

## Sexual Function in Women With Rheumatoid Arthritis

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**Background:** Sexual function is one of the most important aspects of life affected by chronic disorders.

**Objectives:** This study aims to investigate sexual function in women diagnosed with rheumatoid arthritis.

**Patients and Methods:** This case-control study was conducted on 50 women with rheumatoid arthritis as the case group and 50 healthy women as the control group in Hafez Hospital, Shiraz, Iran. Data were collected by demographic and the Female Sexual Function Index questionnaires from June to August, 2013. Statistical analysis that included the chi square test, independent sample t-test, and linear regression were carried out using SPSS software (version 16).

**Results:** Two groups were matched according to age, educational level, occupation, menarche age, husband's age, marital age, gravidity and menstrual cycle status ( $P > 0.05$ ). Total score from the Female Sexual Function Index in the case group ( $15.9 \pm 11.16$ ) was significantly lower than control group ( $27.29 \pm 5.67$ ). Also, in all subscales, the score for sexual function (desire, arousal, lubrication, orgasm, satisfaction, and pain) in the case group was lower than the control group ( $P < 0.001$ ). From patients' perspective, fatigue, limitation of joint movement, vaginal dryness, and reduction of sexual desire affected their sexual function. Also, linear regression indicated a negative association between duration of disease and sexual dysfunction.

**Conclusions:** Our findings show that rheumatoid arthritis adversely affects women's sexual function. Thus, clinicians should pay attention to these patients regardless of symptom severity or treatment response.

**Keywords:** Sexual Dysfunction; Women's Health; Rheumatoid Arthritis

### 1. Background

Sexual health is a state of physical, emotional, mental and social wellbeing related to sexuality, not merely the absence of disease, dysfunction or infirmity (1). In humans, sexual desires are one of the biggest problems that affect their personal as well as social lives and satisfaction of such desires plays a decisive role in the creation of a human's personality. Separation of these desires from behavior is inevitable (2, 3). Sexual issues are considered primary problems with married life and compatibility. Proportionality and equilibrium in sexual relationships between married couples are among the most important factors of happiness and success of married life (4). Sexual function of each individual is the result of defined behaviors according to sex -a joint psycho-physical role and status that remain with the individual throughout life. The effect of interactions between biological, psychological, social, economic, political, cultural, moral, legal, historical, religious and spiritual factors on the sexual function of individuals should not be ignored (5). In addition to the aforesaid factors, sexual function becomes

impaired in individuals with chronic medical conditions such as rheumatoid arthritis, multiple sclerosis (MS), spinal cord injuries, and cancer (6).

Rheumatoid arthritis is a chronic inflammatory disease that affects all dimensions of an individual's life, particularly their sexual function (7). In individuals affected with rheumatoid arthritis, physical problems such as restrictions in joint mobility, emotional disturbances and disorders in the husband-wife relationship will occur and result in reductions in sexual function, leading to a less enjoyable sexual life (8, 9). Results from some studies have shown an increased prevalence of sexual dysfunction in persons with this disease (10, 11). In a research carried out in Greece, the prevalence of sexual dysfunction has been reported to be 60.0% in such persons (12). Of note, this chronic disease affects women 2.5 times more than men. Involvement of rheumatoid arthritis in the main parts of the life of sufferers largely impacts their quality of life (13). Sexual function is one of the most pivotal factors for the continuity of marital life that has a large

#### Implication for health policy/practice/research/medical education:

This research is useful for health research.

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effect on other dimensions of a couple's life, therefore paying attention to the factors that affect this domain is necessary (7). Although researchers in Iran have studied sexual health, there are few studies that pertain to sexual function of sufferers from chronic diseases and those with permanent disabilities. Chronically ill patients suffer throughout their lives due to the chronic nature of their disease, which influences the quality of their life. The resultant long term effects are undeniable.

## 2. Objectives

Given the importance of this issue and the lack of research in Iran, this study intends to investigate sexual function among women who have rheumatoid arthritis.

