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Comparison of Quality and Lifestyle in Women with and Without Uterine Leiomyoma Referred to Gynecology Clinics of Shiraz University of Medical Sciences in 2018

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Abstract

Background: Uterine leiomyomas are considered as a major source of complications and the most common cause of hysterectomy.
Objectives: The aim of this study was to compare the quality of life in women with and without uterine leiomyoma referred to gynecology clinics of Shiraz University of Medical Sciences in 2018.
Methods: In this cross-sectional study, a total of 126 patients who referred to the clinics of Shiraz University of Medical Sciences were selected and divided into equal groups according to uterine leiomyoma, 1 - 7 cm uterine leiomyoma group and non-uterine leiomyoma group by convenience sampling. The World Health Organization Quality of Life and Healthy Lifestyle questionnaires were used for data collection. Independent t-test was used to analyze the data.
Results: The mean quality of life of women with uterine leiomyoma was 47.20 $\pm$ 12.41 and women without uterine leiomyoma had a significant difference (51.11 $\pm$ 11.23, t = 3.93, P = 0.041). The mean lifestyle of women with uterine leiomyoma was 114.18 $\pm$ 25.48 and women without uterine leiomyoma had 149.11 $\pm$ 23.81 (t = 4.01, P = 0.029).
Conclusions: The mean score of quality of life and lifestyle were significantly different in women with and without uterine leiomyoma. Therefore, it is necessary to improve the quality of life of women by improving their lifestyle and providing psychological counseling.

Keywords: Quality of Life, Lifestyle, Women, Uterine, Leiomyoma

1. Background

Women play an important role in determining the health and survival of the family as a core unit of society, and maintaining their health, especially in their reproductive ages, is crucial (1). Nowadays, many organ-related disorders and symptoms, including benign and malignant tumors, can occur in the internal genital system due to its location and responsiveness to various factors such as hormonal levels and infections (2). With regard to benign tumors, leiomyomas can be noted, which originate from the uterine smooth muscle (3) and can be considered as a major source of complications and the most common reason for hysterectomy (4). The tumor is most commonly found in people aged 30 - 50 (reproductive age) (5). Its incidence in white and black women is 70% and 80%, respectively, and is clinically evident in more than 25% (6). According to studies in Iran, Ahwaz (Iran) from 2007 to 2010 in women who had a hysterectomy; results showed that pathological findings included adenomyosis 21%, leiomyoma 30%, adenomyosis, and leiomyoma 21% (7). Despite the high prevalence of uterine leiomyoma, its cause has not been fully elucidated (8, 9). However, researchers have concluded that the cause of uterine leiomyomas cannot be attributed to one factor; rather, several factors may be involved (5). Studies have shown that factors such as age, endogenous hormonal factors, family history, weight, exercise, and stress influence uterine myoma (10, 11). Many studies have reported that uterine leiomyoma is dependent on estrogen and progesterone (9) and growth hormones, cytokines, and chemokines have been identified as potential stimuli for estrogen and progesterone. In addition to these epigenetic alterations, hereditary and extracellular matrix (ECM) are important in the creation and development of these tumors (6). uterine leiomyomas are di-

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agnosed in one-third of cases, and depending on the size of the tumor and their location, they show various clinical symptoms including pressure on adjacent organs, abnormal uterine bleeding (menorrhagia), infertility, pelvic pain or pressure and urinary symptoms (9, 11).

Women with myoma will have many problems and complications of sex hormone deficiency and subsequently, their quality of life will be affected by these problems; These women also may have a hysterectomy or uterine removal (12) which has complications such as abnormal vaginal bleeding, chronic pelvic pain that mostly affects the physical ability for several months and can affect the quality of life of these women. Considering that patients with this disorder experience stress, frustration, severe loss of self-esteem and reduced self-esteem, withdrawal and isolation, feelings of inadequacy and meaninglessness of life due to community pressure, fear of family disruption, loss of interest in spouse and potential stresses due to treatments; therefore, in addition to physical causes, they have many cognitive and emotional factors that lead to lower quality of life in women. These have a major impact on their attitudes and thoughts (13, 14). The psychological problems of women with uterine leiomyoma include depression, fear, anger, unhappiness, unhappiness, and anxiety leading to a change in their lifestyle (13). Researchers believe that 70% of diseases, including uterine leiomyoma, are somehow related to one's lifestyle (14, 15). The World Health Organization, in its report points out that lifestyle is based on distinctive definable patterns of behavior resulting from the interaction between the personal characteristics, social relations, environmental conditions, and socioeconomic status (16). Diet, physical activity, alcohol, and smoking are among the factors that can contribute to lifestyle changes (15). Baired et al. showed a significant negative relationship between exercise and physical activity with the growth of uterine leiomyoma so that physical activity and exercise decreased with increased uterine leiomyoma growth (17). Wise et al. also showed that in people with uterine leiomyoma, excess body weight and fat were found; which may be due to decreased physical activity in these patients (18).

