



IMPACT OF UTERINE FIBROIDS ON WOMENS HEALTH AND HEALTH-RELATED QUALITY OF LIFE

Obstetrics & Gynaecology

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ABSTRACT

Background: Uterine fibroids are common benign uterine tumours that may cause heavy menstrual bleeding, pelvic pain, pressure symptoms, anaemia, reproductive problems and substantial impairment of health-related quality of life (HRQoL). Patient-reported outcomes provide important information beyond ultrasound findings. **Objective:** To assess the impact of symptomatic uterine fibroids on women's health, daily functioning and HRQoL in a tertiary-care hospital population. **Methods:** A hospital-based observational study framework was developed for 150 women aged 25–55 years with sonographically documented symptomatic uterine fibroids. Demographic, clinical, haemoglobin and ultrasonographic variables were tabulated. Fibroid-specific symptom severity and HRQoL were assessed using the UFS-QOL framework. The numerical observations are modelled data for manuscript development. **Results:** Mean age was 41.8 ± 6.7 years. Heavy menstrual bleeding occurred in 72.0%, fatigue in 54.0%, dysmenorrhoea in 48.7% and pelvic pain in 44.0%. Anaemia was present in 64.7%. Intramural fibroids were most common (56.0%). Mean symptom severity score was 56.2 ± 18.1 and mean total HRQoL was 52.8 ± 18.7 . Mean HRQoL declined from 68.9 ± 12.7 in women with mild symptoms to 40.8 ± 13.9 in women with severe symptoms. **Conclusion:** Symptomatic uterine fibroids may affect menstrual health, energy, physical functioning, emotional well-being, social participation and sexual functioning. Comprehensive assessment should therefore include anaemia, functional impairment and patient-reported quality of life.

KEYWORDS

Uterine Fibroid; Leiomyoma; Heavy Menstrual Bleeding; Quality Of Life; Ufs-qol; Anaemia; Women's Health; Pelvic Pain.

INTRODUCTION

Uterine fibroids (leiomyomas) are benign monoclonal tumours of uterine smooth-muscle cells and are among the most frequently encountered structural abnormalities in gynaecological practice. Clinical presentation ranges from incidental asymptomatic lesions to heavy menstrual bleeding, pelvic pain, pressure symptoms, infertility and pregnancy-related complications.

The effect of a fibroid is not determined solely by its size. Location, number, relationship to the endometrial cavity, associated bleeding and individual symptom perception all contribute to the overall burden. Heavy menstrual bleeding may result in iron deficiency and anaemia, which can cause fatigue, reduced exercise tolerance, impaired concentration and limitations in occupational and household activities.

Pelvic pain and pressure may additionally interfere with sleep, mobility, sexual functioning and social participation. Consequently, uterine fibroids should be considered a broader women's-health problem rather than solely an anatomical uterine condition.

The Uterine Fibroid Symptom and Quality of Life (UFS-QOL) questionnaire was developed specifically to measure symptom severity and fibroid-related HRQoL. The original validation work demonstrated strong internal consistency and test-retest reliability, and subsequent studies demonstrated responsiveness to treatment [1,2].

A 2025 cross-sectional study from the Saurashtra region of Gujarat, including a Jamnagar setting, reported menorrhagia in 38% and intramural fibroids in 56% of 100 women [4]. This provides useful regional context. However, a verified public 150-patient clinical dataset from G.G.G. Hospital was not identified, so the numerical dataset used here is explicitly modelled.

2. AIM AND OBJECTIVES

Aim: To assess the impact of symptomatic uterine fibroids on women's health and health-related quality of life.

Objectives:

1. To describe the demographic and clinical profile of women with symptomatic uterine fibroids.
2. To determine the frequency of major symptoms and anaemia.
3. To describe fibroid location and size on ultrasonography.
4. To quantify symptom severity and HRQoL using the UFS-QOL framework.
5. To assess the relationship between symptom burden and quality of life.
6. To document functional, emotional, social and sexual consequences.

REVIEW OF LITERATURE

Spies et al. developed the UFS-QOL questionnaire as a disease-specific instrument for women with uterine leiomyomata. It combines symptom severity with several HRQoL domains and demonstrated excellent internal consistency and good test-retest reliability [1].

Subsequent validation and responsiveness studies showed significant improvements in symptom severity and HRQoL following treatment, supporting its use in clinical research and longitudinal assessment [2].

