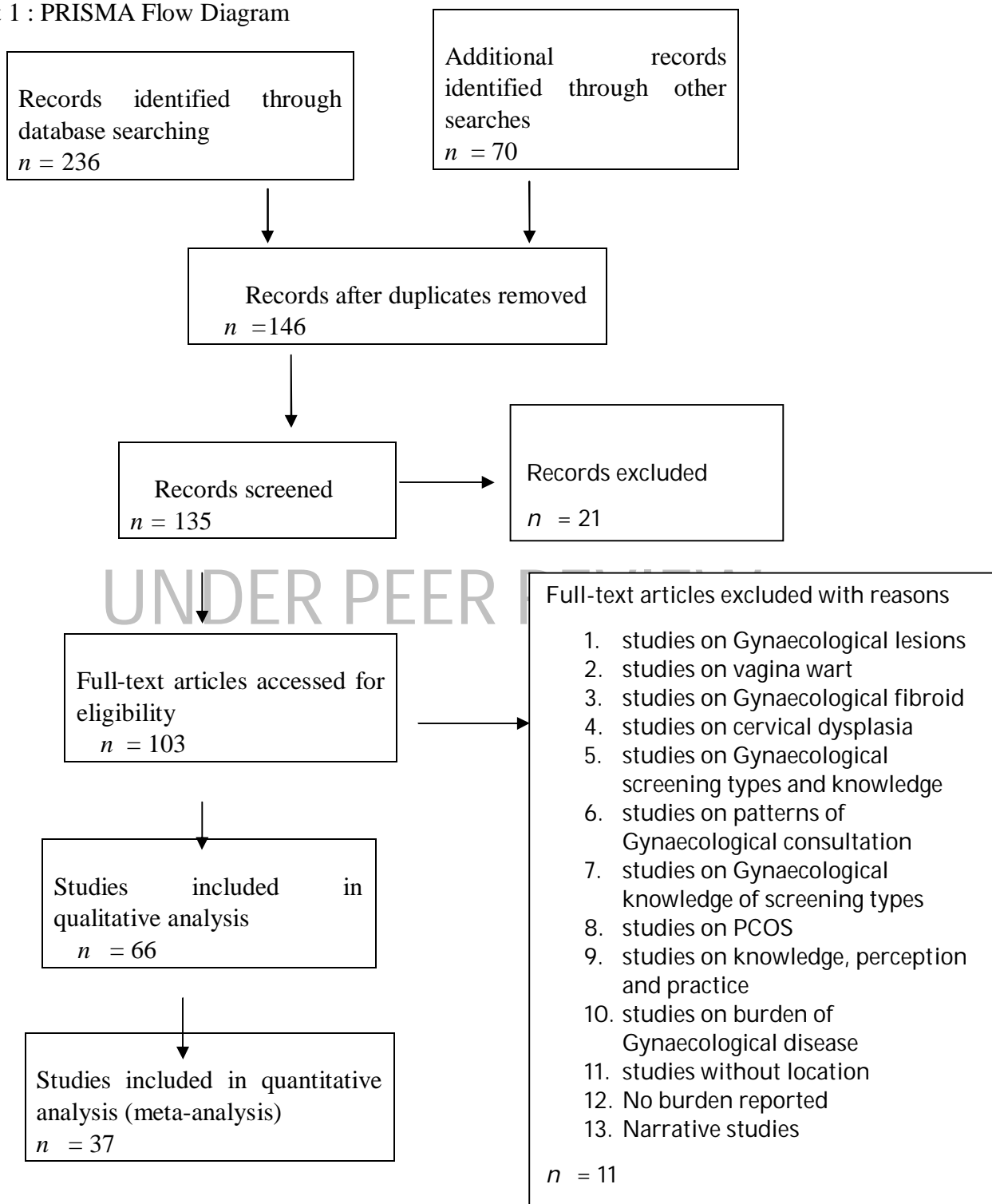
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Search: ((((((Gynaecological malignancies in Nigeria OR ovarian cancer in Nigeria OR Cervical cancer in Nigeria OR fallopian tube cancer in Nigeria OR vulva cancer in Nigeria OR vaginal cancer in Nigeria OR uterine cancer in Nigeria OR screening of Gynaecological malignancies in Nigeria OR screening of cervical cancer in Nigeria OR screening of ovarian cancer in Nigeria OR screening of vulva cancer in Nigeria OR screening of vagina cancer in Nigeria OR screening of endometrial cancer in Nigeria OR screening of uterine cancer in Nigeria OR quality of life of Gynaecological cancer patients in Nigeria OR epidemiology of Gynaecological malignancies in Nigeria)))))))))

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Chart 1 : PRISMA Flow Diagram



2.7 Charting the data

We extracted all the findings from the included articles aimed at answering the main scoping review question. For this purpose, an electronic charting form was developed for data extraction. The data extraction tool was piloted by two independent reviewers before use. The data extraction form was further refined at the review stage and the charting table updated accordingly until all relevant and applicable information has been extracted.