Major issues that usually affect the quality of life of uterine leiomyoma patients include psychological and emotional effects of illness, diagnostic and therapeutic measures, stress, pain, depression, and effects of illness on family, marital and social relationships, economic problems caused by illness, nutritional issues and treatment-related complications (19). Studies on uterine leiomyoma in Iran are limited and no study was found to compare the style and quality of life of patients with and without uterine leiomyoma at the same time.

2. Objectives

The researcher conducted a study to compare the quality of life in women with and without uterine leiomyoma referred to gynecology clinics of Shiraz University of Medical Sciences in 2018.

3. Methods

3.1. Study Design and Sampling

This is a cross-sectional case-control study. The present study was performed in gynecology clinics affiliated to Shiraz University of Medical Sciences, Hazrat Zeinab Clinic, and Shaheed Faghihi Clinic in 2018. The statistical population of the present study included all women of reproductive age with or without uterine leiomyoma referred to gynecology clinics affiliated to Shiraz University of Medical Sciences.

According to the purpose and type of the study and based on previous studies (20) in this field by taking into account the assumptions of error of 5%, power of 80%, an effect size of 50% and one to one ratio, 63 individuals in each group and a total of 126 people were estimated using the following formula.

$$n = \frac{\frac{1+r}{r} S^2 \left(Z_{1-\frac{\alpha}{2}} + Z_{1-\beta} \right)^2}{\partial^2} \quad (1)$$

In the above formula, the values of z are constant and equivalent to the 97.5th percentile and the 80th percentile of the normal standardized distribution. The variable "r" is the ratio of people in the two groups, and the size of the effect is the value of divided by the standard deviation. The simple purposive sampling method was used for the study sampling.

The statistical sample was divided into two groups of patients with uterine leiomyoma (n = 63) and without uterine leiomyoma. The first group consisted of women aged 20 - 45 years with uterine leiomyoma of 1 - 7 cm and the second group consisted of patients without uterine leiomyoma.

The researcher referred to women's clinics affiliated to Shiraz University of Medical Sciences after receiving a letter of confirmation from the hospitals. After introducing the researcher and obtaining permission from the relevant physician, the following steps were performed.

The researcher first identified the women with uterine leiomyoma who were diagnosed by vaginal ultrasound. The consent form was provided with explanations on how to study and answer questions. After completing the demographic questionnaire, they completed the quality of life and lifestyle questionnaire if they were eligible for the study.

For every woman with uterine leiomyoma who was included in the study, a woman without uterine leiomyoma and bleeding diseases (infections, check-ups) were also included as controls, and they completed the Quality of Life and Life Style Questionnaires as well.

3.2. Inclusion and Exclusion Criteria

We included: 1- being 20 to 45 years old, 2- having BMI < 25, 3- not taking any hormonal medication, 4- not having any medical conditions including hypertension, thyroid, diabetes, etc. 5- signing the form of informed consent 6- not participating in any stress-related classes or programs such as relaxation, yoga, meditation.

Women with uterine leiomyoma should have vaginal ultrasound evidence of uterine leiomyoma with 1 to 7 cm size.

Taking any medication that affects the quality of life and mental health three months before the study, and the patient's unwillingness to participate in the study were excluded.

3.3. Intervention

The researcher referred to the women's clinics affiliated with Shiraz University of Medical Sciences on a daily basis after receiving a letter of confirmation from the hospitals. After introducing the researcher and obtaining permission from the relevant physician, the following steps were performed:

The researcher first identified the women whose uterine leiomyoma was diagnosed by vaginal ultrasound. The consent form was provided with explanations on how to study and answer potential questions.

3.4. Research Tools

1- A demographic questionnaire including demographic and gynecological data, which was completed by interviewing women with and without uterine leiomyoma.

2. World Health Organization Quality of Life Questionnaire: The questionnaire has 36 questions, and consists of eight subscales and each subscale consists of 2 to 10 items. This questionnaire measures eight dimensions of physical functioning, physical pain, general health, vitality, social functioning, psychological and mental health problems that form two summaries of physical health and mental health. In this questionnaire, a lower score indicates a lower quality of life and vice versa. Each subscale scores from 0 to 100 points. Scores above 50 on each subscale and total score indicate good quality of life (21). The validity and reliability of the questionnaire were evaluated in research by Montazeri et al. and Cronbach's alpha coefficients were reported as 0.9 to 0.77 (22).

