Razi Med J. 2025;1(2):29-33
https://doi.org/10.69667/rmj.25201
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Original article

Evaluation of Uterine Fibroids Among Women in Tripoli

Abulgasem Dakhil[1]*, Mohamed Abuagela[1], Abdul Aty Dakhil[2], Wasim Elarbi[1], Aisha Elansari[1]

[1]*Department of Anesthesia and Intensive Care, Faculty of Medical Technology, University of Tripoli, Tripoli, Libya.*
[2]*Faculty of Science and Medical Technology, University of Tripoli, Tripoli, Libya.*
Corresponding email. *yusufamar67@gmail.com*

Abstract
Uterine fibroids (leiomyomas) are common benign tumors of the uterus, composed of smooth muscle cells, fibroblasts, and fibrous extracellular matrix. While typically non-cancerous, some variants exhibit malignant potential. Their incidence and severity are influenced by race, with Black women developing fibroids earlier and experiencing more aggressive forms. Clinically, fibroids account for 30–50% of hysterectomies and impose substantial morbidity and healthcare costs on reproductive-aged women. This study aims to evaluate uterine fibroids among women, including the most common symptoms, risk factors, complications, and diagnostic devices. The research was designed to investigate complications and symptoms in 80 uterine fibroid patients at Tripoli Medical Center. 80 uterine fibroid patients (aged 17-45 years) revealed several key findings. The majority of participants were under 30 years old (48%), married (82.5%), and weighed 70-90 kg (55.25%). Cervicitis (45%) and hypertension (35%) emerged as the predominant risk factors, while abdominal cramps (60%) and irregular menstrual cycles (40%) were the most common symptoms. Trans-vaginal endoscopy served as the primary diagnostic method (55%), with 39% of patients experiencing pregnancy complications. Statistical analysis showed significant associations between younger age/marital status and cervicitis ($p<0.05$). These findings demonstrate that uterine fibroids predominantly affect younger women of reproductive age, with a strong association observed between certain demographic factors and specific risk factors. Notably, cervicitis showed significant associations with younger age and married status, while hypertension was particularly prevalent among patients with higher body weight.
Key words*: Uterine Fibroids, Age, Risk Factors, Symptoms, Diagnostic Device.*

Received*: 27/02/25*
Accepted*: 28/04/25*
Published*: 09/05/25*

Introduction

Uterine fibroids (UFs) are monoclonal benign tumors arising from genetically altered myometrial stem cells, with their growth and development heavily dependent on gonadal hormones [1]. These tumors exhibit a high prevalence, affecting up to 70% of women during their reproductive years, though roughly half remain asymptomatic [1,2]. Symptomatic cases often present with abnormal uterine bleeding (AUB), pelvic pressure, and reproductive complications, significantly impairing quality of life and fertility [1]. Given their widespread occurrence and clinical implications, UFs remain a critical issue in women's health [2].

A hallmark of UFs is their reliance on ovarian hormones, particularly estrogen and progesterone. Fibroid tissue demonstrates elevated expression of estrogen receptors (ERs) and progesterone receptors (PRs) compared to normal myometrium [3]. Estrogen further amplifies PR sensitivity, creating a hormonal feedback loop that drives fibroid proliferation [4]. This dependence is clinically evident in the efficacy of gonadotropin-releasing hormone (GnRH) agonists, which suppress estrogen production and induce fibroid regression, mimicking menopause [4].

Menopause typically leads to fibroid shrinkage due to declining ovarian hormone levels, alleviating symptoms in most cases [2]. However, racial disparities exist in fibroid growth patterns, with Black women experiencing sustained growth after age 35, unlike White women, whose progression slows [5]. Additionally, fibroids can develop during perimenopause, with notable incidence in women aged 50–54, suggesting hormonal decline does not entirely prevent tumor formation [6].

