



Clinical Indications of Hysterectomy in Gynecology Department of Ayub Teaching Hospital, Abbottabad

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ABSTRACT

Background: Hysterectomy is one of the most commonly performed gynecological surgeries worldwide, indicated for a variety of benign and malignant conditions. Understanding the demographic and clinical profiles of women undergoing hysterectomy can help improve clinical decision-making and patient care. **Objective:** This study investigates the clinical indications of hysterectomy performed in Gynecology Department of Ayub Teaching Hospital, Abbottabad. **Materials and Methods:** This cross-sectional study was conducted in the Gynecology Department of Ayub Teaching Hospital, Abbottabad, from 11th September 2024 to 12th March 2025. A total of 142 women who underwent hysterectomy were included. Data on age, parity, education, ethnicity, residence, and reproductive status were collected. The clinical indications for surgery were documented, and associations with age and menopausal status were assessed using the Chi-square test. **Results:** The mean age of participants was 47.58 ± 9.4 years, with a mean parity of 4.96 ± 2.14 . Most women were premenopausal (71.13%) and resided in rural areas (69.01%). The leading indication for hysterectomy was uterine fibroids (40.8%), followed by adenomyosis (23.2%), UV prolapse (11.97%), and endometrial hyperplasia (8.45%). A significant association was found between age and indications ($p = 0.0198$), with fibroids and adenomyosis more common in women over 40. Menopausal status also showed a significant association with indications ($p = 0.00028$). **Conclusion:** Uterine fibroids are the most common indication for hysterectomy, particularly among premenopausal women aged over 40. The indications for hysterectomy significantly vary with age and menopausal status, emphasizing the need for individualized treatment approaches.

INTRODUCTION

Hysterectomy is surgical removal of uterus either as part in the form of subtotal hysterectomy which means removal of upper part of uterus and conserving cervix or in the form of total hysterectomy which involves complete removal of uterus and cervix or it can be done as radical hysterectomy which involves removal of uterus, cervix, upper part of vagina and parametrium in cases of malignancy.¹

Among gynecological surgeries, hysterectomy is the most common procedure done worldwide. It is clinically indicated for both benign and malignant conditions. It can be done as emergency or elective procedure,² being done through abdominal, vaginal, or laparoscopic technique. Abdominal route is commonly used.³ However, there is an increasing trend in the use of minimally invasive procedure along with a rise in failure rate in laparoscopic approach 20.2% in 2011 to 47.2% in 2017 and 1.7% in 2011 to 2.8% in 2017 respectively.⁴ The procedure is done for many conditions like fibroids uterus, abnormal uterine bleeding, adenexal mass, adenomyosis, endometrial polyp and malignancy.³ Among many of benign indications for hysterectomy, uterine fibroids is common one followed by

abnormal uterine bleeding.⁵

Rate of hysterectomy varies in different parts of world due to many reasons like indication of surgery, choice of surgeon, patient choice, social and cultural differences. However, developed countries show increased prevalence as compared to under-developed countries in past. In recent years the trend is changing with an increased rate being observed in low-income countries and low incidence in US and Canada due the availability of modern modalities of treatment like uterine artery embolization and endometrial ablation techniques.⁶

In a study conducted in Peshawar from January 2010 to January 2012, out of total 123 hysterectomies performed, frequency of abdominal hysterectomy was 71.5% and that of vaginal hysterectomy was 28.4%, out of them the highest incidence was due to fibroids uterus with heavy menstrual bleeding (32.5%). Other indications were 3rd degree uterovaginal prolapse (24.4%), and dysfunctional uterine bleeding (23.6%).⁷

This study is conducted with an objective to assess the clinical indications of hysterectomy performed in gynecology department of Ayub teaching hospital. This

includes benign and malignant reasons in women of reproductive age. The information could be used in implementing new protocol and strategies of performing surgical procedure, in identifying new and early diagnostic criteria of clinical conditions leading to hysterectomy thereby serving the health benefits to women of reproductive age and to society.

MATERIALS AND METHODS

This cross-sectional study was conducted in the Gynecology Department of Ayub Teaching Hospital, Abbottabad, from 11th September 2024 to 12th March 2025, over a period of six months following the approval of ethical committee. A non-probability consecutive sampling technique was employed to recruit participants, and the sample size was calculated using WHO software, assuming a 95% confidence level, an anticipated proportion of hysterectomy due to dysfunctional uterine bleeding (23.6%)⁷, and a margin of error of 7%, yielding a sample size of 142. Informed consent was obtained from all participants prior to their inclusion in the study. Each patient was provided with a clear explanation of the research objectives, procedures, potential risks, and benefits in a language they could understand. Women of reproductive age, including both premenopausal and postmenopausal women undergoing hysterectomy—regardless of marital status or parity—were included in the study. Exclusion criteria comprised patients with a history of diabetes, hypertension, cardiac disease, renal disease, chronic liver disease, coagulopathy, or those who were pregnant. Data were collected from eligible patients admitted to the gynecology ward after obtaining ethical approval from the institutional review board and CPSP. Demographic details including age, marital status, parity, address, BMI, socioeconomic status, profession, education, and any existing medical disorders were documented using a structured proforma. Clinical indications for hysterectomy—such as uterine fibroids, adenomyosis, dysfunctional uterine bleeding, and adnexal masses—were recorded based on operational definitions. Data analysis was performed using SPSS version 26. The significance level was set at $p \leq 0.05$. The results were summarized in the form of tables and diagrams.

