

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 published articles of 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 homepage (BMC, Sahel Medical Journal) and free web search 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 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 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 work force education is key to early detection and mitigating the diseases state and improving survival outcomes.

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

1. INTRODUCTION

Gynaecological cancers are public health 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

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 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 gynecology 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

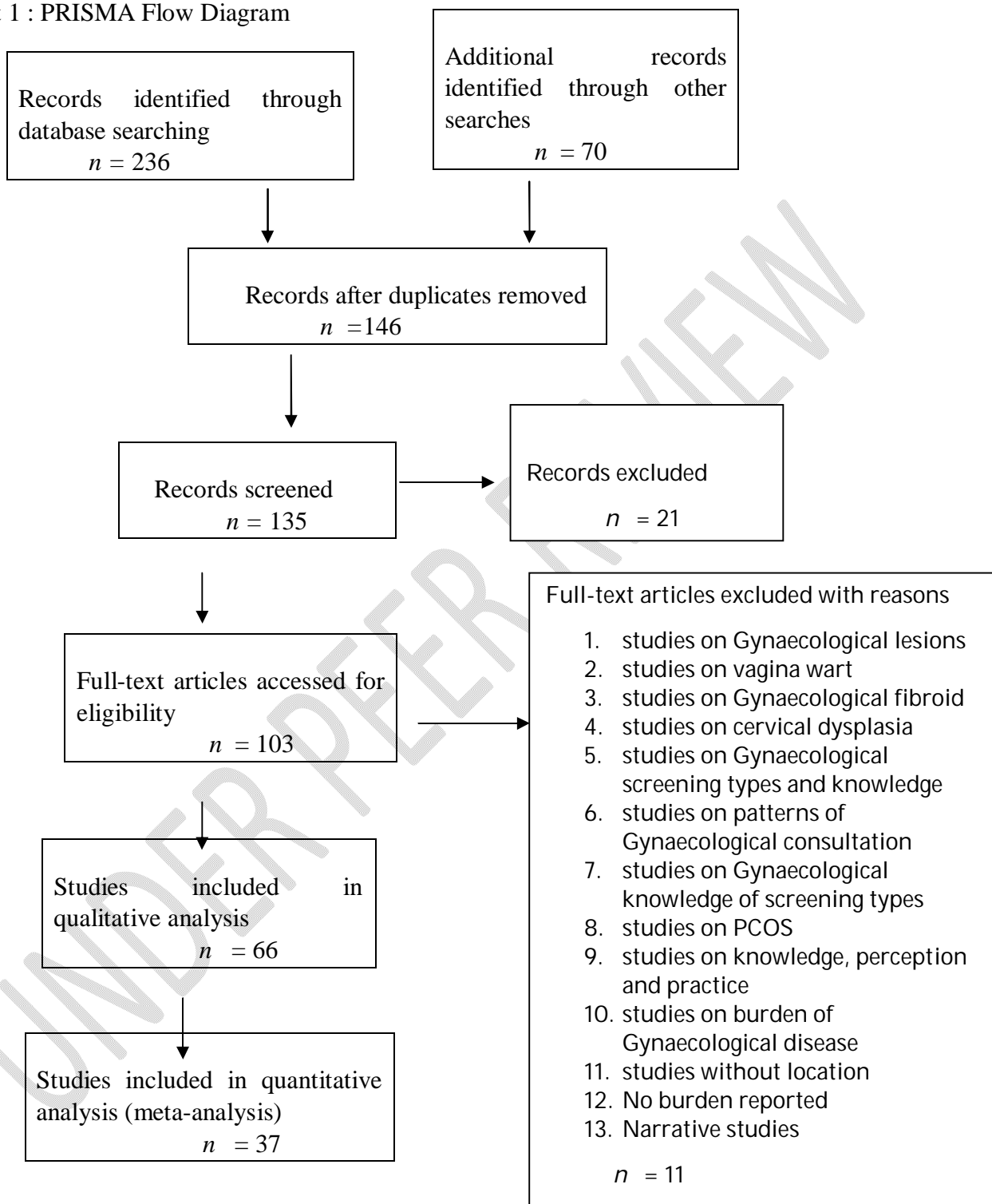
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Search: ((((((Gynaecological malignancies in Nigeria OR ovarian cancer in Nigeria OR Cervical cancer in Nigeria OR fallopian tube cancer in Nigeria OR vulva cancer in Nigeria OR vaginal cancer in Nigeria OR uterine cancer in Nigeria OR screening of 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)))))))))