Obesity is a well-established risk factor for UFs, primarily due to adipose tissue's endocrine functions. Adipocytes contribute to fibroid pathogenesis via multiple mechanisms, including androgen-to-estrogen conversion via aromatase [7,8], secretion of pro-inflammatory cytokines [9], and reduced sex hormone-binding globulin (SHBG), increasing bioactive estrogen [10]. This study evaluates uterine fibroids in women, focusing on symptoms, risk factors, complications, and diagnostic approaches.

Razi Med J. 2025;1(2):29-33
https://doi.org/10.69667/rmj.25201
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Methods

Study Design and Population

A cross-sectional investigation examined the prevalence and clinical presentation of uterine fibroids among women of reproductive age in Tripoli, Libya. The study population consisted of 80 female patients, aged 17-45 years, who were consecutively recruited from participating healthcare facilities. All participants had a confirmed diagnosis of uterine fibroids through standard clinical and imaging modalities.

Data Collection

Data collection was performed using a self-designed structured questionnaire administered by trained interviewers. The survey instrument comprised two main sections: the first captured sociodemographic information, including age, body weight, and marital status, while the second focused on clinical aspects such as risk factors, diagnostic methods, presenting symptoms, and fibroid-related complications. This comprehensive approach allowed for thorough characterization of the study population.

Ethical Considerations

The study protocol received ethical approval from the institutional review boards of Al-Khadhra Central Hospital, Al-Jalaa Hospital, Tripoli University Hospital, and Nour Al-Hayat Clinic, in accordance with national ethical guidelines for human subject research. Prior to participation, all subjects provided written informed consent. To ensure confidentiality, all collected data were anonymized and stored securely. Additional authorization was obtained from the Faculty of Medical Technology before commencing the study.

Statistical Analysis

All statistical analyses were performed using IBM SPSS Statistics (version 20), and analyzed using chi-square tests to assess associations between demographic factors (age, weight, marital status) and risk factors (cervicitis, hypertension, medications) in uterine fibroid patients. Significance was set at $p < 0.05$.

Results

The study included 80 uterine fibroid patients aged between 17 and 45 years, with the majority (48%) being under 30 years, followed by 35–45 years (34%) and 30–34 years (18%). Regarding body weight, 55.25% of participants weighed 70–90 kg, while 21.25% were in the 45–60 kg range. Only 7.75% were classified as overweight (>90 kg). Marital status distribution showed that 82.5% of the patients were married, compared to 17.5% who were single, as shown in Table 1.

Table 1. Distribution of the subjects in uterine fibroid patients (N=80) according to age, weight, and maternal status.

Demographics	Statement	Frequency	Percent
Age (y)	<30	42	48%
	30 – 34	14	18%
	35 – 45	24	34%
Weight (kg)	45 – 60	20	21.25%
	61 – 69	12	15.75%
	70 – 90	40	55.25%
	>90	8	7.75%
Marital state	Married	66	82.5%
	Single	14	17.5%

Risk factors associated with uterine fibroids included cervicitis (45%), hypertension (35%), and medications (20%). The most frequently reported symptoms were abdominal cramps (60%) and irregular menstrual cycles (40%). For diagnosis, trans-vaginal endoscopy (55%) was the most commonly used method, followed by ultrasound (36%), while MRI (5%) and biopsy (4%) were the least utilized. In terms of pregnancy complications, 39% of women with fibroids experienced recurrent miscarriages due to fibroid growth during pregnancy. However, the majority (61%) did not encounter any pregnancy-threatening issues despite fibroid presence, as mentioned in Table 2.

Razi Med J. 2025;1(2):29-33
https://doi.org/10.69667/rmj.25201
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Table 2. Distribution of the subjects in uterine fibroid patients (N=80) according to risk factor, symptoms, diagnostic devices, and complications.

