International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Fijabiyi MO et al. Int J Reprod Contracept Obstet Gynecol. 2025 Jun;14(6):1731-1738
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20251557

Original Research Article

The prevalence, types, indications, and common complications associated with gynecological hysterectomy at Lautech teaching hospital, Ogbomoso, southwest Nigeria a five-year review

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Received: 23 April 2025
Revised: 18 May 2025
Accepted: 19 May 2025

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ABSTRACT

Background: Hysterectomy is a common major gynecological procedure performed on women.
Methods: This study was a retrospective study including all the gynecological hysterectomies done over a 5-year period in LAUTECH Teaching Hospital between 1st January 2020 and 31st December 2024. A total of 215 case files were retrieved out of 224 procedures done. Data were collected into proforma, cleaned, and analyzed using SPSS version 25. The results were expressed in frequencies, percentages, means, and standard deviation.
Results: The prevalence of the gynecological hysterectomy in Ogbomoso was 25.9%. The mean age in this study was 60.9±9 years. The most common indication for hysterectomy in this environment is symptomatic uterine fibroids. The preferred approach to the procedure was the transabdominal route, constituting 91.6%. Most of the patients (88.4%) who were offered hysterectomy had salpingo-oophorectomy. About 83.7% of patients stayed within five days in the hospital following the procedure. The mean blood loss in this study was 548±352.2. Slightly below one-fourth of the total number of patients who had hysterectomies suffered one form of complication or the other. These complications include hemorrhage (31.8%), surgical site infection (18.3%), anemia (22.7%), ureteral injury (13.6%), cuff cellulitis (9%), and bladder injury (4.6%). Most (72.6%) of the histological diagnoses were benign, and the rest were malignant in nature. The most common histological diagnosis was leiomyoma (27.9%).
Conclusions: Transabdominal hysterectomy is a common gynecological procedure in Ogbomoso, with symptomatic uterine fibroids being the leading indication for gynecological hysterectomy. Efforts should be made in the acquisition of skills for minimal access approaches, such as laparoscopic hysterectomy, in order to reduce complications associated with the procedure and further reduce the hospital stay.

Keywords: Complications, Gynecological, Hysterectomies, Indications, Nigeria

INTRODUCTION

Hysterectomy is the surgical removal of the uterus with or without its adnexa. It is a common and major gynecological surgery performed on women in the peri- and postmenopausal period, done laparoscopically, vaginally, or through an abdominal route as an open procedure.[1-3] Hysterectomy prevalence varies widely across high-income countries, ranging from 173/100,000 women in Denmark to approximately one million per year in China with it being one of the most common procedures performed on women in the United States, totalling about 600,000 procedures per year, with approximately 10% of procedures being subtotal hysterectomy.[4-6] In developing countries like Nigeria, where aversion to hysterectomy is high due to strong cultural beliefs, religious attachment,

and a strong wish to retain their uterus, it accounted for 8.5% to 18.2% of all major gynecological operations in both secondary and tertiary health care facilities.[7] The majority of hysterectomies are performed on account of benign conditions.[3]

Uterine fibroids with or without menorrhagia remain Nigeria's most common indication for hysterectomy. Other indications for hysterectomy vary from benign conditions to malignancies of the genital tract, examples are endometrial hyperplasia, uterovaginal prolapse, severe and intractable endometriosis and adenomyosis, chronic pelvic pain, and premalignant and malignant conditions of the genital tracts.[8]

The procedure can also be done prophylactically against reproductive tract cancers, especially in those with a strong family history, such as breast cancer with BRCA1 or 2 mutations.[9] Most women have relief of symptoms following hysterectomy, with an associated high level of satisfaction with the procedure.