The data of interest were as follows:

Author and year of publication

Study title

Aim/objective of the study

Geographical location of the study

Type of study design

Study setting (such as facility-based, community-based, others)

Number of study participants

Mean age/range of study population (women)

Type of Gynaecological cancer

Type of burden reported (incidence, prevalence, morbidity, mortality)

Potential screening techniques

2.8 Study characteristics

List 1 : Literature review showing types of cancer in different location

| AUTHOR | Year | TOPIC | Location | Types of Cancer |
|-----------------------|-------------|--|-----------------|---|
| Takai I. U et al[16] | 2016 | A 2-Decade Review Of Histopathological Pattern of Endometrial Samples at a Referral Centre In Northern Nigeria | Maiduguri | choriocarcinoma, endometrial |
| Udigwe, &Ogabido [17] | 2008 | A Clinico-pathological study of cervical carcinoma in south eastern Nigeria; a five year retrospective study | Anambra | Cervical carcinoma |
| Muhammad et al[18] | 2017 | A diary of endometrial malignancies in Zaria, Northern Nigeria | Zaria | endometrial malignancies |
| Okunade et al[19] | 2016 | A Five Year Review of Ovarian Cancer at a Tertiary Institution in Lagos, South-West, Nigeria | Lagos | Ovarian |
| Usman et al[20] | 2017 | A Five-Year Review of Female Genital Tract Malignancies at the University of Maiduguri Teaching Hospital, Maiduguri, Nigeria | Maiduguri | Cervical, ovarian, uterine, endometrial, choriocarcinoma, vulva |
| Sule A.A et al[21] | 2017 | A histopathologic review of cervical cancer in Kano, Nigeria | Kano | Cervical |
| Silas O.A et al[22] | 2022 | A Histopathologic Review of Cervical Cancers in Jos University Teaching Hospital, Jos, Nigeria | Jos | Cervix |
| Forae et al[23] | 2014 | A histopathological overview of ovarian lesions in Benin City, Nigeria: How common are the functional cysts? | Benin | ovarian |
| Mohammed et | 2022 | A histopathological study of ovarian neoplasms in children in | Zaria | Ovarian |

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|--------------------|-----|------|--|---------|--|
| al[24] | | | a tertiary hospital of northern Nigeria | | |
| Udigwe et al. | | 2011 | A review of the prevalence and pattern of presentation of gynaecological cancers in a tertiary hospital in Nnewi, South-East Nigeria | Anambra | cervical, fallopian tube vulva |
| Okolo et al.[25] | | 2013 | A Review of Vulvar and Vaginal Cancers in Ibadan, Nigeria | Ibadan | Vulvar ,Vaginal |
| Mandong et al[26] | | 2003 | A ten-year review of gynaecological malignancies in Jos university teaching hospital, Jos, Nigeria (1990-1999) | Jos | cervical,endometrial, ovarian ,vulva |
| Iyoke et al | | 2011 | A ten-year review of ovarian cancer in Enugu, South east Nigeria | Enugu | Ovarian cancer |
| Adewuyi al[27] | et | 2015 | Age distribution, site of origin and HIV status of cases of gynaecological malignancies seen at a radiotherapy facility in Northern Nigeria | Zaria | cervical,ovarian, endometrial vagina,vulva |
| Sabageh al[28] | et | 2012 | An Analysis of the Clinicopathologic Characteristics of Ovarian tumours in Ile-Ife, Nigeria | Osun | Ovarian |
| Ogunlaja et al[29] | O.A | 2022 | An appraisal of pattern and presentation of gynaecological malignancies in Bowen University Teaching Hospital, Southwest Nigeria | Oyo | Cervical |
| Eke BA et al. | | 2017 | An Epidemiological Analysis of the Pattern of Breast and Gynaecological Cancers at Federal Medical Center and Benue State University Teaching Hospital, Makurdi, North-Central Nigeria | Benue | cervical, ovarian,endometrial |
| Anorlu et al. | | 2010 | Cancer mortality among patients admitted to Gynaecological wards at Lagos University Teaching Hospital, Nigeria. | Lagos | cervical,ovarian,vulva endometrial, choriocarcinoma, |
| Ijaiya M.A al.[30] | et | 2004 | Cancer of the cervix in illorin, Nigeria | Illorin | Cervical cancer |
| Oguntayo al[31] | et | 2011 | Cancer of the cervix in Zaria, Northern Nigeria. | Zaria | Cancer of the cervix |
| okonkwo al[32] | et | 2008 | Cancer of the Ovary in Nnewi, Nigeria | Anambra | Ovarian |
| Ago et al[33] | | 2013 | Cancer of the uterine cervix at the University of Calabar Teaching hospital, Calabar Nigeria | Calabar | uterine cervix |
| Adelusi B[34]. | | 1977 | carcinoma of the cervix uteri in Ibadan: coital characteristics | Ibadan | cervix uterine |
| Eze et al.[35] | | 2012 | Cervical cancer awareness and cervical screening uptake at the Mater Misericordiae Hospital, Afikpo, Southeast Nigeria. | Ebonyi | Cervical Cancer |
| Omotoso al[36] | et | 2010 | Cervical Cancer in Calabar , Nigeria | Calabar | cervical cancer |
| Adebayo al[37] | et | 2022 | Cervical leiomyosarcoma in a teenage girl : A rare form of uterine | Lokoja | Cervical leiomyosarcoma |