UNDER PEER REVIEW

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 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 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 al[24]	2022	A histopathological study of ovarian neoplasms in children in a tertiary hospital of northern Nigeria	Zaria	Ovarian
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	Enugu	Ovarian cancer

Nigeria

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
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 al[41]	et	2010	Clinicopathological analysis of cervical cancer seen in a tertiary health facility in Nnewi, south-east Nigeria	Anambra	Cervical
Samaila1 al[42]	et	2012	Cutaneous umbilical metastases in post-menopausal females with gynaecological malignancies		cervical,ovarian, endometrial
OMIGBODUN et al[43]			Cytologic detection of urinary bladder involvement in cervical cancer	ibadan	Cervical
Zayyan al[44]	et	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 al[46]	et	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, Abakaliki, Nigeria	Abakiliki	cervical,ovarian,vulva choriocarcinoma,endometri al
Obodo et al[53]	2009	P1077 Gynaecological deaths in a tertiary hospital in Lagos: A 6-year review	Lagos	cervical,ovarian,endometria l, choriocarcinoma
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,endometria l
Omotoso et al.[55]	2018	Gynaecological Malignancies in Calabar, Nigeria: A Tertiary Hospital Based Study	Calabar	cervical,corpiusuteri,endom etrial,myometrium,ovarian,v ulva, vagina
Galadanci al[56]	2003	Gynaecological Malignancies Seen in a Tertiary Health Facility in Kano, Northern Nigeria	Kano	cervical, ovarian, corpus uteri, vulva,vaginal
Umeobika et al[57]	2018	Gynaecological Malignant Tumours at Imo State University Teaching Hospital Orlu South Eastern Nigeria	Imo	cervical.ovarian,uteri,vugin a,endometrial, choriocarcinoma
Uchendu Obiora Jude[58]	2022	Gynaecological lesions in Delta State, Nigeria: A hospital based histopathologic study	Delta	Cervical, Endometrial,Ovarian
Yakasai et al[59]	2013	Gynaecological malignancies in Aminu Kano Teaching Hospital Kano: A 3 year review	kano	cervical,ovarian,endometria l,choriocarcinoma
Galadanci et al[59]	2003	Gynecological malignancies in Aminu Kano Teaching Hospital Kano : A 3 year review	kano	cervical,ovarian,vulva,vagin a, corpus uteri
Omoniyi-Esan et al[60]	2004	Histological Patttern 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	Maidugur i	Ovarian
Omenai et al[62]	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 et al[64]	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	Rivers	endometrial, cervical,ovarian

six-year review

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
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,corpus uteri,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, cervix, ovary
Ibrahim SA et al[77]	2011	Pattern Of Gynaecological Admissions In Aminu Kano Teaching Hospital: A Three Year Review	Kano	
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 Of Gynaecological 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 al[83]	et 2013	Prevalence and Pattern of Cancers among Adults Attending a Tertiary Health Institution in Lagos, Nigeria	Lagos	Ovarian,endometrial,cervical
Awofeso al[84]	et 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 al[87]	et 2020	Primary vaginal leiomyosarcoma: case report of a rare gynaecological malignancy and diagnostic challenge in a resource-constraint setting	Lagos	vagina leiomyosarcoma
Goddy al[88]	et 2015	Profile and retrospective analysis of the use of preventive strategies in patients with cervical cancer in	Rivers	Cervical
Olaleye al[89]	et 2019	Profile of Gynaecological Malignancies in Alex Ekwueme Federal Teaching Hospital, Abakaliki, Southeastern Nigeria	Abakiliki	cervical,ovarian,endometrial,vulva1,vaginal,choriocarcinoma
Zayyan al[90]	et 2018	Quality of life in patients with advanced cervical cancer in Nigeria	Zaria	Cervical
Okunade al[91]	et 2020	Risk predictors of early recurrence in women with epithelial ovarian cancer in Lagos, Nigeria	Lagos	epithelial ovarian cancer
Nnadi Dc al.[92]	et 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]	et 2013	The burden of Gynecological cancer management in Northern Nigeria	Zaria	Cervical
Okeke et al[95]	2013	The Frequency and Pattern of Female Genital Tract Malignancies at the University of Nigeria Teaching	Enugu	cervix,ovarian,corpius uteri,vulva
Nwafor C.C & Nwafor N.N[96]	2018	The Pattern and Distribution of Cancers in Akwa Ibom State, Nigeria	Akwa Ibom	cervical cancer
Adekunle et 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,cervix
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? Is the risk of non response bias low?	57	2	5	64
	Is the statistical analysis appropriate to answer the research question?	62	1	3	66
Mixed Methods study	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.