## 3. Patients and Methods

This was an analytical case-control study conducted from June-August, 2013 that investigated the sexual function of women diagnosed with rheumatoid arthritis. In this analytical study, the sample size was selected based on the Equation 1:

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**Equation 1.** 
$$\left(Z_{1-\frac{\alpha}{2}}\right)^2 \times \frac{P(1-P)}{d^2}$$

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$Z_{1-\alpha/2} = 1.96$ ;  $P = 60\%$ ;  $d = 1\%$ ; fifty women with rheumatoid arthritis who were hospitalized in the Rheumatology Ward of Hafez Hospital in Shiraz city were selected as the case group and 50 healthy women from the family members or relatives, who attended the hospital with patients as the control group. Patients with rheumatoid arthritis were diagnosed according to clinical symptoms and the clinical diagnosing criteria of the American Rheumatology Association (14). The inclusion criteria were as follows: not menopausal; married with a surviving husband; no benign diseases of the genital system such as irregular uterine bleeding, endometrial hyperplasia, or cervical polyps; and no malignant or pre-malignant diseases of the genital system. Exclusion criteria included psychological disorders such as depression; history of sexual dysfunction prior to diagnosis of rheumatoid arthritis; smoking history; use of alcohol, cocaine and other narcotics; or the use of anti-convulsive medications (carbamazepine, phenytoin, phenobarbital), anti-psychotics, lithium, combined oral contraceptive pills (OCP), spironolactone, GnRH agonists, danazol, levodopa, amphetamines, bupropion and anti-hypertension drugs. In order to control for confounding factors, both groups had similar variables of age, education, occupational status, menarche age, husband's age, marriage duration, number of pregnancies and menstrual status.

In order to identify eligible subjects, the researcher obtained the histories of all hospitalized female patients hospitalized in the Rheumatology Ward of the hospital. After discussing the aim of the study with eligible sub-

jects, the participants signed an informed consent and completed the questionnaires in private. The data collection tool in this research was a questionnaire comprised of three parts - demographic information, evaluation of sexual function and patient's attitude regarding the effect of the disease on sexual relationships.

Sexual function in this research was assessed by an FSFI questionnaire, the Female Sexual Function Index by Rosen et al. (15). The reliability and validity of the Iranian version of this questionnaire was confirmed (16). This standard scale evaluates six dimensions of sexual function including desire, arousal, lubrication, orgasm, satisfaction and pain during the four weeks prior to administration of the questionnaire. The questions of this questionnaire prepares the probability of investigating the sexual function of research subjects according to DSM-IV (17). The cut-off for the questionnaire is a score of 28. Scores above 28 indicate desirable sexual function and those below indicate undesirable sexual function (18). In order to study the patient's attitude regarding the effect of disease on sexual relationships, the research team generated a scale that took into consideration similar studies (10) and following face validity, it was confirmed by experts. Data were analyzed using SPSS software version (15). The significant level in this research was less than 0.05.

## 4. Results

The results of the chi-square and independent t-tests showed that both groups were similar in terms of age, educational status, occupational status, menarche age, marital age, gravidity and menstrual status ( $P > 0.05$ ). The average age of cases was  $36.68 \pm 8.7$  years and for controls, it was  $33.82 \pm 7.7$  years. The majority of women from both groups were housewives who had less than a diploma education. Other demographic characteristics are shown in Table 1. The mean period of duration of rheumatoid arthritis disease in the case group was  $12.17 \pm 5.58$  years. FSFI scores showed that the sexual function of 10 (20.0%) women from the case group was suitable. In the control group, 37 women stated that sexual function was desirable. The prevalence of sexual dysfunction in the case group was 80.0%, whereas it was 26.0% for the control group, which was statistically significant ( $P < 0.001$ ).

According to the independent t-test, the total score, in addition to the mean score of all dimensions of sexual function, was significantly less compared to the control group (Table 2). The results of patients' attitudes regarding the impact of this disease showed an adverse effect on their marital relationship in 27.0% of the cases and reduction of sexual function in 75.0% of the cases. A total of 63.0% of the women with rheumatoid arthritis reported that their husbands were unaware of the effect this disease had on their sexual function.

Chi square test was used to determine the relationship between rheumatoid arthritis and sexual dysfunction.

**Table 1.** Demographic Characteristics of Study Groups (n = 50)<sup>a</sup>

Variable	Case Group	Control Group	P Value
<b>Age</b>	36.68 ± 8.7	33.82 ± 7.7	0.40
<b>Menarche age</b>	13.16 ± 1.5	13.64 ± 1.2	0.13
<b>Marital age</b>	20.38 ± 3.4	22.22 ± 3.7	0.20
<b>Number of pregnancies</b>			0.62
1-3	31 (62)	31 (62)	
3-5	13 (26)	14 (28)	
> 5	6 (12)	5 (10)	
<b>Menstruation cycle status</b>			0.21
Regular	37 (74)	43 (86)	
Irregular	13 (26)	7 (14)	
<b>Education level</b>			0.17
< Diploma	26 (52)	19 (38)	
Diploma	14 (28)	17 (34)	
University	10 (20)	14 (20)	
<b>Occupational status</b>			0.11
Employed	10 (20)	18 (36)	
Housekeepers	40 (80)	32 (64)	

<sup>a</sup> Data are presented as Mean ± SD or No. (%).