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|-----------------------------------|------|---|-----------|--|
| Iyoke et al[38] | 2014 | Challenges associated with the management of Gynaecological cancers in a tertiary hospital in south east Nigeria | Enugu | cervical,ovarian,vulva, ,endometrial, choriocarcioma |
| Umar et al[39] | 2008 | Childhood and Adolescent Reproductive Tract Tumours in Zaria | Zaria | ovary, cervix, uterus |
| Ajani et al[40] | 2016 | Childhood ovarian neoplasms in Ibadan, South-western Nigeria | ibadan | Ovarian |
| Ikechebelu1 et al[41] | 2010 | Clinicopathological analysis of cervical cancer seen in a tertiary health facility in Nnewi, south-east Nigeria | Anambra | Cervical |
| Samaila1 et al[42] | 2012 | Cutaneous umbilical metastases in post-menopausal females with gynaecological malignancies | | cerival,ovarian, endometrial |
| OMIGBODUN et al[43] | | Cytologic detection of urinary bladder involvement in cervical cancer | ibadan | Cervical |
| Zayyan et al[44] | 2019 | D-dimer levels as marker of deep vein thrombosis in patients with cervical cancer: A study of a northern Nigerian patient population Marliyya | Zaria | Cervical |
| Rabiu et al[45] | 2013 | Delays in presentation and management of ovarian cancer in Lagos, Nigeria | Lagos | Ovarian |
| Adekanbi et al | 2016 | Endometrial Cancer in Ibadan: Epidemiological and Clinico-pathological Features -10 Year Review | Ibadan | endometrial cancer |
| Umezulike et al[46] | 2007 | Epidemiological characteristics of carcinoma of the cervix in the federal capital territory of Nigeria. | FCT | Cervix |
| Okeke T.A et al.[47] | 1999 | Epidemiological Studies of a cervical cancer screening programme population | Enugu | Cervical |
| Sahabi &Abdullahi[48] | 2017 | Epidemiological Survey of Malignant Neoplasms in Sokoto, Nigeria | Sokoto | Cervical,ovarian endometrial |
| Marliyya Sanusi Zayyan et al [49] | 2017 | Epidemiology of ovarian cancers in Zaria, Northern Nigeria: a 10 year study | Zaria | Ovarian cancers |
| Osakwe CR et al[50] | 2016 | Evaluation Of Histologically Confirmed Carcinoma Of The Cervix In Nnewi Nigeria: A five year review | Anambra | Cervical |
| ADEFUYE et al[51] | 2014 | Female genital tract cancers in Sagamu, Southwest, Nigeria | Ogun | cervical,Endometrial,ovarian, choriocarcinoma,vulval |
| Agboeze et al[52] | 2015 | Frequency and Pattern of Gynaecological Cancers in Federal Teaching Hospital, Abakiliki, Nigeria | Abakiliki | cervical,ovarian,vulvachorio carcinoma,endometrial |
| Obodo et al[53] | 2009 | P1077 Gynaecological deaths in a tertiary hospital in Lagos: A 6-year review | Lagos | cervical,ovarian,endometria l, choriocarcinoma |

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|-------------------------|---------|--|-----------|--|
| Aminu et al[54] | 2020 | Gynaecological malignancies in Azare, North-East Nigeria: an assessment of types, stage at presentation and treatment affordability | Bauchi | cervical,ovarian,endometrial |
| Omotoso al.[55] | et 2018 | Gynaecological Malignancies in Calabar, Nigeria: A Tertiary Hospital Based Study | Calabar | cervical,corpiusuteri,endometrial,myometrium,ovarian,vulva, vagina |
| Galadanci al[56] | et 2003 | Gynaecological Malignancies Seen in a Tertiary Health Facility in Kano, Northern Nigeria | Kano | cervical, ovarian, corpus uteri, vulva,vaginal |
| Umeobika al[57] | et 2018 | Gynaecological Malignant Tumours at Imo State University Teaching Hospital Orlu South Eastern Nigeria | Imo | cervical.ovarian,uteri,vagina,endometrial, choriocarcinoma |
| Uchendu Obiora Jude[58] | 2022 | Gynaecological lesions in Delta State, Nigeria: A hospital based histopathologic study | Delta | Cervical, Endometrial,Ovarian |
| Yakasai al[59] | et 2013 | Gynaecological malignancies in Aminu Kano Teaching Hospital Kano: A 3 year review | kano | cervical,ovarian,endometrial,choriocarcinoma |
| Galadanci al[59] | et 2003 | Gynecological malignancies in Aminu Kano Teaching Hospital Kano : A 3 year review | kano | cervical,ovarian,vulva,vagina, corpus uteri |
| Omoniyi-Esan et al[60] | 2004 | Histological Pattern of cervical malignancies in southwestern Nigeria | Osun | Cervical |
| Obed et al[61] | 1999 | Histological types of ovarian tumours as seen in an African teaching hospital in north ± eastern | Maiduguri | Ovarian |
| Omenai al[62] | et 2020 | Histopathological characteristics of carcinoma of the uterine cervix in a tertiary hospital in southern Nigeria Sebastian | ibadan | Uterine cervix |
| Nnadi et al[63] | 2014 | Histo-pathological Features of Genital Tract Malignancies as Seen in a Tertiary Health Center in North-Western Nigeria: A 10-year Review | Sokoto | Cervical, ovarian,vagina, choriocarcinoma, |
| Nnadi et al | 2009 | Histo-Pathological Features Of Primary Ovarian Tumours Managed In A Tertiary Hospital, Sokoto | Sokoto | Ovarian |
| Musa J et al | 2019 | HIV status, age at cervical cancer screening and cervical cytology outcomes in an opportunistic screening setting in Nigeria: a 10- year cross-sectional data analysis. | Jos | Cervical |
| Awoyesuku al[64] | et 2021 | Hysterectomy for primary gynaecological malignancies in a non-cancer centre: prevalence, indications and surgical outcomes at a tertiary hospital in Port-Harcourt, Nigeria: a six-year review | Rivers | endometrial, cervical,ovarian |
| Iyoke et al[65] | 2013 | Incidence ,pattern and management of Ovarian Cancer at a tertiary medical center in Enugu, South East Nigeria | Enugu | Ovarian cancer |
| G. A. Ebughe et al.[36] | 2016 | Incidence of Cervical Cancer in Calabar, Nigeria. | Calabar | Cervical |