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. 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. Other kinds of gynaecological malignancies such as vulva, vagina and fallopian tube cancers scarcely manifested. 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, endocervical and mucinous adenocarcinoma, age, parity, family history, vaginal bleeding 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 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 of cancer

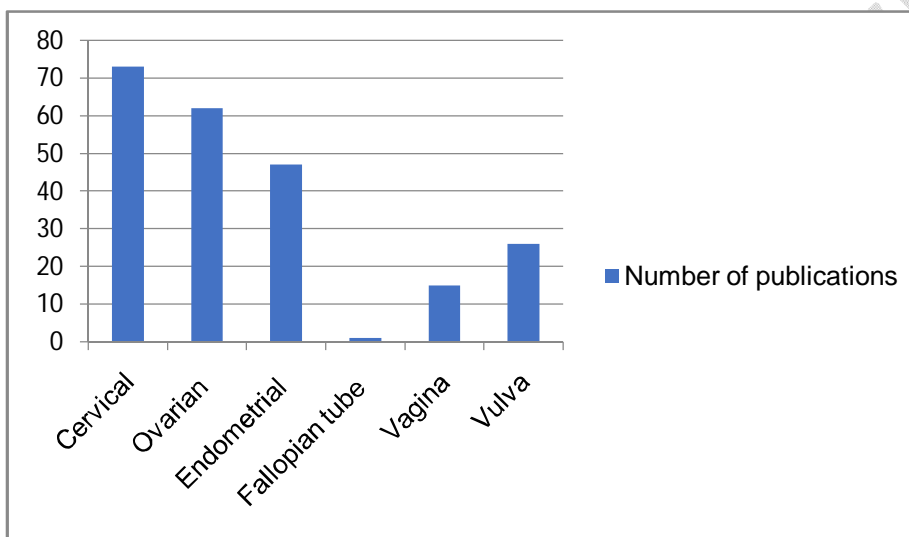


Figure 2: Number of publications included by year

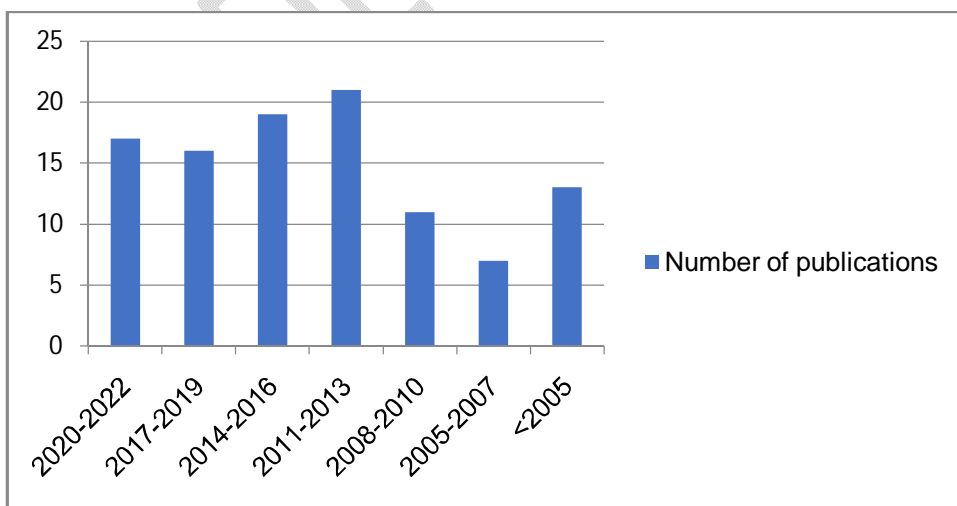


Figure 3: Rate of Occurrence of each study designs/methods

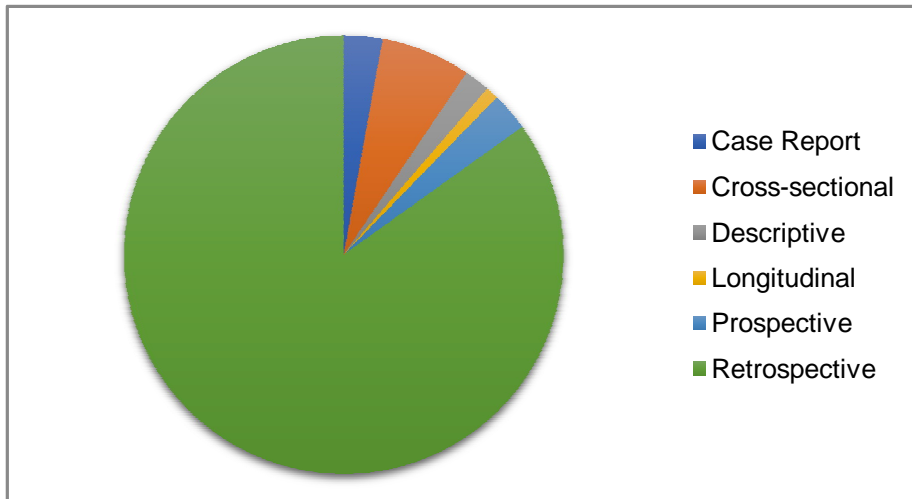


Figure 4: Percentage publication by state