**Table 2.** Total and Domain Scores of Sexual Function Among Case and Control Groups<sup>a</sup>

Variable	Case Group	Control Group	P Value
<b>Desire</b>	2.56 ± 1.58	4.06 ± 1.08	< 0.001
<b>Arousal</b>	1.88 ± 1.75	4.38 ± 1.26	< 0.001
<b>Lubrication</b>	3.05 ± 2.38	4.54 ± 1.17	< 0.001
<b>Orgasm</b>	2.4 ± 2.11	4.76 ± 1.05	< 0.001
<b>Satisfaction</b>	2.84 ± 1.77	5.24 ± 0.96	< 0.001
<b>Pain</b>	3.15 ± 2.55	4.28 ± 1.39	< 0.001
<b>Total score</b>	15.9 ± 11.16	27.29 ± 5.68	< 0.001

<sup>a</sup> Data are presented as Mean ± SD.

**Table 3.** Linear Regression Model of Association Between Durations of Marriage, Disease and Total Score of Sexual Function

Independent variables	Standard Error	β-Coefficient	95% Confidence Interval	P Value
<b>Duration of Marriage</b>	0.448	0.063	-5.79-29.9	0.661
<b>Duration of Disease</b>	2.561	-0.093	12.06-22.35	0.001

There was a significant relation between the total score of the questionnaire and patients' attitudes regarding the change in the process of the sexual relationship after the disease ( $P < 0.001$ ), feelings of fatigue ( $P = 0.004$ ), limitation of movement in the joints ( $P = 0.04$ ), vaginal dryness ( $P = 0.02$ ) and reduction in libido ( $P < 0.001$ ). However no significant relationship was found between joint and muscle (myalgia) pain, joints sclerosis and reduction of sense in the fingers with the obtained score ( $P = 0.07$ ). The

linear regression test was used to study the relationship between total score of sexual function and factors such as the disease and marriage duration in the case group. The results showed that the duration of disease had a reverse, significant relation to sexual function ( $\beta = -0.09$ ,  $P < 0.001$ ) in such a way that increased years of disease resulted in a decreased total score of sexual function. This relation was not observed in connection with marriage duration (Table 3).

## 5. Discussion

Rheumatoid arthritis is a chronic disease that negatively impacts sexual function in the affected women. The incidence of physical problems, disturbance in emotional and communicational relations with the husband from one side along with pain, fatigue, joint sclerosis, functional weakness, anxiety, negative body image, reductions in libido, hormonal imbalance and the resultant complications from medications on the other hand will result in sexual dysfunction (10).

The results of the present study showed the presence of sexual dysfunction in 80.0% of rheumatoid arthritis patients. This rate was approximately twice the total prevalence of sexual disorders among the general population of women (19, 20). The prevalence of sexual problems among patients with rheumatoid arthritis ranges from 31.0% to 76.0% (21). Lillegraven and Kvien have shown a higher rate of sexual dysfunction in women with rheumatoid arthritis compared to healthy women, which was probably related to depression (13). These results were confirmed in various studies worldwide (11, 21-28).

A comparison of obtained mean scores with determined cut-off points in the Iranian version of the FSFI was used to determine the presence of a disorder in each one of the sexual function domains. The results have shown lower mean scores in the sexual function domains from the determined cut-off points and confirmed the existence of dysfunction in all dimensions of sexual function. A diagnosis of sexual dysfunction among women is made according to the mean score of sexual function according to the DSM-IV. In the current study, we have reported the mean score of sexual satisfaction as  $2.14 \pm 1.28$ , which was less than the specified cut-off point and indicative of sexual dysfunction among women with rheumatoid arthritis. Results from a study by Van Berlo et al. (21) showed that the mean dimension of sexual desire (desire), vaginal lubrication and orgasm among women with rheumatoid arthritis was less than the control group, which was similar to the obtained results of our study. The rate of sexual satisfaction and pain among patients in the Van Berlo et al. (21) study was not statistically significant compared to the control group, whereas in our study, most of the problems were associated with sexual dissatisfaction. Limitations in joint movement, fatigue, reduction in libido and vaginal dryness have been reported by our patients as attributed to rheumatoid arthritis. These limitations were among the factors related to sexual dysfunction. Therefore a study of the attitudes and opinions of patients regarding their sexual health and specifying the involved factors in this direction is of great importance.