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|-------------------------|------|---|-----------|---|
| Alakaloko et al[66] | 2014 | Investigation Of Endometrial Cancer and Associated Risk Factors At Lagos University Teaching Hospital, Nigeria: A 5-Year Review | Lagos | Endometrial |
| Nwosu S.O and S E Anya. | 2004 | Malignancies of the female genital tract at the University of Port Harcourt Teaching Hospital: a ten year review – 1990-1999 | Rivers | cervical,endometrial,ovarian,vulva,vagina |
| Kyari et al[67] | 2004 | Malignant tumours of female genital tract in North Eastern Nigeria | Maidugari | cervical, ovarian, uterine |
| Ogunbiyi et al[68] | | Malignant tumours of the corpus uteri in Nigerian women | Ibadan | corpus uterine |
| Mohammed et al[69] | 2006 | Malignant tumours of the female genital tract in Zaria, Nigeria. Analysis of 513 cases | Zaria | ccervical,corpusuteri,ovarian |
| Eke Et Al[70] | 2010 | Management Options For Vulvar Carcinoma In A Low Resource Setting | Anambra | Vulva, |
| R Adejumo[70] | 2020 | Ovarian Cancer Epidemiology In Jigawa, Nigeria.A 4 Year Review | Jigawa | Ovarian |
| Odukogbe Et Al[71] | 2004 | Ovarian Cancer In Ibadan: Characteristics And Management* | Ibadan | Ovarian |
| Forae Et Al[72] | 2016 | Ovarian Tumors Among Nigerian Females: A Private Practice Experience In Benin-City, Nigeria | Benin | Ovarian |
| Adegbesan et al[73] | 2009 | P969 Knowledge and perception of cancer of the cervix among women with invasive cervical cancer in Lagos, Nigeria | Lagos | Cervix |
| Eke et al[74] | 2009 | P971 Carcinoma of the ovary in a Nigerian tertiary hospital | Anambra | Ovary |
| Fubara et al[75] | 2007 | Pathology of vaginal cancers in port-harcourt, Nigeria. A 14-year study | Rivers | vagina cancer |
| Abdullahi et al[76] | 2020 | Pattern and relative frequencies of Gynaecological malignancies at the University of Abuja Teaching Hospital, Abuja | Abuja | cervical.ovarian, vulva,endometrial, choriocarcinoma, |
| Ibrahim SA et al[77] | 2011 | Pattern OfGynaecological Admissions In Aminu Kano Teaching Hospital: A Three Year Review | Kano | cervix, ovary |
| Ugwu EO et al[78] | 2011 | Pattern of gynaecological cancers in university of nigeria Teaching Hospital Enugu, South Eastern Nigeria | Enugu | cervical,ovarian,choriocarcinoma, endometrial |
| Ibrahim H.M et al[79] | 2013 | Pattern of gynaecological malignancies at the University of Ilorin Teaching Hospital, Ilorin, Nigeria | Ilorin | cervical,ovarian, uterine, vulva1,vaginal |
| Osinachi et al[80] | 2020 | Pattern of gynaecological malignancies in a Nigerian tertiary hospital | Abuja | cervical,ovarian,Endometrial,Choriocarcinoma,vulva |
| Sanni et al.[81] | 2013 | Pattern OfGynaecological Malignancies In Jos | Jos | uterine,ovary,cervix,vagina, |