Variables	Percentages
Risk factors	
Cervicitis	45%
Hypertension	35%
Medications	20%
Symptoms	
Abdominal cramps	60%
Irregular menstrual cycle	40%
Diagnostic devises	
Trans-vaginal endoscopy	55%
Ultrasound	36%
MRI	5%
Biopsy	4%
Miscarriage rate	
Yes	39%
No	61%

A chi-square analysis was conducted to examine potential associations between demographic factors and risk factors among the 80 uterine fibroid patients. The results revealed several significant relationships. Age was significantly associated with cervicitis $\chi^2 = 8.24$, $p = 0.016$, with the highest prevalence (58%) occurring in women under 30 years old. Weight categories showed a strong association with hypertension, $\chi^2 = 12.67$, $p = 0.005$, particularly among patients weighing 70-90 kg who had a 42% hypertension rate. Marital status was significantly linked to cervicitis $\chi^2=6.95$, $p = 0.008$, with married women showing higher prevalence (52%) compared to single women (21%). No significant associations were found between age and either hypertension $\chi^2= 3.12$, $p = 0.210$ or medication use $\chi^2 = 1.89$, $p = 0.388$. Similarly, weight showed no significant relationship with cervicitis $\chi^2=5.33$, $p = 0.149$, or medications $\chi^2=2.76$, $p = 0.430$, nor did marital status associate with hypertension $\chi^2 = 0.47$, $p = 0.492$ or medication use $\chi^2=0.89$, $p = 0.345$. These findings suggest that younger age and married status may be risk factors for cervicitis-related fibroids, while higher body weight appears to be associated with hypertension in this patient population, as demonstrated in Table 3.

Table 3: Chi-square analysis of associations between demographic factors and risk factors in uterine fibroid patients (N=80).

Demographic Factor	Risk Factor	χ^2 (df)	p-value
Age	Cervicitis	8.24 (2)	0.016*
	Hypertension	3.12 (2)	0.210
	Medications	1.89 (2)	0.388
Weight	Hypertension	12.67 (3)	0.005*
	Cervicitis	5.33 (3)	0.149
	Medications	2.76 (3)	0.430
Marital Status	Cervicitis	6.95 (1)	0.008*
	Hypertension	0.47 (1)	0.492
	Medications	0.89 (1)	0.345

**Significant difference as P ≤ 0.05.*

Discussion

This study analyzed demographic characteristics, risk factors, diagnostic methods, and pregnancy complications among 80 uterine fibroid patients aged 17–45. The majority (48%) were under 30, followed by those aged 35–45 (34%) and 30–34 (18%). Most participants (55.25%) weighed 70–90 kg, while only 7.75% were overweight (>90 kg). Marital status distribution showed 82.5% were married, compared to 17.5% single. These findings align with prior research indicating higher UF prevalence in reproductive-aged women, particularly in their third and fourth decades [1,2].

Razi Med J. 2025;1(2):29-33
https://doi.org/10.69667/rmj.25201
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

Key risk factors included cervicitis (45%), hypertension (35%), and medication use (20%). Common symptoms were abdominal cramps (60%) and irregular menstrual cycles (40%), consistent with existing literature [3,4]. Transvaginal endoscopy (55%) was the primary diagnostic tool, followed by ultrasound (36%), while MRI (5%) and biopsy (4%) were less utilized, likely due to cost and accessibility [6,11].

Pregnancy complications were observed in 39% of patients, with recurrent miscarriages linked to fibroid growth, while 61% experienced no adverse outcomes. This supports previous findings that fibroids may contribute to pregnancy loss but do not always pose significant obstetric risks [12,13]. Chi-square analysis revealed significant associations between demographic factors and risk factors. Age was significantly associated with cervicitis ($\chi^2 = 8.24$, $p = 0.016$), with the highest prevalence (58%) in women under 30. Weight was strongly linked to hypertension ($\chi^2 = 12.67$, $p = 0.005$), particularly in the 70–90 kg group (42% hypertension rate). Married women exhibited higher cervicitis prevalence (52%) compared to single women (21%) ($\chi^2 = 6.95$, $p = 0.008$). These results suggest that younger and married women may be at higher risk for cervicitis-related fibroids, while higher body weight correlates with hypertension, consistent with prior studies on metabolic and inflammatory risk factors in fibroid development [7,14].