Hill et al. surveyed the effects of rheumatoid arthritis on sexual activity and inter-personal relationships. In their study, 56.0% of patients stated that rheumatoid arthritis limited their sexual function and relationships. Fatigue and pain were among the highest causes of this limitation. A total of 56.0% stated that this disease did not place any negative effect on their inter-personal sentimental

relationships. The obtained results from our study regarding the effect of fatigue on sexual function as well as the effectiveness of emotional relationships with the husband in less than one third of the cases confirmed the above mentioned results (18). The results of a study by Akkus et al. on factors which affect sexual satisfaction of patients with rheumatoid arthritis also showed that 35.3% of patients believed their sexual life changed as a result of rheumatoid arthritis. Patients reported reductions in sexual activity (29). In the current study 75.0% of patients reported a reduction in their sexual activity and relationships followed by rheumatoid arthritis. This rate was higher than similar studies. Gutweniger et al. stated that morning joint stiffness played an important role in the sexual dysfunction of patients with rheumatoid arthritis (30). Kraaimaat et al. reported that physical limitations, pain and depression were related to sexual dysfunction (31). In the present research, in addition to fatigue feeling and limitation in movements, vaginal dryness and reduction in desire were two other variables that negatively impacted sexual function according to patients. In the present research, a high percentage of husbands of the participants in the case group acknowledged that they were unaware of the effects of rheumatoid arthritis on the sexual activity of their wives. The couples did not speak with each other about this matter. In consideration of this fact and the significance of the impact of disease duration on sexual function, therefore it appears that sexual consultations and educational programs would benefit these couples. These programs would enable couples to generate a correct attitude about rheumatoid arthritis and its effect on sexual relationships and possibly reduce problems and sexual dysfunction of women with rheumatoid arthritis.

The prevalence of sexual dysfunction among women with rheumatoid arthritis is more than healthy women. Therefore, it is necessary to increase attention to the sexual dimension of these patients' lives by conducting appropriate educational and related care services.

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## Authors' Contribution

Raziyeh Maasoumi designed the research, contributed the data analysis, and revised the manuscript; Maryam Moridi contributed the data collection and data analysis, and also written the manuscript; Fatemeh Farhadi conducted the data collection; Zeinab Moshfeghi designed the research and revised the manuscript.