| | | | | | |
|----------------------------|------|---|-----------|--|---|
| | | | | | vulva |
| Ugwu et al[78] | 2011 | Original Article Pattern Of Gynaecological Cancers In University Of Nigeria Teaching Hospital , Enugu , South Eastern Nigeria | Enugu | | ovary,cervix,leiomyosarcoma,choriocarcinoma |
| Fubara et al | 2003 | Pattern Of Primary Female Genital Cancer Port- Harcourt, Nigeria: A 12-Year Review | Rivers | | Cervix,ovary,vagina,vulva,uterus |
| Briggs N.D &KatchyK.C.[82] | 1990 | Pattern Of Primary Gynecological Malignancies As Seen In A Tertiary Hospital Situated In The Rivers State Of Nigeria | Rivers | | vulva,cervix,endometrium,ovary |
| Popoola et al[83] | 2013 | Prevalence and Pattern of Cancers among Adults Attending a Tertiary Health Institution in Lagos, Nigeria | Lagos | | Ovarian,endometrial,cervical |
| Awofeso et al[84] | 2019 | Prevalence and Pattern of Late - Stage Presentation in Women with Breast and Cervical Cancers in Lagos University Teaching | Lagos | | Cervical cancer |
| Ikechebelu[41] | 2005 | Clinicopathological analysis of cervical cancer seen in a tertiary health facility in Nnewi , south-east Nigeria | Anambra | | Ovary |
| kabir et al[85] | 2019 | Prevalence of human papillomavirus genotypes in cervical cancer in Maiduguri, Nigeria | Maiduguri | | Cervical |
| Ugwu et al[86] | 2019 | Primary vaginal adenocarcinoma of intestinal-type: case report of a rare gynaecological tumour | Lagos | | Vagina |
| Okunowo et al[87] | 2020 | Primary vaginal leiomyosarcoma: case report of a rare gynaecological malignancy and diagnostic challenge in a resource-constraint setting | Lagos | | vagina leiomyosarcoma |
| Goddy et al[88] | 2015 | Profile and retrospective analysis of the use of preventive strategies in patients with cervical cancer in | Rivers | | Cervical |
| Olaleye et al[89] | 2019 | Profile of Gynaecological Malignancies in Alex Ekwueme Federal Teaching Hospital, Abakaliki, Southeastern Nigeria | Abakiliki | | cervical,ovarian,endometrial,vulva1,vaginal,choriocarcinoma |
| Zayyan et al[90] | 2018 | Quality of life in patients with advanced cervical cancer in Nigeria | Zaria | | Cervical |
| Okunade et al[91] | 2020 | Risk predictors of early recurrence in women with epithelial ovarian cancer in Lagos, Nigeria | Lagos | | epithelial ovarian cancer |
| Nnadi Dc et al.[92] | 2014 | Screening for cervical cancer: A review of outcome among infertile women in a tertiary hospital in North-West Nigeria | Sokoto | | Cervical cancer |
| Adewuyi& Rafinadadi[93] | 2007 | Sociodemographic and clinicopathologic characterization of cervical cancers in northern Nigeria | Zaria | | Cervical |
| Oguntayo et al[94] | 2013 | The burden of Gynecological cancer management in Northern Nigeria | Zaria | | Cervical |

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|------------------------|----------|--|---------------|------------------------------------|
| Okeke et al[95] | 2013 | The Frequency and Pattern of Female Genital Tract Malignancies at the University of Nigeria Teaching | Enugu | cervix,ovarian,corpiusuteri, vulva |
| Nwafor &Nwafor N.N[96] | C.C 2018 | The Pattern and Distribution of Cancers in Akwa Ibom State, Nigeria | Akwa Ibom | cervical cancer |
| Adekunle al[97] | et 2016 | The pattern of carcinoma of the vulva in Zaria, Northern Nigeria | Zaria | Vulva |
| BOBZOM al[98] | et 1997 | Types of ovarian tumours seen in Benin-City, | Benin | granulosa cell tumour |
| Fubara et al[99] | 2007 | Uterine sarcomas in Port Harcourt, Nigeria A 12-year clinico-pathologic study | River | Uterine |
| Sodje et al[100] | 2015 | Vulva Carcinoma at The University Of Benin Teaching Hospital (UBTH); A Ten Year Review | Benin | Vulva,ovarian,endometrial,c ervix |
| Malami al[101] | et 2007 | A Descriptive retrospective study of the pattern of malignant disease in Sokoto, north western Nigeria (1999-2004) | Sokoto | cervix uteri, ovary |
| Olufunsho al[102] | et 2011 | Cancer distribution pattern in south western Nigeria | Lagos, Ibadan | cervical cancer |
| Akinde al[103] | et 2015 | Cancer mortality pattern in Lagos teaching hospital, Lagos Nigeria | Lagos | cervix, ovary |
| Ekamem&Parkin[36] | 2016 | 5 year cancer incidence in Calabar Nigeria (2009-2013) | Calabar | cervix, uterine, ovary |

2.9 Quality Appraisal

Mixed Methods Appraisal Tool (MMAT) V.2018[104] software was used to assess the quality of included literatures. This is because it permits the appraisal of heterogeneous study designs.

The tool included the relevance of the study to the research question, the study design, adequacy and methodology, data collection, data analysis and the main study findings. The process of quality appraisal was performed independently and in duplicate by two review authors to avoid any bias. Disagreements between reviewers were resolved through discussion.