Borah et al. reported that increasing symptom number and severity were associated with poorer UFS-QOL scores, supporting the close relationship between symptom burden and perceived health status [5].

Neumann et al. reviewed 67 studies and found that fibroid treatments were generally associated with improvement in fibroid-specific quality of life and mental-health outcomes [3].

Recent Indian work has also demonstrated the feasibility of disease-specific quality-of-life measurement among women with uterine fibroids, while contemporary systematic reviews have supported UFS-QOL as a useful patient-reported outcome instrument [6,7].

Kaneria et al. reported a 100-woman cross-sectional study from the Saurashtra region, with menorrhagia in 38%, pelvic pain in 26% and intramural fibroids in 56% [4].

METHODOLOGY

Study design and setting

A hospital-based observational study framework was developed for a tertiary-care government hospital associated with M. P. Shah Government Medical College, Jamnagar, with Obstetrics and Gynaecology services.

Study population

The modelled cohort comprised 150 women aged 25–55 years with symptomatic, sonographically documented uterine fibroids.

DATA INTEGRITY NOTICE : This manuscript uses a 150-participant modelled/synthetic dataset for academic manuscript and statistical- format demonstration. It is presented as actual patient-level data from G.G. Hospital, Jamnagar.

Inclusion criteria

Women aged 25–55 years with one or more uterine fibroids on ultrasonography and at least one clinically relevant symptom such as heavy menstrual bleeding, pelvic pain, dysmenorrhoea or pressure symptoms.

Exclusion criteria

Pregnancy, suspected uterine malignancy, active pelvic infection, major medical conditions independently responsible for severe functional impairment, and inability to complete the patient-reported questionnaire.

Variables

Age, residence, parity, menstrual symptoms, pain, pressure symptoms, fatigue, urinary symptoms, infertility, haemoglobin concentration, fibroid location and size, symptom severity and UFS-QOL domains were considered.

Study duration

August 2025 to July 2026

Quality-of-life assessment

The UFS-QOL framework assesses symptom severity and six HRQoL domains: concern, activities, energy/mood, control, Higher symptom-severity scores indicate greater symptom burden, whereas higher HgoeL2 scores indicate better quality of life [1,2].

For actual research, institutional ethics committee approval, informed consent and secure anonymisation would be required. The current numerical dataset is synthetic/modelled and is intended only for academic drafting and research-format demonstration.

OBSERVATIONS AND RESULTS

The modelled cohort contained 150 participants. Mean age was 41.8±6.7 years. The largest age group was 35–44 years (50.7%). Rural participants accounted for 72.0%, and 70.7% were multiparous.

Table 1. Demographic profile

	n	%
Age 25–34 years	25	16.7
Age 35–44 years	76	50.7
Age 45–55 years	49	32.7
Rural residence	108	72.0
Urban residence	42	28.0
Multiparous	106	70.7
Nulliparous/primiparous	44	29.3

Table 2. Clinical manifestations

	n	%
Heavy menstrual bleeding	108	72.0
Dysmenorrhoea	73	48.7
Pelvic pain	66	44.0
Pelvic pressure/fullness	45	30.0
Passage of clots	67	44.7
Fatigue	81	54.0
Urinary symptoms	18	12.0
Infertility	14	9.3

Table 3. Haemoglobin profile

	n	%
≥11 g/dL	53	35.3

10–10.9 g/dL	32	21.3
7–9.9 g/dL	52	34.7
<7 g/dL	13	8.7
Anaemia <11 g/dL	97	64.7

Table 4. Fibroid location

	n	%
Intramural	84	56.0
Submucosal	27	18.0
Subserosal	21	14.0
Mixed/multiple	18	12.0

Table 5. Dominant fibroid size

	n	%
<3 cm	19	12.7
3–5 cm	53	35.3
>5–7 cm	49	32.7
>7 cm	29	19.3

Table 6. UFS-QOL symptom severity

	n	%
Mild	29	19.3
Moderate	63	42.0
Severe	58	38.7
Mean symptom severity score	56.2±18.1	—

Table 7. UFS-QOL HRQoL domains

	Mean ± SD
Total HRQoL	52.8 ± 18.7
Concern	48.6 ± 21.2
Activities	51.4 ± 20.3
Energy/mood	47.9 ± 22.1
Control	55.8 ± 20.4
Self-consciousness	58.2 ± 19.6
Sexual functioning	56.7 ± 23.1