RESULTS

The mean age of the women in the study was 47.58 ± 9.4 years, and they had a mean parity of 4.96 ± 2.14 children. Regarding education, most women had primary education (38.73%), followed by no education (30.99%), secondary education (21.13%), and a few with higher education (9.15%). The majority belonged to the Hindko ethnic group (67.61%), with Pushto (26.06%), Kohistani, and Urdu-speaking groups making up smaller portions. Most participants lived in rural areas (69.01%) compared to urban areas (30.99%). In terms of reproductive status, 71.13% were premenopausal, while 28.87% were postmenopausal. The most common indication for hysterectomy was fibroids, accounting for 40.8% of cases, followed by adenomyosis at 23.2%. Endometrial hyperplasia and UV prolapse were responsible for 8.45% and 11.97% respectively. Adnexal mass, placental anomalies, chronic endometritis, and cervical growth

made up smaller proportions of the cases (Figure 1). The indications for hysterectomy showed notable age variation. Most women with fibroids and adenomyosis were over 40 years old, accounting for 81% in both groups. Similarly, the majority of cases with endometrial hyperplasia, adnexal mass, and UV prolapse were also above 40 years. Placental anomalies showed a higher proportion (62.5%) in women aged 40 or younger. The overall difference in age distribution across all indications was statistically significant ($p = 0.0198$), indicating that age plays an important role in the type of hysterectomy indication (Table 1). There is a significant association between menopausal status and the indications for hysterectomy ($p = 0.00028$). Most women with fibroids (91.38%) and adenomyosis (81.8%) were premenopausal. In contrast, conditions such as endometrial hyperplasia (75%) and UV prolapse (64.7%) were more common among postmenopausal women. Other indications like adnexal mass, cervical growth, and chronic endometritis showed varied distributions between premenopausal and postmenopausal groups (Table 2).

Figure 1
Distribution of Indications for Hysterectomy among Study Participants.

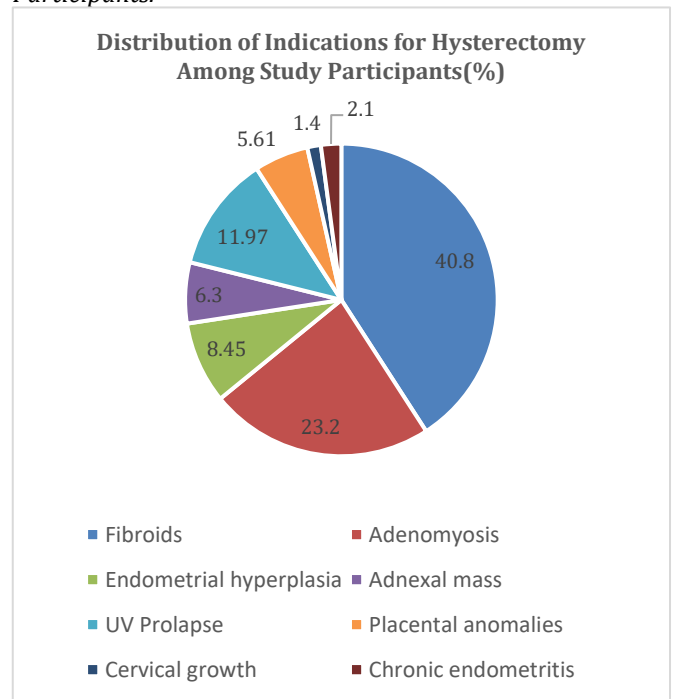


Table 1
Age Distribution across Different Indications for Hysterectomy Showing Significant Association

Indication of Hysterectomy	N	Age 40 or < 40 YEARS n (%)	Age > 40 years n (%)	P value
Fibroids	58	11 (18.96)	47 (81.03)	0.0198
Adenomyosis	33	6 (18.18)	27 (81.81)	
Endometrial hyperplasia	12	1 (83.33)	11 (91.67)	
Adnexal mass	9	1 (11.11)	8 (88.89)	
UV Prolapse	17	1 (5.89)	16 (94.12)	
Placental anomalies	8	5 (62.5)	3 (37.5)	
Cervical growth	2	1 (50)	1 (50)	
Chronic endometritis	3	1 (33.33)	2 (66.67)	

Table 2
Association between Menopausal Status and Indications for Hysterectomy.