List 2 :MMAT Table for studies undertaken in Nigeria

| Study Type | Questions | Yes | No | Can't tell | Total |
|--------------------------|---|-----|----|------------|-------|
| Screening questions | Are there clear research questions? | 102 | 0 | 1 | 103 |
| | Do the collected data allow address the research questions? | 101 | 0 | 2 | 103 |
| Quantitative descriptive | Is the sampling strategy relevant to address the research question? | 64 | 0 | 2 | 66 |
| | Is the sample representative of the target population? | 65 | 0 | 0 | 65 |
| | Are the measurements appropriate? | 57 | 2 | 5 | 64 |
| | Is the risk of non response bias low? | | | | |

Mixed
Methods
study

| | | | | |
|--|----|---|---|----|
| Is the statistical analysis appropriate to answer the research question? | 62 | 1 | 3 | 66 |
| Is there an adequate rationale for using a mixed methods design to address the research question? | 35 | 0 | 2 | 37 |
| Are the different components of the study effectively integrated to answer the research question? | 32 | 0 | 5 | 37 |
| Are the outputs of the integration of qualitative and quantitative components adequately interpreted? | 36 | 1 | 0 | 37 |
| Are divergences and inconsistencies between quantitative and qualitative results adequately addressed? | 36 | 0 | 1 | 37 |
| Do the different components of the study adhere to the quality criteria of each tradition of the methods involved? | 33 | 0 | 4 | 37 |

2.10 Collating, summarizing, and reporting the results

The publications were summarized to establish the burden of gynaecological malignancy using a narrative approach. The study is structured around the geographical distribution of gynaecological cancer and frequency of occurrence. We analyzed and reported any other themes that answer the research question. Where appropriate we used tables and graphs to visualize findings. The results of this scoping review were used to determine the gaps in knowledge regarding the burden of gynaecological cancer in Nigeria.

UNDER PEER REVIEW

3. RESULTS AND DISCUSSION

Most of the studies were retrospective where patient folders were obtained from medical records or regional cancer registry. Diagnoses were based on histological findings **whereas some were confirmed using immune histochemical and clinical manifestation [review this, the final diagnosis in oncology is histological, anything out of this is just suspicion!]**. The setting of the study was in tertiary hospitals with minor exemptions such as in a community setting. Developed cities in Nigeria such as Lagos, Zaria, Anambra and Enugu had the highest number of publications. Other less developed states such as Imo, Lokoja, Oyo, Akwa Ibom, Bauchi, Benin, Delta, Kebbi and Ogun states had the least number of publications. There was a spike in the number of publications on gynaecological cancers until recently when a sharp decline was observed. The cancer with the highest rate of occurrence is cervical, ovarian and uterine cancers. The endometrium is the most commonly affected part of the uterus accounting for majority of the uterine cancers and trace cases of choriocarcinoma. Rare forms of cancers were also reported, which include granulosa cell tumor of the ovary and trophoblastic **tumour tumors**. Other kinds of gynaecological malignancies such as vulva, vagina and fallopian tube cancers scarcely **manifested found**. The three most prevalent forms of cancer identified in study are consistent with the reports of other authors [105],[106],[1]. Risk factors for some of the reported cases of cancers include active sexual history, **endo-cervical and mucinous adenocarcinoma [this is not a risk factor]**, age, parity, family history, **vaginal bleeding[this is not a risk factor]**, among others. Treatment mainly was radiotherapy and chemotherapy.

The major limitation of the study was that some of the journals reviewed lacked information on median age of patients.

This article will **form [researchers are humble. Talk of "contribute"]**the basis for a systematic review to estimate the epidemiological evidence of gynaecological malignancy in Nigeria.

Figure 1: Number of publications reported on **a certain type various types** of cancer