3. Healthy Lifestyle Questionnaire: Healthy Lifestyle Questionnaire or Health-Promoting Lifestyle Questionnaire was designed by Walker et al. in 1987. The questionnaire consists of 54 items measuring six dimensions. These six dimensions are nutrition, exercise, responsibility for health, stress management (identifying sources of stress and stress management measures), interpersonal support (maintaining relationships with a feeling of intimacy), self- actualization (having a sense of purpose, seeking individual development and experience of awareness and satisfaction). The total score ranges between a minimum of 54 and a maximum of 216 and a separate score for each domain is measurable. A higher score means a healthier lifestyle. This questionnaire was used in Iran by Mohammadi Zeidi et al. (23). The Cronbach's alpha coefficient was 0.89 for the whole questionnaire (23). The obtained alpha will be the basis of our study.

3.5. Statistical Analysis Method

Data were presented as mean ± SD and number (present) for continuous and categorical data, respectively. Normality was evaluated by the Kolmogorov-Smirnov test. The *t*-test and chi-square were used to compare the groups. IBM SPSS statistics for windows, version 20 was also used for data analysis.

3.6. Ethical Considerations

The ethics committee approval was obtained from the Research Ethics Committee of Shiraz University of Medical Sciences. Permission to conduct the research was given by the authorities of the related units, and the full description of the objectives of the study was explained to the authorities. The authorities were assured that all research information was kept confidential.

4. Results

Findings related demographic characteristics showed that 91% of women with and 94% of women without uterine leiomyoma were educated at the university level equally (33.33%). Marriage age in 33.33% of women with uterine myoma and 36.50% of women without uterine leiomyoma was over 20 years. Furthermore, 90.47% of women with uterine leiomyoma and 93.65% of women without uterine leiomyoma had no family relationship with their spouse. Also, 40.48% of the husbands of women with uterine leiomyoma and 40.48% of the husbands of women without uterine leiomyoma had college education. A comparison of two groups of women with and without uterine leiomyoma showed no significant difference in demographic characteristics ($P > 0.05$) (Table 1). The findings presented showed the significance level of quality of

life and lifestyle variables in the two groups of women with and without leiomyoma were more than 0.05. Therefore, the assumption of normal distribution of quality of life in two groups of women with and without myoma is confirmed. In other words, the variable of quality of life has a normal distribution in the two groups of women with and without myoma. There was a significant difference between the mean quality of life in women with myoma (47.20 $\pm$ 12.41) and women without myoma (51.11 $\pm$ 11.23, t = 3.93, P = 0.041). A significant difference was observed between the mean of lifestyle of women with myoma (114.18 $\pm$ 25.48) and women without myoma (149.11 $\pm$ 23.81, t = 4.01, P = 0.029) (Table 2).

5. Discussion

The results of this study showed that the mean quality of life in women with uterine leiomyoma was lower than that of women without uterine leiomyoma. This part of the findings is consistent with some of the findings of Herve et al. (24), Borah et al. (25), and Ekin et al. (26).

The results of this study are in line with the study by Herve et al. (24), who evaluated the impact of uterine leiomyoma on the quality of life of French mothers. The Herve et al. team reported that 64% of women with moderate symptoms of uterine leiomyoma experienced the effect of symptoms on their quality of life and an overall lower quality of life score was observed in women with uterine leiomyoma (6.6) compared to women without uterine leiomyoma (24).

The Borah et al. study on 1000 American women with uterine leiomyoma showed that uterine leiomyoma had a significant effect on work (P = 0.008) and sexual activity (P = 0.01). They also reported that uterine leiomyoma had an impact on the ability to care for their offspring (25). The Ekin et al. study in Turkey on 145 women who had < 5 cm and > 5 cm uterine leiomyoma confirmed by ultrasound and 145 women without uterine leiomyoma also assessed the quality of life the women. They reported that women with uterine leiomyoma < 5 experienced urinary disorders and decreased physical activity while their quality of life was generally decreased (26).

These studies show that women with uterine leiomyoma have limitations in their social and occupational activities due to bleeding, severe pelvic pain, and urinary tract disorders. Also, because of these effects, taking medications and not improving with the medication, they feel that they will not have enough power for clinical therapies, so their quality of life will be affected. As a result, this study has been partially confirmed (27). Chronic myoma-induced stress can have an effect by increasing gonadotropin during the menstrual cycle and progestin increase in the follicular phase, resetting the various growth factors, cytokines, and extracellular matrix metalloproteinases. It can also cause physical inactivity and affect the quality of life by affecting the immune system and changing lifestyle (13, 14). The results of our study showed that the lifestyle of women with moderate uterine leiomyoma had a statistically significant relationship with those without uterine leiomyoma. The findings of the present study were in line with the Pavone et al. (28) study. One of the uterine leiomyoma risk factors is lifestyle, which includes caffeine intake, physical activity, and stress.