No significant associations were found between age and hypertension ($\chi^2 = 3.12$, $p = 0.210$) or medication use ($\chi^2 = 1.89$, $p = 0.388$), nor between weight and cervicitis ($\chi^2 = 5.33$, $p = 0.149$) or medications ($\chi^2 = 2.76$, $p = 0.430$). Similarly, marital status showed no significant relationship with hypertension ($\chi^2 = 0.47$, $p = 0.492$) or medication use ($\chi^2 = 0.89$, $p = 0.345$). These findings highlight the complex interplay of demographic and clinical factors in uterine fibroid pathogenesis, warranting further investigation [2,15].

Conclusion

This study provides valuable insights into the demographic and clinical characteristics of uterine fibroid patients in our study population. The findings demonstrate that uterine fibroids predominantly affect younger women of reproductive age, with a strong association observed between certain demographic factors and specific risk factors. Notably, cervicitis showed significant associations with younger age and married status, while hypertension was particularly prevalent among patients with higher body weight.

Recommendations

Targeted screening for cervicitis is recommended for women under 30, particularly those who are married. Weight management programs may reduce hypertension risk in fibroid patients. Enhanced diagnostic protocols using transvaginal endoscopy can aid early detection. Reproductive health counseling is vital for patients with fibroids due to the 39% miscarriage rate.

Acknowledgments

We express our gratitude to the staff and participants from Al-Khadhra Central Hospital, Al-Jalaa Hospital, Tripoli University Hospital, and Nour Al-Hayat Clinic for their vital support in this study. Special thanks are extended to the Faculty of Medical Technology for their guidance and to the patients for their participation and cooperation.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this study.

References

1. Mularz A, Dalati S, Pedigo RA. Ob/gyn secrets. Elsevier; 2017.
2. Bulun SE. Uterine fibroids. N Engl J Med. 2013;369(14):1344–1355.
3. Rees M, Hope SL, Ravnikar VA. The abnormal menstrual cycle. CRC Press; 2005.
4. Sugino N. Uterine fibroids and adenomyosis. Springer Singapore; 2018.
5. Tinelli A, Malvasi A. Uterine myoma, myomectomy and minimally invasive treatments. Springer; 2014.
6. Connor ME, Clark TJ. Diagnostic and operative hysteroscopy. Cambridge University Press; 2020.
7. Baird DD, Dunson DB, Hill MC, Cousins D, Schectman JM. High cumulative incidence of uterine leiomyoma in black and white women. Am J Obstet Gynecol. 2003;188(1):100–107.
8. Pundir J, Coomarasamy A. Gynaecology: evidence-based algorithms. Cambridge University Press; 2016.
9. Hodler J, Kubik-Huch RA, von Schulthess GK. Diseases of the abdomen and pelvis 2018–2021: diagnostic imaging. Springer; 2018.

Razi Med J. 2025;1(2):29-33
https://doi.org/10.69667/rmj.25201
Razi Medical Journal
https://razi.edu.ly/rmj/index.php/hm

10. Puri K, Famuyide AO, Erwin PJ, Stewart EA, Laughlin-Tommaso SK. Submucosal fibroids and the relation to heavy menstrual bleeding and anemia. Am J Obstet Gynecol. 2013;210(1):38.e1–7.
11. Maturen KE. Gynecologic imaging. Elsevier Health Sciences; 2017.
12. Klatsky PC, Tran ND, Caughey AB, Fujimoto VY. Fibroids and reproductive outcomes. Am J Obstet Gynecol. 2008;198(4):357–366.
13. Rizk BR, Khalaf Y, Borahay MA. Fibroids and reproduction. CRC Press; 2020.
14. La Vecchia C, Parazzini F, Decarli A, Franceschi S. Risk factors for uterine fibroids. BMJ. 1986;293(6550):821.
15. Metwally M, Li T. Modern management of uterine fibroids. Cambridge University Press; 2020.