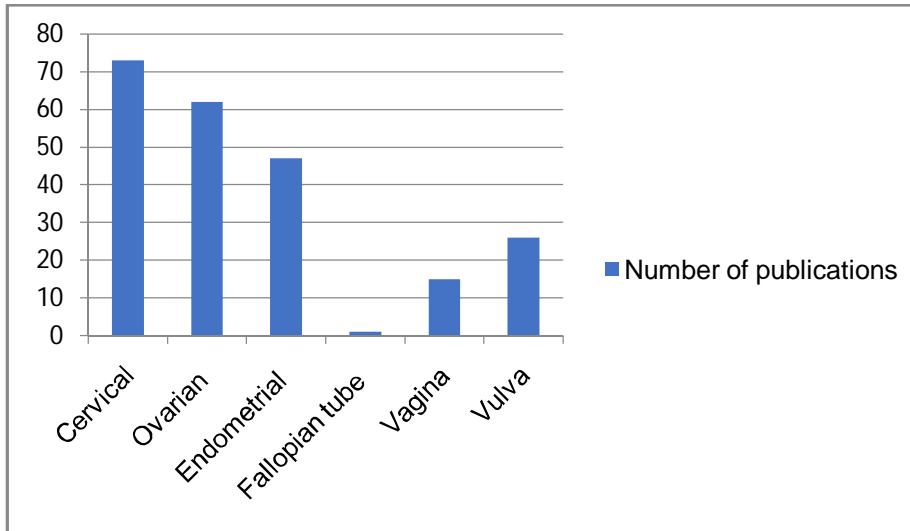


Figure 2: Number of publications included by year

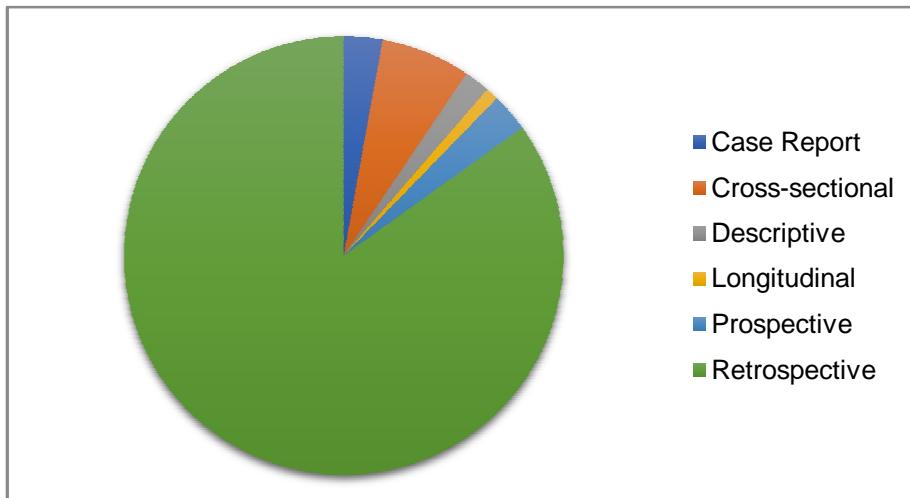
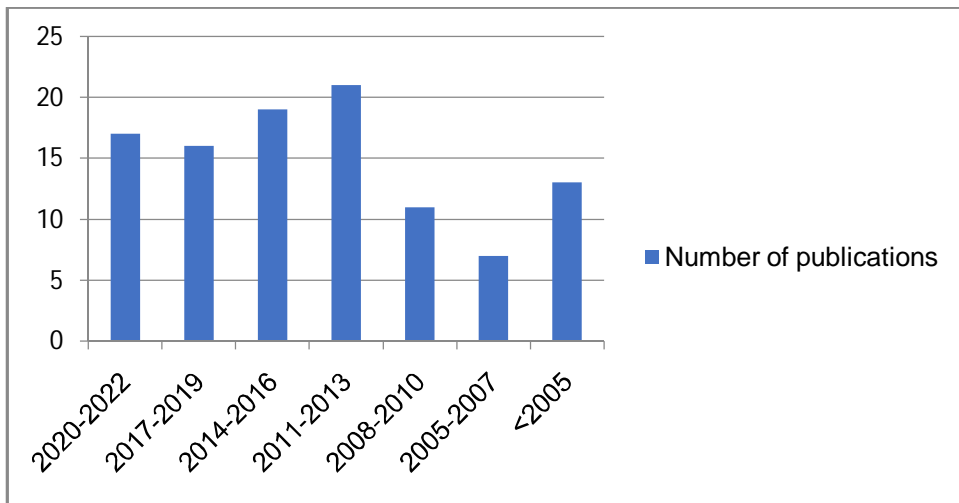