However, the procedure could be associated with intraoperative and postoperative complications, some of which are hemorrhage, wound infection, urological complications, vault prolapse, psychosexual problems, and increased weight gain, among many others.[10]

The most commonly performed hysterectomy is total hysterectomy, which entails complete removal of the uterus and cervix. Other types of hysterectomy are subtotal, in which the cervix is preserved; hysterectomy with or without bilateral salpingo-oophorectomy; and radical hysterectomy, which is commonly done for malignant conditions.[11]

Abdominal hysterectomy is the most common surgical approach, followed by vaginal hysterectomy.[11] Newer techniques include laparoscopically assisted abdominal hysterectomy. The laparoscopic approach has a comparative advantage of fewer complications and shorter hospital stays over others.[12,13] The route of choice depends on a variety of factors, such as uterine size, pelvic adhesions, uterine/cervical pathology, pelvic floor relaxation, the need to carry out concomitant operations with the procedure, and the expertise of the surgeon.[14]

The choice of route of the procedure should be individualized, considering also the skill of the surgeon.[14,15] Although there are studies on hysterectomy in Nigeria, there is a paucity of data on elective hysterectomy for gynecological conditions in Ogbomoso, thus, this study would help to ascertain the indications, clinical characteristics, and pattern of morbidities associated with gynecological hysterectomy in this environment.

This study sought to assess the prevalence, types, indications, and common complications associated with a gynecological hysterectomy at LAUTECH Teaching Hospital, Ogbomoso.

METHODS

Study design

This was a descriptive retrospective study of women who had hysterectomies at LAUTECH Teaching Hospital, Ogbomoso, southwestern Nigeria, from 1st January 2020 to 31st December 2024.

Study setting

The study was conducted at LAUTECH Teaching Hospital, Ogbomoso, southwestern Nigeria, a state government-owned tertiary health institution established in 2011.

Sample size

A total of two hundred and twenty-four cases of women who had hysterectomies were managed during this period, and a total of two hundred and fifteen case notes contained complete patient information needed for the study, which was retrieved and utilized for the study.

Data collection

A written request, alongside ethical approval, was forwarded to the health information management department, where case files on all patients managed in the hospital were stored.

The hospital numbers of all patients who had hysterectomies and were managed between 1st January 2020 and 31st December 2024 were requested and used for the retrieval of patients' case files.

Data on the sociodemographic characteristics (age, parity, marital status, occupation, educational status, and religion), gynecological characteristics, and complications were extracted and entered into the proforma.

Data management and data analysis

Data were extracted from the patient case files into proforma. The proforma were sorted out, cleaned, and entered into a computer, and the obtained data were analyzed using the IBM Statistical Package for Social Sciences (SPSS) version 25. The information retrieved was subjected to statistical analysis. The results were expressed in frequencies, percentages, means, and standard deviation.

Ethical considerations

Ethical approval for this study was obtained from the ethical review committee of LAUTECH Teaching Hospital, Ogbomoso, before data were retrieved from patients' medical records. Confidentiality was maintained while handling patients' case files.

RESULTS

Out of 864 gynecological surgical procedures done during the study period, 224 were gynecological hysterectomies, with a prevalence of 25.9%. Two hundred and fourteen had complete information and were selected and analyzed. Table 1 describes the sociodemographic characteristics of the patient in the year under study.

The mean age in this study was 60.9±9 years. Most of the participants in this study were married (87.9%), very few were divorced (4.7%). Regarding religion, Christianity accounted for about 73%, Islam 26.5%, and Traditionalist 1.0%. More than two-thirds of the patients were from a monogamous setting (73.9%), while slightly above one-fourth were polygamous (26.1%).

About the ethnicity of patients in this study, Yorubas were the most prevalent tribe (88.4%), followed sequentially by the Hausas (4.2%) and the Igbos (2.8%). Participants in this study were either multiparous women (45.6%) or grand multipara (48.8%), with a few being primipara (5.6%). About 62.8% had 1-4 children alive, and about 37.2% had ≥5 children alive.

