

# Assessing the Quality of Life of Patients with Symptomatic Uterine Fibroid

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## ABSTRACT

The aim of the study was to determine the effect of symptoms of uterine fibroid on the quality of life of patients. A prospective study included 30 patients with symptomatic uterine fibroid aged 27 to 49 years. Participants passed the UFS-QOL questionnaire. The Quality of Life Index was  $63,6 \pm 18,4$  points, which indicated a decrease in the quality of life under the influence of symptoms of uterine fibroid. The decrease in the quality of life of patients with uterine fibroid was caused by negative symptoms, which affect the parameters associated with physical activity, pain, and psychological health.

Thus, the assessment of the Quality of Life Index has independent prognostic value and can be used when choosing a treatment strategy for patients with uterine fibroid.

**Key words:** uterine fibroid, symptoms, quality of life

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## INTRODUCTION

Currently, the question of studying uterine fibroid remains relevant, in connection with the frequency of its spread, the multifactorial nature of etiology and pathogenesis [1,2,3,6,12,22]. According to various authors, uterine fibroid are diagnosed in 20-25% of women of reproductive age [4,17], more than 60% of premenopausal age [4]. The peak of detection of uterine fibroid and the occurrence of clinical manifestations falls on the late reproductive age (32-35 years), which is 45-50% of all women [15].

The main clinical manifestations are uterine bleeding and pelvic pain [10,18]. Symptoms of uterine fibroid have a significant impact on the reproductive function and quality of life of women [5,13,19,23]. In one study, more than 21,000 women from 8 different countries had negative effects on sexuality (43%), performance (28%), and family relationships (27%) [25].

The world is actively studying the quality of life of women with various gynecological diseases [7,8,9,14,21,24,26]. The quality of life includes information on the main areas of human activity, while the quality of life of patients reflect components that are not related and related to the disease and allows you to differentially determine the effect of the disease and treatment on the patient's state [11,16,20,27,28].

## METHOD

A prospective study was conducted in 2017 at the Department of Gynecology of Astana Medical University

and included 30 patients with symptoms of uterine fibroid. Uterine bleeding was assessed using the Pictorial Blood Loss Assessment Chart (PBAC). Patients have been filling PBAC daily throughout the course of treatment. The number of points on the scale was calculated by summing the daily PBAC values throughout the course of treatment. Menorrhagia was defined as the number of points on a scale of more than 100 (during the first 8 days of the menstrual cycle), which corresponds to a blood loss of more than 80 ml. A score of 100 on a scale was a qualification criterion.

The severity of pain was assessed by the Visual Analogue Scale (VAS). It ended with a Uterine Fibroid Symptom and Quality of Life questionnaire (UFS-QOL).

The calculation of the severity of symptoms of uterine fibroid was carried out by a total assessment of all the above symptoms, which was evaluated in the point system from 1 to 5 points (formula №1).

The severity index of the condition = the received amount of points – min possible value / possible initial value x 100 (formula №1)

the lowest possible value = 8

possible initial value = 32

According to this formula, high scores indicate a greater severity of symptoms or anxiety, and lower scores indicate a minimal severity of symptoms.

Questionnaire for assessing the quality of life in patients with uterine fibroid over the past 6 months (Table 1).

Table 1 - Questionnaire QOL (Quality of Life) – Life quality of patients with uterine fibroid

1	Fear caused by uncertainty of commencement date and duration of menstruation
2	Fear of trips and travelling
3	Limitation of physical activity
4	Tiredness and fatigue
5	Reduction of time spent on sports or outdoor activities
6	Feeling of losing control over own life
7	Concern about underwear cleanliness
8	Decreasing of working abilities
9	Fatigue and drowsiness during a day
10	Weight gain
11	Observation that it is challenging to keep previous level of activity
12	Disturbance of social activity
13	Observation of changing of size or form of abdomen
14	Concern about cleanliness of bedclothes
15	Feeling of sadness, frustration
16	Feeling of depression
17	Feeling of desperation, hopelessness
18	Concern about own health condition
19	Thorough planning of activities
20	Inconvenience due to necessity to care about own look, to use special liners, tampons
21	Embarrassment
22	Lack of confidence for future
23	Irritability
24	Concern about cleanliness of clothes
25	Change of size and type of clothes during menstrual period
26	Feeling unconfident about health condition
27	Feeling of weakness and voidness
28	Reduction of sexual activity
29	Need to avoid sex contacts

Depending on the frequency of influence of the uterine fibroid symptoms on their life, patients chose one of 5 possible answers: never, sometimes, rarely, often, constantly.