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## References

- Mimoun S, Wylie K. Female sexual dysfunctions: definitions and classification. *Maturitas*. 2009;**63**(2):116-8.
- Quinn C, Browne G. Sexuality of people living with a mental illness: a collaborative challenge for mental health nurses. *Int J Ment Health Nurs*. 2009;**18**(3):195-203.
- van der Stege HA, van Staa A, Hilberink SR, Visser AP. Using the new board game SeCZ TaLK to stimulate the communication on sexual health for adolescents with chronic conditions. *Patient Educ Couns*. 2010;**81**(3):324-31.
- Darmohammadi M, Jafarnejad F, Afzal M, Kazemini BH. Relationship between sexual function and obesity in women. *IJOGI*. 2012;**15**(24):26-33.
- Graziottin A, Serafini A, Palacios S. Aetiology, diagnostic algorithms and prognosis of female sexual dysfunction. *Maturitas*. 2009;**63**(2):128-34.
- Kessler TM, Fowler CJ, Panicker JN. Sexual dysfunction in multiple sclerosis. *Expert Rev Neurother*. 2009;**9**(3):341-50.
- Reese JB, Somers TJ, Keefe FJ, Mosley-Williams A, Lumley MA. Pain and functioning of rheumatoid arthritis patients based on marital status: is a distressed marriage preferable to no marriage? *J Pain*. 2010;**11**(10):958-64.
- Repping-Wuts H, Uitterhoeve R, van Riel P, van Achterberg T. Fatigue as experienced by patients with rheumatoid arthritis (RA): a qualitative study. *Int J Nurs Stud*. 2008;**45**(7):995-1002.
- Kwan KS, Roberts LJ, Swalm DM. Sexual dysfunction and chronic pain: the role of psychological variables and impact on quality of life. *Eur J Pain*. 2005;**9**(6):643-52.
- Perdriger A, Solano C, Gossec L. Why should rheumatologists evaluate the impact of rheumatoid arthritis on sexuality? *Joint Bone Spine*. 2010;**77**(6):493-5.
- Tristano AG. The impact of rheumatic diseases on sexual function. *Rheumatol Int*. 2009;**29**(8):853-60.
- Ostensen M. New insights into sexual functioning and fertility in rheumatic diseases. *Best Pract Res Clin Rheumatol*. 2004;**18**(2):219-32.
- Lillegraven S, Kvien TK. Measuring disability and quality of life in established rheumatoid arthritis. *Best Pract Res Clin Rheumatol*. 2007;**21**(5):827-40.
- Visser H. Early diagnosis of rheumatoid arthritis. *Best Pract Res Clin Rheumatol*. 2005;**19**(1):55-72.
- Rosen R, Brown C, Heiman J, Leiblum S, Meston C, Shabsigh R, et al. The Female Sexual Function Index (FSFI): a multidimensional self-report instrument for the assessment of female sexual function. *J Sex Marital Ther*. 2000;**26**(2):191-208.
- Bakht S, Najafi S. Body image and sexual dysfunctions: comparison between breast cancer patients and healthy women. *Procedia Social and Behavioral Sciences*. 2010;**5**:1493-7.
- American psychiatric association. *Diagnostic and Statistical Manual of Mental Disorders DSM-IV-TR*. 4th ed. Washington: American Psychiatric Publishing; 2000.
- Hill J, Bird H, Thorpe R. Effects of rheumatoid arthritis on sexual activity and relationships. *Rheumatology (Oxford)*. 2003;**42**(2):280-6.
- Costa EM, Mendonca BB, Inacio M, Arnholdt IJ, Silva FA, Lodovici O. Management of ambiguous genitalia in pseudohermaphrodites: new perspectives on vaginal dilation. *Fertil Steril*. 1997;**67**(2):229-32.
- Palacios S, Castano R, Graziottin A. Epidemiology of female sexual dysfunction. *Maturitas*. 2009;**63**(2):119-23.
- Van Berlo WT, van de Wiel HB, Taal E, Rasker JJ, Weijmar Schultz WC, van Rijswijk MH. Sexual functioning of people with rheumatoid arthritis: a multicenter study. *Clin Rheumatol*. 2007;**26**(1):30-8.
- Areskoug-Josefsson K, Oberg U. A literature review of the sexual health of women with rheumatoid arthritis. *Musculoskeletal Care*. 2009;**7**(4):219-26.
- Helland Y, Dagfinrud H, Kvien TK. Perceived influence of health status on sexual activity in RA patients: associations with demographic and disease-related variables. *Scand J Rheumatol*. 2008;**37**(3):194-9.
- Abdel-Nasser AM, Ali EI. Determinants of sexual disability and dissatisfaction in female patients with rheumatoid arthritis. *Clin Rheumatol*. 2006;**25**(6):822-30.
- Ferreira Cde C, da Mota LM, Oliveira AC, de Carvalho JF, Lima RA, Simaan CK, et al. Frequency of sexual dysfunction in women with rheumatic diseases. *Rev Bras Reumatol*. 2013;**53**(1):35-46.
- Kobelt G, Texier-Richard B, Mimoun S, Woronoff AS, Bertholon DR, Perdriger A, et al. Rheumatoid arthritis and sexuality: a patient survey in France. *BMC Musculoskelet Disord*. 2012;**13**:170.
- Josefsson KA, Gard G. Women's experiences of sexual health when living with rheumatoid arthritis—an explorative qualitative study. *BMC Musculoskelet Disord*. 2010;**11**:240.
- El Miedany Y, El Gaafary M, El Aroussy N, Youssef S, Ahmed I. Sexual dysfunction in rheumatoid arthritis patients: arthritis and beyond. *Clin Rheumatol*. 2012;**31**(4):601-6.
- Akkus Y, Nakas D, Kalyoncu U. Factors Affecting the Sexual Satisfaction of Patients with Rheumatoid Arthritis and Ankylosing Spondylitis. *Sexuality and Disability*. 2010;**28**(4):223-32.
- Gutweniger S, Kopp M, Mur E, Gunther V. Body image of women with rheumatoid arthritis. *Clin Exp Rheumatol*. 1999;**17**(4):413-7.
- Kraaimaat FW, Bakker AH, Janssen E, Bijlsma JW. Intrusiveness of rheumatoid arthritis on sexuality in male and female patients living with a spouse. *Arthritis Care Res*. 1996;**9**(2):120-5.