Table 2 show the gynecological characteristics of patients who had hysterectomies in the year under review. Most of the hysterectomies done had one form of indication or the other, ranging from symptomatic uterine fibroid (25.6%) and endometrial hyperplasia (3.7%) to other indications (1.4%). Total abdominal hysterectomy was the major (91.6%) procedure performed, while a very few had subtotal hysterectomy (1.4%). Only about 7% had vaginal hysterectomy in this study. Most of the patients (88.4%) who were offered hysterectomy had salpingo-oophorectomy, out of which the majority had bilateral salpingo-oophorectomy. Regarding the duration of hospital stay, a larger proportion (83.7%) of patients stayed within five days in the hospital following the procedure, while very few (2.3%) stayed more than 10 days. About the histological nature of tissue removed at surgery, 72.6% were benign, while the rest were benign (27.4%).

Table 3 describes the operative morbidity/mortality associated with hysterectomy. The mean blood loss in this study was 548±352.2 ml, slightly above one-tenth (22) of the total number of patients who had hysterectomies suffered one form of complication or the other. Of all these patients with complications, hemorrhage accounted for 31.8%, surgical site infection 18.3%, anemia 22.7%, ureteral injury 13.6%, cuff cellulitis 9%, and bladder injury 4.6%. The majority of those whose procedure was complicated with hemorrhage had blood transfusions (71.4%), which ranged from 1 to 5 units of bloods.

With regard to specific histological diagnoses, leiomyoma (27.9%), cervical intraepithelial neoplasm (20%), and serous cystadenocarcinoma (23.3%) were seen more frequently than other gynecological lesions in this study. Most (72.6%) of the histological diagnoses were benign, and the rest were malignant in nature.

Table 1: Sociodemographic characteristics.

Variables	Frequency (N)	(%)
Age (in years)		
<45	25	11.5
45–54	35	16.3
55–64	56	26.1
65–74	73	34.0
≥75	26	12.1
Mean age	60.9±9.0 years	
Marital status		
Married	189	87.9
Divorced	10	4.7
Widow	16	7.4
Family setting		
Monogamous	159	73.9
Polygamous	56	26.1
Religion		
Christianity	157	73.0
Islam	57	26.5
Traditionalist	1	1.0
Tribe		
Yoruba	190	88.4
Hausa	9	4.2
Igbo	6	2.8

Continued.

Variables	Frequency (N)	(%)
Occupation		
Petty Trader	58	27.0
Civil Servant	69	32.1
Business Woman	41	19.1
Farmer	38	17.6
Others	9	4.2
Parity		
Primipara	12	5.6
Multipara	98	45.6
Grand multipara	105	48.8
Number of children alive		
1-4	135	62.8
>5	80	37.2

Table 2: Gynaecological characteristics.

Variables	Frequency (N)	(%)
Indication for hysterectomy		
Endometrial hyperplasia	8	3.7
Abnormal uterine bleeding	32	14.9
Abnormal pap smear	43	20.0
Suspected ovarian tumour	50	23.3
Suspected endometrial malignancy	9	4.2
Symptomatic uterine fibroid	55	25.6
UV prolapse	15	6.9
Others	3	1.4
Types of hysterectomy		
Total abdominal hysterectomy	197	91.6
Subtotal hysterectomy	3	1.4
Vaginal hysterectomy	15	7.0
Salpingo-oophorectomy		
Yes	190	88.4
No	25	11.6
Types of salpingo-oophorectomies		
Unilateral	10	5.3
Bilateral	180	94.7

Table 3: Operative morbidity/mortality associated with hysterectomy.

Variables	Frequency (N)	(%)
Estimated blood loss	Mean blood loss 548.1±354.2	
Complications		
Yes	22	10.2
No	193	89.8
Type of complication suffered		
Haemorrhage	7	31.8
Surgical site infection	4	18.3
Anaemia	5	22.7
Cuff cellulitis	2	9.0
Ureteral injury	3	13.6
Bladder injury	1	4.6
Others	0	0.0
Blood transfusion		
Yes	5	71.4
No	2	28.6

Continued.

Variables	Frequency (N)	(%)
Unit of blood transfused		
≤2 Units	2	40.0
3-4 Units	2	40.0
≥5 Units	1	20.0
Nature of tissue for histology		
Benign	156	72.6
Malignant	59	27.4
Duration of hospital stay (in days)	Mean hospital stays (days) 5.18±1.88	
≤5	180	83.7
6–10	30	14.0
≥10	5	2.3

Table 4: Operative morbidity/mortality associated with hysterectomy.