The calculation was carried out by the total number of points listed below for each individual scale. The total score was calculated by summing the values of each of the individual scales.

Table 2 - Calculation of life quality indicators with use of QOL questionnaire.

Scores	Sum value	Max possible value	Possible base value
Concern	9+15+22+28+32	25	20
Level of activity	10+11+13+19+20+27+29	35	28
Energy/mood	12+17+23+24+25+31+35	35	28
Self-control	14+16+26+30+34	25	20
Anxiety	18+21+33	15	12
Sexual function	36+37	10	8
Life quality index	Amount of all six scores	145	116

Using formula №2, all values were calculated. Higher scores indicated a better result.

Quality of Life Index = max. possible value - the received amount of points / possible initial value x 100 (Formula №2)

Using special formulas, the indicator was calculated in the range of digits from 0 to 100, i.e. all results were multiplied by 100.

## RESULTS AND DISCUSSION

The main clinical manifestation was a pain symptom, which was observed in 83.3% of patients, and combination

of pain and heavy menstrual bleeding in 46.7% of patients. A thorough questioning revealed not only the presence of pain, but also its sufficiently strong severity. The intensity of the pain syndrome was evaluated on a visual analogue scale (VAS), and averaged from 4 to 9 points. Moderate pain (3-4 points) was noted in 12%, average pain (5-6 points) in 24%, severe pain (7-8 points) in 52%, and in 12% the pain was unbearable (9-10 points),  $p > 0,05$ . For all 30 patients, the amount of blood loss lost was calculated using the PBAC (Pictorial bloodloss assessment chart). The PBAC range ranged from 105 to 450 points ( $p > 0,05$ ), averaging  $224,6 \pm 103,4$  points ( $p < 0,005$ ).

Table 2 - Calculation of life quality indicators with use of QOL questionnaire.

Scores	Sum value	Max possible value	Possible base value
Concern	9+15+22+28+32	25	20
Level of activity	10+11+13+19+20+27+29	35	28
Energy/mood	12+17+23+24+25+31+35	35	28
Self-control	14+16+26+30+34	25	20
Anxiety	18+21+33	15	12
Sexual function	36+37	10	8
Life quality index	Amount of all six scores	145	116

The study used a classification of the severity of anemia in accordance with WHO criteria (2011). In a clinical blood test, a decrease in blood hemoglobin was observed in most patients ( $80,0 \pm 1,81\%$ ), and the level of hemoglobin was  $106,7 \pm 19,8 \text{ g / l}$  ( $p < 0,005$ ). The hemoglobin level was normal in 20%, anemia was observed in 80%, with mild anemia in 46,7%, and moderate anemia in 33,3% of patients.

Correlation analysis showed a direct relationship between the degree of blood loss on the PBAC scale and the level of hemoglobin in the blood ( $r = 0,31$ ;  $p > 0,05$ ).

In order to exclude other diseases, all patients underwent a general clinical examination, including a gynecological examination to determine the position, size and mobility of the uterus, formations on the surface of the uterus, appendages and arches.

In a gynecological examination, the size of the uterus corresponding to 5-7 weeks of pregnancy was detected in 20.0%, to 8-12 weeks in 46,6%, and to 13-16 weeks in 33.3% of patients.

The duration of the disease before going to the gynecologist was from 2 to 12 years, on average  $4,03 \pm 2,7$  years, for 2 years in 30%, for 3 years in 33,3%, for 4 years in 13%, for 5 years in 6,7%, for 7 years in 6,7%, for 9 years in 3,3%, for 10-12 years in 6,7% of patients.

Before going to the gynecologist, 56,7% of patients received various types of treatment, 43,3% monitored the growth of myomatous nodes for  $3,5 \pm 0,96$  years. Many patients did not seek help for 2-3 years, did not associate pain or abnormal uterine bleeding with uterine fibroid, and continued to take painkillers or hemostatic drugs.

The main complaints of patients with uterine fibroid in the UFS questionnaire (table 4)

Table 4 - UFS Questionnaire (Uterine Fibroid Symptom) - Symptoms of uterine fibroid.