Figure 3: Rate of Occurrence of each study designs/methods

Figure 4: Percentage publication by state

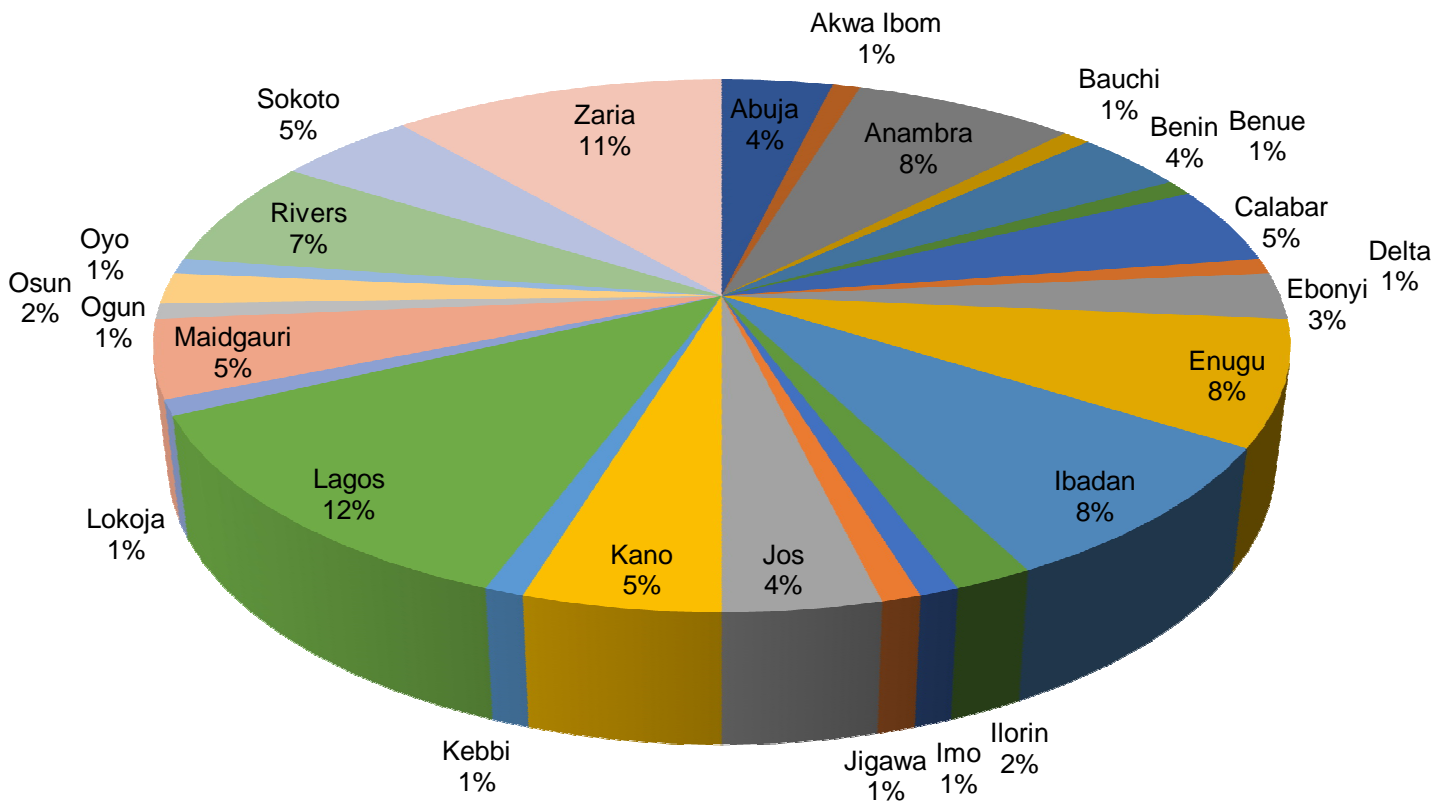
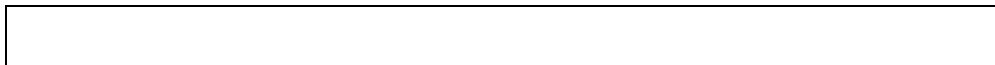
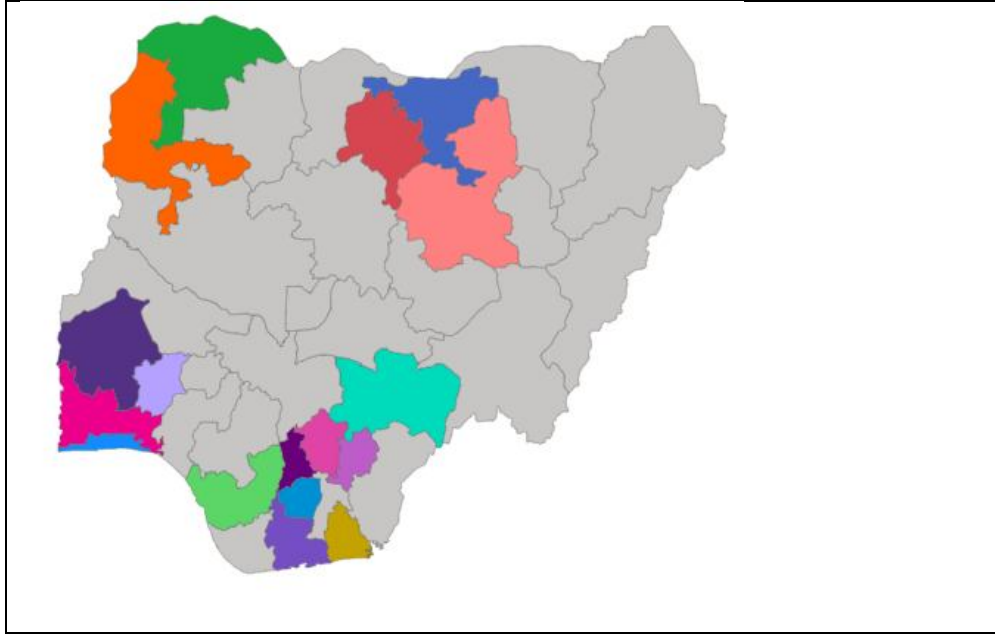


Figure 5: Shape map distribution of studies by state





4 CONCLUSION

This is the first study in Nigeria to collate all published works in gynaecological malignancies [do not be so affirmative]. Our finding is consistent with worldwide burden which identified cervical, ovarian and uterine cancers as the most common forms of cancer. Due to poor screening in Nigeria, many women only present with symptoms of complications or advanced stage of the disease. Highly urbanized localities had the greatest number of published articles on gynaecological malignancies leaving the rural areas with less publications, this shows that less health care is seen in the rural areas. Establishment of national screening protocol, national health insurance schemes and work force education is needed to mitigate the diseases state and improve survival outcomes, most especially in the rural areas.

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