Variables	Frequency (N)	(%)
Post-op histological diagnosis		
Normal finding	20	9.3
Leiomyoma	60	27.9
Endometrial adenocarcinoma	9	4.2
Cervical intraepithelial neoplasm	43	20.0
Complete hydatidiform mole	5	2.3
Endometriosis	6	2.8
Serous cystadenocarcinoma	50	23.3
Atypical endometrial hyperplasia	8	3.7
Chronic erosive cervicitis	4	1.9
Adenomyosis	8	3.7
Follicular cyst	2	0.9

DISCUSSION

The prevalence of gynecological hysterectomies in this study was 25.9%. This is higher than 9.4%, 14.1%, and 3.3% reported in similar studies in Lagos, Owerri, and Kano, respectively, a lower prevalence was also reported in a study done in Cameroon, where it constituted 14.21%.[2,15-17] A higher prevalence of 37.4% was reported in the USA.[18]

This higher prevalence of hysterectomy in the United States speaks volumes on the readiness of women to consent to the surgery in the event that disease of the female genital tract occurs. Additionally, it shows the level of self-awareness and sense of authority among women folks in making health-conscious decisions without any myth or sociocultural factor hindering them. Unlike in the African subregion, women in the developed countries do not place premium importance on childbearing, thus easing the making of decisions for the procedure whenever there is indication for such.

The lower prevalence of the procedure in the northern and south eastern parts of Nigeria could be attributed to aversion to the procedure. Generally, in Nigeria, the higher premium placed on childbearing regardless of women's age, cultural and religious beliefs, and strong wish to retain the uterus for menstrual function have all been reported as the reasons many women reject the procedure.[3,7,19,20] The mean age of women who had hysterectomies in our study was 60.9±9.0 years. In the Doula study, the mean age was 45.75±7.71 years (range: 19-75 years).[17] In our study, the procedure was most prevalent among women between the ages of 65 and 74 years, accounting for 34% among women observed. This trend could be attributed to most women at advanced age group having pre-existing benign gynaecological conditions and also propensity to develop gynaecological cancers as they get older.

Most women within at this age would have stopped having kids and would easily consent to hysterectomy if their uterus or ovaries were diseased. The procedure is least common among women within the reproductive age (<45 years), this accounted for slightly above 10%.The women who underwent a hysterectomy were predominantly multiparous (48.8%), with only 5.6% being primiparous. Nulliparous women did not undergo any of the procedures.

It can be inferred that women with parous experience would accept to have the procedure without much hesitancy due to lack of desire for future childbearing, as a significant proportion would have completed their family size.[3,21] The most common indication for hysterectomy in this study was uterine fibroid, closely followed by ovarian

mass, accounting for 25.6% and 23.3%, respectively. The third most common indication was an abnormal Pap smear, with 43 women (20%) had hysterectomy due to premalignant lesion of the cervix. In a similar study in Kano, Nnewi and Lagos showed uterine fibroids as the commonest indication.[2,15,21] In Kano and Nnewi, respectively, slightly above 50% and about 42% of the procedures were undertaken as a result of symptomatic fibroids.[2,21] According to Nana et al, in Doula, uterine fibroids (64.15%) also ranked first in the indication for hysterectomy in their study, followed by gynaecological cancers (13.94%).[17] Chale et al, in Tanzania reported that most (84.1%) of the hysterectomies were due to uterine fibroids.[22] This shows that uterine fibroid is unarguably the leading indication for hysterectomy in most parts of Africa.