How much inconvenience you experienced over last 6 months due to ...	Never		Rarely		Occasionally		Common		Very common	
	Abs.	(P±m) %	Abs.	(P±m) %	Abs.	(P±m) %	Abs.	(P±m) %	Abs.	(P±m) %
Excessive bleeding during menstrual period	6	20,0 ±7,24	11	36,7 ±4,76	8	26,6 ±6,01	2	6,7 ±3,5	3	10 ±2,86
Blood clots during menstrual period	6	20,0 ±7,24	5	16,7 ±8,1	11	36,6 ±4,76	3	10 ±2,86	5	16,7 ±8,1
Variations of duration of menstrual period	15	50,0 ±3,62	8	26,6 ±6,01	3	10 ±2,86	2	6,7 ±3,5	2	6,7 ±3,5
Variations of duration of menstrual cycle	9	30 ±5,53	8	26,6 ±6,01	11	36,7 ±4,76	0	0	2	6,7 ±3,5
Feeling of heaviness or pressure in pelvis area	5	16,7 ±8,1	12	40,0 ±4,44	5	16,7 ±8,1	15	46,7 ±8,1	3	10 ±2,86
Frequent urination in day time	11	36,7 ±4,76	8	26,6 ±6,01	3	10,0 ±2,86	2	6,7 ±3,5	6	20,0 ±7,24
Frequent urination in night time	12	40,0 ±4,44	11	36,6 ±4,76	2	6,7 ±3,5	0	0	5	16,7 ±8,1
Fatigue	5	16,7 ±8,1	11	36,6 ±4,76	8	26,7 ±6,01	5	16,7 ±8,1	1	3,3 ±2,27

The main complaints were a feeling of heaviness or pressure in the pelvic area - 83,3%, fatigue - 83,3%, heavy bleeding during menstruation - 80%, allocation of blood clots during menstruation - 80%. Frequent micturate urge during the daytime was noted in 63,3% of patients,

frequent micturate urge at night in 60% of patients. Fluctuations in the duration of the period of menstruation were noted in 50% of patients. Severe bleeding was noted in 24 patients; there were no bleeding in 6 patients.