A study by Pavone et al. suggested that obesity is a risk factor for uterine leiomyoma that may be due to hormonal changes and inflammatory mechanisms. Obesity causes an increase in androgen reversibility and an increase in estrogen. It seems that physical activity, stress, cigarettes, caffeine, and nutrition stimulate molecular mechanisms and cause uterine leiomyoma growth (28-32).

Because lifestyle is a set of behaviors and actions based on the intrinsic values of the human being (28) that sets him or her on a path to prosperity, the most common factors associated with lifestyle are variously examined demographic variables such as age, ethnicity, and race. Healthy lifestyles encompass nutrition, exercise, responsibility for the health and stress management, interpersonal support, self-actualization, and a sense of being purposeful and having satisfaction (14, 32).

Physical activity can reduce the circulation of sex hormones and the amount of insulin and estrogen. Stressful experiences can be linked to an increase in obesity and an increase in blood pressure, all of which contribute to uterine leiomyoma growth. In addition, eating certain foods can affect the metabolism of endogenous hormones, especially estrogen. Studies showed that red meat consumption is associated with uterine leiomyoma growth, and fish consumption is associated with decreased uterine leiomyoma growth (29-33).

5.1. Study Limitations

The individual and psychological characteristics of women will affect their quality of life and lifestyle, which is beyond the ability of the researcher. Accordingly, it is suggested that this issue be addressed in future research. One of the strengths of this project is that, despite the limitations of studies in Iran, this study examines the quality of life and lifestyle together.

5.2. Conclusion

The mean quality of life and lifestyle in women with uterine leiomyoma was lower than the groups of women without uterine leiomyoma. Further studies will be required to investigate lifestyle factors such as diet and physical activity and stress that may have an effect on the forma-

Table 1. Frequency Distribution of Demographic Characteristics of Women with and Women Without Uterine Leiomyoma

Variable	Group of Women with Uterine Leiomyoma (N = 63), No. (%)	Group of Women Without Uterine Leiomyoma (N = 63), No. (%)	Total (N = 126), No. (%)	P Value, Test
Marital status				0.536, ANOVA
Single	0 (0)	0 (0)	0 (0)	
Married	57 (91)	59 (94)	116 (92)	
Deceased husband	5 (8)	4 (6)	9 (7)	
Divorced	1 (1)	0 (0)	1 (1)	
Education level				0.32, ANOVA
Illiterate	5 (7.93)	6 (9.52)	11 (8.73)	
Elementary	12 (19.04)	15 (23.80)	27 (21.42)	
Middle school	8 (12.69)	4 (6.34)	12 (9.52)	
Diploma	17 (26.98)	17 (26.98)	34 (26.98)	
University degrees	21 (33.33)	21 (33.33)	42 (33.33)	
Marriage age, y				0.42, ANOVA
1 - 15	4 (6.34)	5 (7.93)	9 (7.14)	
6 - 10	13 (20.63)	12 (19.04)	25 (19.84)	
11 - 15	7 (11.11)	11 (17.46)	18 (23.81)	
16 - 20	18 (28.57)	12 (19.04)	30 (23.80)	
20	21 (33.33)	23 (36.50)	44 (34.92)	
Being relative of husband				0.42, Chi-square
No	57 (90.47)	59 (93.65)	116 (92.06)	
Yes	6 (9.52)	4 (6.34)	10 (7.93)	

Table 2. Test Results of the Comparison of the Mean of Quality of Life for Women with and Without Myoma

Group	Mean	Standard Deviation	t	Significance Level
Quality of life				0.041
Women with UL	47.20	12.41	3.93	
Women without UL	51.11	11.23		
Life style				0.029
Women with UL	11.18	25.48	4.01	
Women without UL	149.11	23.81		

Abbreviations: UL, uterine leiomyoma

tion of leiomyoma. It can be recommended that lifestyle among Iranian women should be improved.

Footnotes

Authors' Contribution: MA and MZ prepared the first draft of the manuscript and made critical revisions to the paper and responded to the reviewers. MS helped in the search for articles and clinical research of the hospital.

Conflict of Interests: Authors have no conflict of interest.

Ethical Approval: The ethics committee approval was obtained from the Research Ethics Committee of Shiraz University of Medical Sciences. Permission to conduct the research was given by the authorities of the related units, and the full description of the objectives of the study was explained to the authorities. The authorities were assured that all research information was kept confidential. 97-01-08-17783, ethic code: IR.SUMS.REC.1397.805.

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explanations on how to study and answer potential questions.

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