Unsurprisingly, uterine fibroids are one of the commonest tumours of the reproductive tract, thus the commonest indication for hysterectomy. Conversely, utero-vaginal (UV) prolapse was the most common indication in Owerri, accounting for 47% of cases.[16] This is at variance with the findings in this study, as UV prolapse ranked fifth. This could possibly be explained by the high parity status of most women who had hysterectomies in Owerri, as over 50% of them were grand multiparous.[16]

High parity, most especially grand multiparity, has a significant influence on the aetiology of UV prolapse, as it could predispose to pelvic support laxity and ultimately lead to pelvic organ descent from its original anatomical location.[23] Considering the surgical approach to the hysterectomy, 93% of all the hysterectomies done were through the transabdominal route (laparotomy), while just 7% (15 out of 215 cases) were vaginal hysterectomies. This is higher than the 45.8% in Owerri and 78.2% reported in Nnewi, done through the transabdominal (laparotomy) means.[16,21]

In Douala, laparotomy was also noted to be the preferred route, making 86%, the vaginal route, 10.2% and laparoscopy nearly 4%.[17] The reason for this overreliance on transabdominal route could be due to the indications for the procedure, most of our patients in this study presented with huge uterine fibroids and in such instance transabdominal hysterectomy was the preferred route for the procedure. Out of the 200 patients that had abdominal hysterectomy, 98.5% had total abdominal hysterectomy. This reiterates the advantage that lies in total removal of the uterus and the whole of the cervix in eliminating the future risk of developing cervical malignancy in those patients who has had hysterectomy done for other benign conditions of the uterus or its appendages.[24]

A quite smaller proportion (7%) of our patients had a vaginal hysterectomy done, this is in contrast to findings in other centres with an appreciably higher percentages (21% in Nnewi, 55.2% in Owerri).[16,21] There is a slight comparison in the proportion of those with vaginal hysterectomy between our study and that of Nana et al where vaginal hysterectomy accounted for 10.2% of the total hysterectomies.[17] A cogent reason for much higher rate of vaginal hysterectomies in the above studies was the high prevalence of UV prolapse in their studies as compared to uterine fibroids which was the leading indication for the procedure in Ogbomoso. Considering the huge sizes of uterine fibroids that most patients present with in this environment, the transabdominal route appears to be the safest and most convenient means to that end. That being said, efforts must be geared toward the acquisition of skill sets for laparoscopy to improve the quality of surgical services offered to our women as enormous benefits (reduced overall cost, short hospital stay and lower complications rates) that lie in laparoscopic hysterectomy over the laparotomy which is prevalent in our environment.[25] In this study, none of the hysterectomies done within the 5-years study period were through the laparoscopic approach. Surprisingly, the same findings were noted in reports by Oguejoiofor et al, in Nnewi, Okunade et al, in Lagos, Onyeabockukwu et al, Owerri and Rabiu et al. in Kano.[2,15,16,21] In Douala, where laparoscopic hysterectomy was reported, it only accounted for 4% of all hysterectomies performed in 20 years.[17]

Laparoscopic and vaginal hysterectomies are preferable over the abdominal route whenever possible in Western countries as compared to Sub-Saharan settings where vaginal and laparoscopic routes are seldom performed.[26] This observation points to the fact that proficiency in operative laparoscopy required to perform laparoscopic-hysterectomy or laparoscopic-assisted vaginal hysterectomy is lacking in most centres. Another barrier is the non-availability or poor maintenance of the equipment, which makes the training capacity limited, despite the need for consistency that minimal access operative techniques demands (hands-on training and a high learning curve required to be skilful at it). Also, laparoscopic hysterectomy is best done when the uterine size is not more than 12 weeks of amenorrhoea.[27] It is very uncommon to have patients in such an early presentation in our environment as most patients, especially those with uterine fibroids largely present with huge uterine fibroids.

Out of the 215 cases, 22 patients (10.2%) had varying degrees of complications. The mean blood loss following hysterectomy in this study was 5548.1±354.2 ml. Haemorrhage was the commonest complication encountered, 7 patients had an intraoperative haemorrhage, 5 of whom were transfused with blood consequent to postoperative anaemia. Following a serious blood loss of approximately 2 l, one patient received a transfusion of 5 units of blood. The cause of the bleeding was severe adhesion encountered intraoperatively that made the procedure difficult to execute without much blood loss (the patient has had 1 previous myomectomy and caesarean section done in the past).