Table 8. Impact on everyday health and functioning

	n	%
Work/activity limitation	74	49.3
Difficulty with household activities	69	46.0
Fatigue affecting routine	78	52.0
Sleep disturbance	42	28.0
Sexual activity affected	39	26.0
Emotional distress	61	40.7
Reduced social participation	47	31.3

Table 9. HRQoL according to symptom severity

	Mean HRQoL ± SD
Mild symptoms	68.9 ± 12.7
Moderate symptoms	55.1 ± 14.2
Severe symptoms	40.8 ± 13.9

DISCUSSION

The modelled findings demonstrate a multidimensional effect of uterine fibroids on women's health. Heavy menstrual bleeding was the predominant symptom, and 64.7% of participants had haemoglobin below 11 g/dL. Fatigue was reported by 54%, suggesting that the consequences of menstrual blood loss may extend beyond the bleeding episode.

Kaneria et al. reported menorrhagia in 38% and intramural fibroids in 56% of 100 women from the Saurashtra region []. The present modelled cohort also shows intramural fibroids as the most frequent pattern (56%). The difference in bleeding prevalence should not be interpreted as a direct epidemiological comparison because recruitment criteria and datasets differ.

Borah et al. demonstrated that increasing symptom burden was associated with poorer UFS-QOL scores []. The present modelled results show the same direction: mean HRQoL fell from 68.9 among women with mild symptoms to 40.8 among those with severe symptoms.

Neumann et al. reviewed 67 studies and reported improvements in fibroid-specific quality of life and mental-health outcomes following fibroid treatment []. This supports the use of patient-reported outcomes alongside anatomical and laboratory measures.

The observed functional effects included work/activity limitation, difficulty with household activities, fatigue affecting routine,

emotional distress and reduced social participation. Sexual functioning was also affected in a meaningful proportion, an area that may be missed if clinical assessment focuses only on menstrual bleeding.

Clinically, assessment should therefore include menstrual history, haemoglobin and iron status where appropriate, pain and pressure symptoms, reproductive goals, urinary or bowel symptoms and patient-reported quality of life. Management should be individualised according to symptoms, age, reproductive plans, fibroid location and size, comorbidities and patient preferences.

COMPARISON WITH SELECTED STUDIES

Study	Population	Key findings
Kaneria et al., 2025 [4]	100 women; Saurashtra/Jamnagar region	Menorrhagia 38%; pelvic pain 26%; intramural fibroids 56%.
Borah et al. [5]	Women with uterine fibroids	Greater symptom burden associated with poorer UFS-QOL scores.
Neumann et al., 2024 [3]	67 studies; systematic review	Fibroid treatments generally improved disease-specific QoL and mental-health outcomes.
Otonkoski et al., 2025 [8]	175 women; MR-HIFU	Substantial improvement in symptom severity and QoL after treatment.
Present modelled cohort	150 women	Heavy bleeding 72%; anaemia 64.7%; mean HRQoL 52.8; HRQoL declined with greater symptom severity.

SUMMARY

The manuscript demonstrates that uterine fibroids may affect multiple dimensions of women's health. Heavy menstrual bleeding, fatigue, dysmenorrhoea and pelvic pain were frequent in the modelled cohort. Anaemia was common, and many participants reported limitations in work, household activities, sleep, emotional well-being, social participation and sexual functioning.

Intramural fibroids were the most common sonographic pattern. Increasing symptom severity was associated with progressively poorer HRQoL. These findings are consistent with published evidence that patient-reported symptom burden is strongly associated with quality of life [,].

CONCLUSION

Uterine fibroids can have a substantial multidimensional impact on women's health. Heavy menstrual bleeding and associated anaemia may contribute to fatigue and reduced daily functioning, while pain, pressure and reproductive symptoms may further impair physical, emotional, social and sexual well-being.

The UFS-QOL framework provides a useful method for quantifying symptom burden and HRQoL and may help clinicians monitor response to treatment. Prospective Jamnagar-based research using verified patient-level data, ethics approval and standardised HRQoL assessment would provide stronger local evidence.

DECLARATIONS

Ethics approval: Required before use of real patient data; institutional approval should be documented for actual submission.

Informed consent: Required for prospective collection of patient-reported outcomes and publication, as applicable.

Data availability: The numerical tables in this manuscript are modelled/synthetic and do not represent a real patient-level dataset.

Conflict of interest: To be completed by the authors.

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