UNDER PEER REVIEW

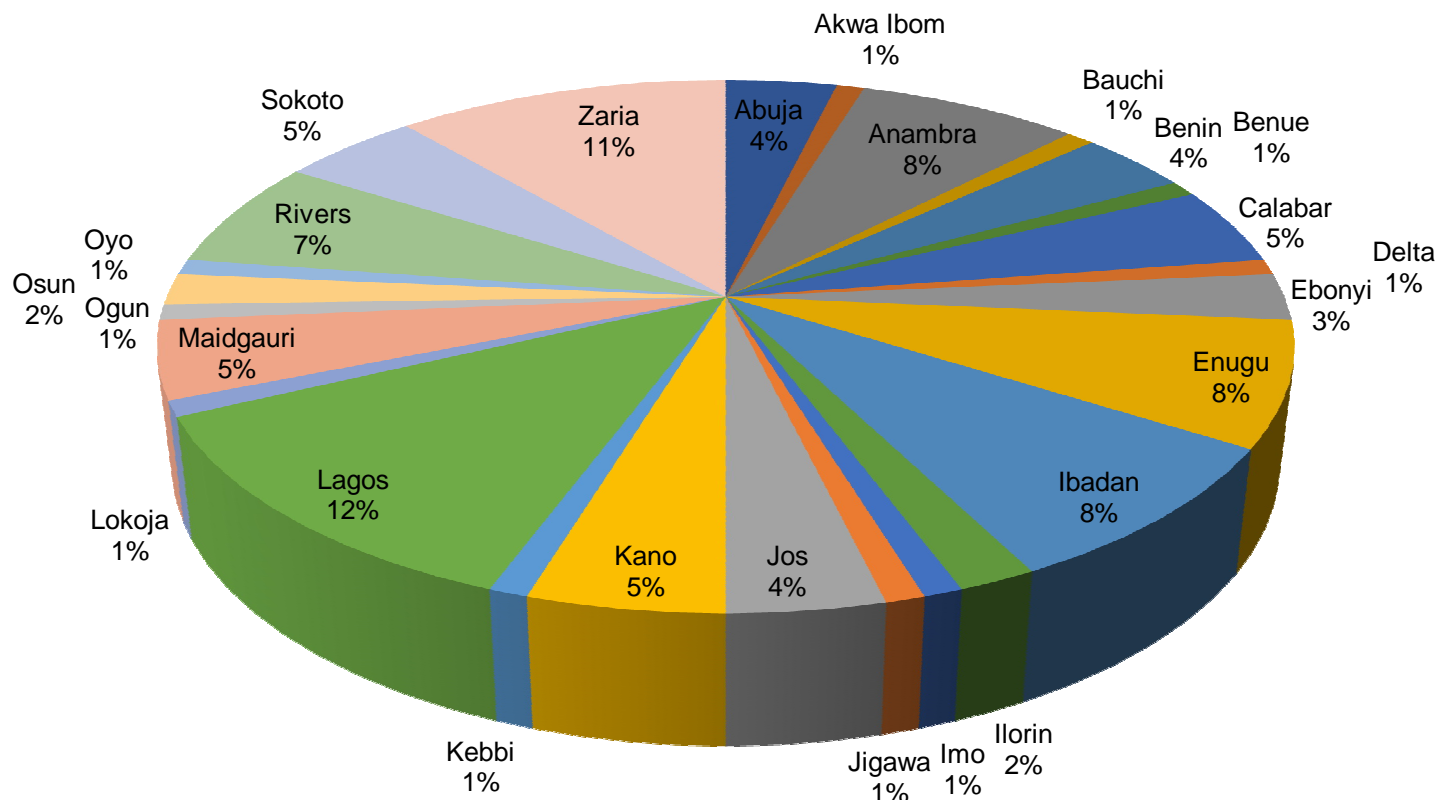
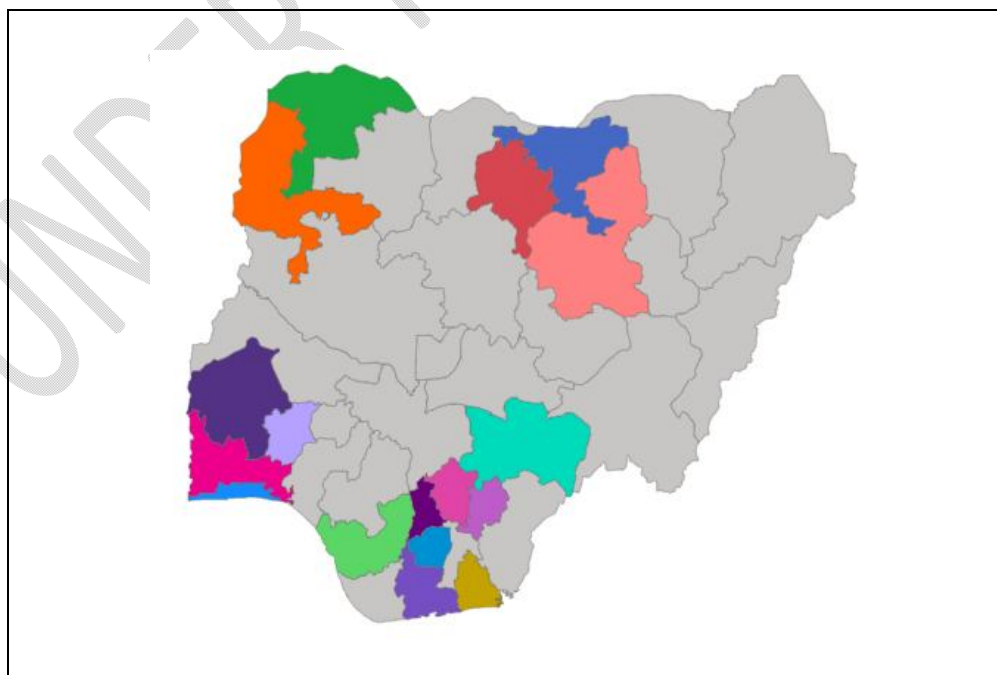


Figure 5: Shape map distribution of studies by state



4 CONCLUSION

This is the first study in Nigeria to collate all published works in gynaecological malignancies. 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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