Indication of hysterectomy	N	Pre-menopausal n (%)	Post menopause n (%)	P value
Fibroids	58	53 (91.38)	5(8.62)	0.00028
Adenomyosis	33	27 (81.8)	6 (18.18)	
Endometrial hyperplasia	12	3 (25)	9(75)	
Adnexal mass	9	4 (44.4)	5 (55.6)	
UV Prolapse	17	6 (35.3)	11 (64.7)	
Cervical growth	2	1 (50)	1 (50)	
Chronic	3	2 (66.7)	1 (33.3)	
Endometritis	3	1 (33.33)	2 (66.67)	

DISCUSSION

Hysterectomy remains one of the most frequently performed gynecological surgeries worldwide, serving as a definitive solution to various benign and malignant uterine pathologies.⁸ The findings offer significant insight into the demographic and clinical characteristics of women undergoing hysterectomy, particularly in our regional context. Our results show that the most common indication for hysterectomy was uterine fibroids, comprising 40.8% of cases. This finding aligns with global and regional data, where fibroids are often reported as the leading cause of hysterectomy due to their high prevalence and symptom burden. A study conducted by Plewniak et al has also revealed that uterine fibroids affect up to 80% of women, represent the most common benign reason for undergoing a hysterectomy.⁹ However, a recent study has found that Since 2010, there has been a noticeable shift in the primary indications for hysterectomy in the developed nations. Genital prolapse and urinary incontinence have emerged as the leading causes for the procedure, surpassing uterine fibroids, which were previously the most common reason. This change reflects evolving gynecological trends, improvements in non-surgical treatments for fibroids, and increased awareness and diagnosis of pelvic floor disorders in the aging female population.¹⁰ In the present study, Adenomyosis was the second most common indication (23.2%), often overlapping with fibroids. It is increasingly recognized as a significant cause of chronic pelvic pain and abnormal uterine bleeding, particularly among premenopausal women. This overlaps with fibroid pathology and frequently complicate the decision for conservative versus surgical treatment.¹¹ Endometrial hyperplasia was the third most prevalent indication (8.45%), followed by uterovaginal (UV) prolapse (11.97%), adnexal masses (6.3%), placental anomalies (5.61%), chronic endometritis (2.1%), and cervical growths (1.4%). Notably, UV prolapse showed a strong association with postmenopausal status and advancing age, likely due to pelvic floor weakening from childbirth and hormonal decline.¹² Placental anomalies were most common among younger,

reproductive-age women, which is consistent with their obstetric origin. Analyzing indications in relation to menopausal status revealed further patterns. The majority of fibroid (91.38%) and adenomyosis (81.8%) cases occurred in premenopausal women. This supports the understanding that both conditions are estrogen-dependent, often regressing after menopause.¹³ In contrast, endometrial hyperplasia and UV prolapse were more common in postmenopausal women, occurring in 75% and 64.7% of cases respectively. The higher frequency of endometrial hyperplasia in postmenopausal women is clinically significant, as this group is also at higher risk of premalignant and malignant transformation. Adnexal masses showed a nearly equal distribution between premenopausal and postmenopausal groups, with a slight premenopausal predominance (44.4%). This likely reflects the wide variety of adnexal masses, including functional cysts, benign tumors, and neoplastic lesions, which can occur throughout a woman's reproductive life.¹⁴ Chronic endometritis and cervical growths were too few in number to yield significant associations, but their presence underscores the variety of conditions prompting hysterectomy in complex cases.¹⁵ By analyzing factors such as age, menopausal status, parity, and underlying conditions like fibroids, adenomyosis, and uterine prolapse, the findings can guide gynecologists in making more informed surgical decisions. It also highlights the demographic patterns associated with each indication, which can assist in resource allocation, preoperative counseling, and postoperative care planning. Despite its contributions, this study has several limitations. First, it was conducted at a single center, which may limit the generalizability of the results to other regions. Additionally, socio-economic factors, patient preferences, and access to alternative treatments were not assessed, which could have influenced the decision for hysterectomy. Finally, long-term outcomes and histopathological confirmations were not included, limiting conclusions.

CONCLUSION

This study highlights that uterine fibroids remain the most common indication for hysterectomy, particularly among premenopausal women over 40 years of age. Adenomyosis followed closely, also prevalent in the same age group. In contrast, conditions such as endometrial hyperplasia and UV prolapse were more frequently observed in postmenopausal women. Age and menopausal status were found to be significantly associated with the underlying indications for hysterectomy, emphasizing their importance in surgical decision-making. These findings can inform clinicians in tailoring patient counseling, improving early diagnosis, and optimizing treatment strategies for women undergoing hysterectomy based on their reproductive and age profile.

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