Table 5 - Complaints depending on the location of the myomatous nodes

Symptoms	Complaints	FIGO classification												Total	
		FIGO-2		FIGO-3		FIGO-4		FIGO-5		FIGO-6		FIGO-8			
		a6 c	(P±m) %	a6 c	(P±m) %	a6 c	(P±m) %	a6 c	(P±m) %	a6 c	(P±m) %	a6 c	(P±m) %	a6 c	(P±m) %
Excessive bleeding during menstrual period	None	-	-	-	-	1	3,3±2,27	3	10±2,86	2	6,7±3,5	-	-	6	20±7,24
	Experienced:	2	6,7±3,5	4	13,3±3,2	4	13,3±3,2	6	20±7,2	6	20±7,2	2	6,7 ± 3,5	24	80±1,8
	Rarely	1	3,3±2,2	2	6,7±3,5	2	6,7±3,5	2	6,7±3,5	3	10±2,8	1	3,3±2,2	11	36,7±4,7
	Occasionally	-	-	1	3,3±2,2	1	3,3±2,2	3	10±2,8	3	10±2,8	-	-	8	26,6±6
	Common	-	-	1	3,3±2,2	1	3,3±2,2	-	-	-	-	-	-	2	6,7±3,5
	Very common	1	3,3±2,2	-	-	-	-	1	3,3±2,2	-	-	1	3,3±2,2	3	10±2,8
	Variations of duration of menstrual cycle	None	-	-	-	-	2	6,7±3,5	5	16,7±8,1	2	6,7±3,5	-	-	9
Experienced:		2	6,7±3,5	4	13,3±3,2	3	10±2,8	4	13,3±3,2	6	20±7,2	2	6,7±3,5	21	70±2,3
Rarely		1	3,3±2,2	-	-	2	6,7±3,5	2	6,7±3,5	3	10±2,8	-	-	8	26,6±6
Occasionally		-	-	3	10±2,8	1	3,3±2,2	2	6,7±3,5	3	10±2,8	2	6,7±3,5	11	36,7±4,7
Common		-	-	-	-	-	-	-	-	-	-	-	-	0	0
Very common		1	3,3±2,2	1	3,3±2,2	-	-	-	-	-	-	-	-	2	6,7±3,5
Feeling of heaviness or pressure in pelvis area	None	1	3,3±2,2	-	-	2	6,7±3,5	2	6,7±3,5	-	-	-	-	5	16,7±8,1
	Experienced:	1	3,3±2,2	4	13,3±3,2	3	10±2,8	7	23,3±6,5	8	26,7±6	2	6,7±3,5	25	83,3±1,6
	Rarely	1	3,3±2,2	3	10±2,8	2	6,7±3,5	3	10±2,8	3	10±2,8	-	-	12	48±4,4
	Occasionally	-	-	1	3,3±2,2	-	-	1	3,3±2,2	2	6,7±3,5	1	3,3±2,2	5	16,7±8,1
	Common	-	-	-	-	1	3,3±2,2	1	3,3±2,2	2	6,7±3,5	1	3,3±2,2	5	16,7±8,1
	Very common	-	-	-	-	-	-	2	6,7±3,5	1	3,3±2,2	-	-	3	10±2,8
Frequent urination in day time	None	2	6,7±3,5	3	10±2,8	2	6,7±3,5	1	3,3±2,2	1	3,3±2,2	2	6,7±3,5	11	36,7±4,7
	Experienced:	-	-	1	3,3±2,2	3	10±2,8	8	26,7 ± 6	7	23,3±6,5	-	-	19	63,3±2,7
	Rarely	-	-	1	3,3±2,2	2	6,7±3,5	3	10±2,8	2	6,7±3,5	-	-	8	26,7±6
	Occasionally	-	-	-	-	1	3,3±2,2	1	3,3±2,2	1	3,3±2,2	-	-	3	10±2,8
	Common	-	-	-	-	-	-	1	3,3±2,2	1	3,3±2,2	-	-	2	6,7±3,5
	Very common	-	-	-	-	-	-	3	10±2,8	3	10±2,8	-	-	6	20±7,2
Frequent urination in night time	None	2	6,7±3,5	2	6,7±3,5	2	6,7±3,5	3	10±2,8	1	3,3±2,2	2	6,7±3,5	12	40±4,4
	Experienced:	-	-	2	6,7±3,5	3	10±2,8	6	20±7,2	7	23,3±6,5	-	-	18	60±2,9
	Rarely	-	-	2	6,7±3,5	2	6,7±3,5	3	10±2,8	4	13,3±3,2	-	-	11	36,6±4,7
	Occasionally	-	-	-	-	-	-	1	3,3±2,2	1	3,3±2,2	-	-	2	6,7±3,5
	Common	-	-	-	-	-	-	-	-	-	-	-	-	-	
	Very common	-	-	-	-	1	3,3±2,2	2	6,7±3,5	2	6,7±3,5	-	-	5	16,7±8,1

Fatigue	None	-	-	1	3,3±2,27	1	3,3±2,27	2	6,7±3,5	1	3,3±2,27			5	16,7±8,1
	Experienced:	2	6,7±3,5	3	10±2,86	4	13,3±,23	7	23,3±6,56	7	23,3±6,56	2	6,7±3,5	25	83,3±1,62
	Rarely	1	3,3±2,27	2	6,7±3,5	2	6,7±3,5	2	6,7±3,5	3	10±2,86	1	3,3 ± 2,27	11	36,6±4,76
	Occasionally	1	3,3±2,27	-	-	2	6,7±3,5	3	10±2,86	2	6,7±3,5	-	-	-	
	Common	-	-	1	3,3±2,27	-	-	1	3,3±2,27	2	6,7±3,5	1	3,3±2,27	5	16,7±8,1
	Very common	-	-	-	-	-	-	1	3,3±2,27	-	-	-	-	-	

It was revealed, that the patients with the location of the myomatous node by FIGO-2, FIGO-3 and FIGO-4 often and very often complained of the release of blood clots during menstruation.

Significantly more frequent fluctuations in the monthly cycle were in patients with the location of the myomatous node by FIGO-2, FIGO-3.

A symptom of heaviness or pressure in the pelvic region was more often observed in patients with the arrangement of nodes according to FIGO-5 (23,3%) and by FIGO-6 (26,7%).

Frequent micturate urge during the daytime occurs in patients with localized nodes by FIGO-4, FIGO-5 and FIGO-6 (in 10%, 26,7% and 23,3%, respectively).