Four patients had urological injuries from the procedure. Seventy-five percent of the urological injuries were ureteric injuries, most common among involved inferior

third transections. The remainder was a bladder injury, which was identified immediately intraoperatively and successfully repaired without any further complications. The postoperative complications include postoperative anaemia and surgical site infection (anterior abdominal wall wound infection and vaginal cuff cellulitis) in 5, 4 and 2 patients, respectively. Compared to a similar study in Nnewi, South eastern Nigeria, about 38.4% had some form of complications, this is significantly higher than the 10.2% observed in Ogbomoso.[21] In Owerri, a postoperative complication rate of 23.7% was reported, and febrile morbidity was the most prevalent among them.[16] The fatality rate of hysterectomy was zero per cent in Ogbomoso during the period of time considered, similarly, no fatality was recorded in Owerri, but a higher death rate in Nnewi at 2.5%.[16,21]

The overall complication rate in the study done by Nana et al, was 11%, this is comparable with our findings. Hemorrhage and urological injuries were the 2 commonest intraoperative complications reported, this finding is in tandem with ours.[17] Evidently, one could infer that hysterectomy is a relatively safe procedure with less risk of complications, especially in the hands of an experienced gynaecologist, a well-selected route of surgery and optimal patient's preoperative status. Most of the cases with complications in this study were patients who had multiple pelvic surgeries prior to the hysterectomy, and this has been a well-documented determinant of intraoperative complications in most major surgeries.[28,29]

Hence, efforts must be put in place to prevent the common complications associated with the procedure in order to further reduce the morbidity rate following the intervention.

As regards the convalescent period following the procedure, over 80% (180) of the patients spent not more than 5 days in the hospital after the procedure. Only 3 patients out of the 215 that were operated on had hospital stays of up to 10 days. In a similar study in Nnewi, 65.4% of patients had a hospital stay of between 8-14 days, postoperative hospital stay which was clearly prolonged than in our study.[16] The mean hospital stay in the study was 5.18±1.88 days. This is lower than 8.0±4.9 days reported in Lagos by Okunola et al.[16]

Findings from the Duoala study show the average hospital stay were 6.07±1.92 days, 3±1.09 days and 3.6±1.04 days following laparoscopy.[17] From our study, it was discovered that most patients with a seamless surgical outcome do not require prolonged stay therefore significantly lower human capital and economic loss. However, when serious complications arise from the procedure, hospital stay tend to be longer than expected and this may come with enormous productive time wastage and financial burden both on the patients and hospital. Variations in length of hospital stay following procedure has been said not to be strictly dependent on severity of illness or complication of care but largely practice style or prerogative of surgeons. Measures are therefore advised to be geared toward optimal care in order to foster faster patient recovery.[30]

The study was a retrospective descriptive study with some of the data retrieved from the case notes incomplete and thus inadequate for analysis. A prospective study would be more appropriate for appropriate data collection if similar study is to be done in the future.

Also, with a varying prevalence of gynecological hysterectomies in different regions of the country, a multi-centered study on gynecological hysterectomies would provide a more appropriate information on the prevalence, common indications and complications associated with gynaecological hysterectomy in Nigeria.

CONCLUSION

Transabdominal hysterectomy is a common gynecological procedure in Ogbomoso with symptomatic uterine fibroids as the leading indication for gynecological hysterectomy. Most of the procedure were performed through the transabdominal route. Efforts should be made in acquisition of skills for minimal access procedure such as laparoscopic hysterectomy and laparoscopic assisted vaginal hysterectomy in order to minimize the risks associated with the procedure and also further shorten length of hospital stay.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Fijabiyi MO, Aworinde OO, Oyedeji EO, Adekunle AD, Adeniran MA, Muritala WO, et al. The prevalence, types, indications, and common complications associated with gynecological hysterectomy at Lautech teaching hospital, Ogbomoso, southwest Nigeria a five-year review. Int J Reprod Contracept Obstet Gynecol 2025;14:1731-8.