Frequent micturate urge at night is more common in patients with a subserous-intramural uterine fibroid (FIGO-5 in 6 -20 ± 7,24%) and FIGO-6 in 7 -23,3 ± 6,56%).

In accordance with the tasks set for all patients, the formula determines the value of the criterion for the index of severity of the condition.

State severity index was determined for all patients with use of formula as per set tasks. Main life quality indicators (Table 6):

Concern - within a range from 25 to 100 scores, in average the indicator was 66,6±23,0;

Activity level - within a range from 3,6 to 92,9 scores, in average the indicator was 67,1±23,1;

Energy/mood - within a range from 28,6 to 92,9 scores, in average the indicator was 65,8±20,4;

Self-control - within a range from 0 to 90 scores, in average the indicator was 56,8±22,6;

Anxiety - within a range from 25 to 91,7 scores, in average the indicator was 57,1±16,3;

Sexual function - within a range from 0 to 100 scores, in average the indicator was 63,2±30,8.

Table 6 - Average indicators of patient quality life (n=30, p<0,0001).

Life quality indicators	(M ± m)
Concern	66,6 ± 23,0
Level of activity	67,1 ± 23,1
Energy/Mood	65,8 ± 20,4
Self-control	56,8 ± 22,6
Anxiety	57,1 ± 16,3
Sexual function	63,2 ± 30,8
Life quality index	63,6 ± 18,4

A correlation was made between the symptoms of uterine fibroid and indicators of quality of life (table 7).

Table 7 - Correlation between symptoms of uterine fibroid and life quality indicators as per UFS-QOL questionnaire.

	Symptoms	Concern	Activ.lev.	Ener./Mood	Self-contr.	Anxiety	Sex.func.	Integr.ind.
Symptoms		-0.44	<u>-0.75***</u>	-0.47*	<u>-0.68***</u>	-0.46*	0.02	<u>-0.63***</u>
Concern	-0.44		<u>0.77***</u>	<u>0.83***</u>	<u>0.74***</u>	0.54*	0.07	<u>0.88***</u>
Activ.lev.	<u>-0.75***</u>	<u>0.77***</u>		<u>0.78***</u>	<u>0.89***</u>	0.44	0.27	<u>0.94***</u>
Ener./Mood	-0.47*	<u>0.83***</u>	<u>0.78***</u>		<u>0.87***</u>	0.37	0.29	<u>0.94***</u>
Self-control	<u>-0.68***</u>	<u>0.74***</u>	<u>0.89***</u>	<u>0.87***</u>		0.29	0.09	<u>0.92***</u>
Concern	-0.46*	0.54*	0.44	0.37	0.29		0.02	0.51*
Sex.func.	0.02	0.07	0.27	0.29	0.09	0.02		0.32
Integr.ind.	<u>-0.63***</u>	<u>0.88***</u>	<u>0.94***</u>	<u>0.94***</u>	<u>0.92***</u>	0.51*	0.32	

\*- p<0,05, \*\*- p<0,005, \*\*\* - p<0,0005

Symptoms of uterine fibroid have an inverse correlation with indicators of quality of life such as activity, self-monitoring and an integral indicator of quality of life (p <0,0005), and there is also an inverse correlation with indicators of anxiety and concern (p <0,05), and also there is no connection with the sexual function of these patients. Thus, the quality of life index was 63,6 ± 18,4, from 22,4 to 87,9 points, which indicates a decrease in the quality of life

under the influence of symptoms of uterine fibroid. The decrease in the quality of life of patients with uterine fibroid was caused by negative symptoms, which affect the parameters associated with physical activity, pain, and psychological health. This was especially true for women with metrorrhagia, exacerbating the negative effects of the presence of benign uterine formation due to limited working capacity.

## CONCLUSION

Thus, the Quality of Life Index was  $63,6 \pm 18,4$  points, which indicates a decrease in the quality of life under the influence of symptoms of uterine fibroid. The decrease in the quality of life of patients with uterine fibroid was caused by negative symptoms, which reflected in the parameters associated with physical activity, pain, and psychological health.

The assessment of the Quality of Life Index has an independent prognostic value and can be used when choosing a treatment strategy for women with uterine fibroid.

## DECLARATION OF INTEREST

The authors declared that they have no conflict of interest.

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