Evaluation of Sexual Function in Women with Rheumatoid Arthritis

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Purpose: To evaluate the link between rheumatoid arthritis (RA) and female sexual functioning.

Material and Methods: A total of 32 women with RA and 20 healthy age matched controls were enrolled in this study. The participations are asked to complete Female Sexual Function Index (FSFI), The Short form 36 (SF-36) Health Survey and Beck Depression Inventory (BDI) questionnaires.

Results: The groups were comparable in terms of demographic characteristics. The women with RA represented significantly worse sexual functioning in category of desire, arousal, lubrication, orgasm, satisfaction domain and total FSFI score compared with healthy women (P = .0001, P = .0001, P = .0001, P = .0001, P = .022 and P = .0001, respectively). The mean BDI scores for the patients with RA were greater than control group (P = .036). Women with RA also had significantly lower quality of life (QoL) parameters: physical functioning, limitations due to physical health, pain, general health, vitality and limitations due to emotional problems compared with healthy women (P = .0001, P = .0001, P = .028, P = .002, P = .001 and P = .0001, respectively).

Conclusion: The present study shows that a significant percent of patients with RA had sexual dysfunction and also deterioration in QoL.

Keywords: arthritis; rheumatoid; female; sexual dysfunction; quality of life.

INTRODUCTION

The rheumatoid arthritis (RA) is a prevalent, idiopathic, autoimmune disease, which is more common in women with a prevalence of about %1 worldwide.[1] The characteristic feature of RA is persistent inflammatory synovitis in peripheral joints, which usually distributes symmetrically. The synovial inflammation may lead to cartilage damage, bone erosions and changes in joint integrity. Finally, all these pathologies may cause various degrees of disability.[2,3] RA has deleterious effects on social, economic, psychological and sexual aspects of the patient's life.[3]

Female sexual dysfunction (FSD) is a common health problem affecting 20% to 50% of population and prevalence of this condition correlates with age. It has a profound impact on quality of life (QoL) and interpersonal relationships.[4-7] Several factors such as endocrine, social, anatomical and psychological diseases may cause FSD and some specific causes like pain, fatigue, stiffness, functional impairment, depression, negative body image, reduced libido and drug treatment are also responsible in patients with rheumatic diseases.[8,9]

In this study we aimed to evaluate sexual functions and QoL of female subjects with RA and to compare them with voluntary healthy controls.

MATERIALS AND METHODS

A total of 50 sexually active women with diagnosis of RA for more than one years and 20 age matched voluntary healthy women (controls) were included in the study. All of the subjects in both groups were married and patients were followed and treated at outpatient department of Rheumatology Clinic of Uludağ University. The patients with RA were diagnosed according to the 1987 revised criteria for classification of RA of American College of Rheumatology.[10] The local ethical committee approved the study. An informed consent was obtained from all subjects with RA and control group. Demographic characteristics including age, educational attainment level, and occupational status were assessed in all women. Participants who had coexisting diseases or condition resulting in sexual dysfunction (cardiovascular disease, neurological disease, major psychiatric disease, diabetes, previous pelvic surgery, menopause, hysterectomy, premature ovarian failure etc.) and had no

Table 1. Demographic characteristics of the patients with rheumatoid arthritis and control group.

Variables	Patients with RA (n = 32)	Control Group (n = 20)	*P*
Age*	38.43 ± 6.94	39.30 ± 5.52	.630
Number of pregnancy*	1.93 ± 1.18	1.75 ± 1.25	.603
Education status n (%)			.383
Primary- High school	12 (37.5)	5 (25)	
University	20 (62.5)	15 (75)	
Occupational status n (%)			.276
Employment	29 (90.625)	20 (100)	
Unemployment	3 (9.375)	0 (0)	
Smoking history n (%)			.747
Current	8 (25)	4 (20)	
Never- Ex-smoker	24 (75)	16 (80)	
Alcohol consumption n (%)			1.000
Yes	3 (9.375)	2 (10)	
No	29 (90.625)	18 (90)	
Physical activity n (%)			.754
Daily-Several times in a week	8 (25)	6 (30)	
Once in a week –Rarely- Never	24 (75)	14 (70)	

Data are presented as number/total (%), Fisher's exact test or *Student's *t*-test.
Key: SD, standard deviation; RA, rheumatoid arthritis.

sexual activity within the past month were not included in the study. All women recruited into the study had a stable, heterosexual relationship, and were sexually active. Five patients found to have coexisting disease, 6 patients did not have sexual intercourse in past one month, 4 patients did not want to reply the questions because of embarrassment, 3 of the responders did not reply the questions properly and 18 patients are excluded from study.

Turkish version of FSFI, which has been previously validated in the Turkish language by Turkish Society of Andrology[5,6] was used for evaluation of FSD. FSFI includes 19-item questionnaires, which assesses sexual functioning during the last 4 weeks. The specific subdomains including quality of desire, arousal, lubrication, orgasm, satisfaction and degree of pain is evaluated in FSFI. Each domain scores and overall FSFI scores of the women were compared between two groups. The overall FSFI score was 2-36. Sexual dysfunction were considered in a total score of less than 26.55.[11]

Beck Depression Inventory (BDI), a 21-item self-reported inventory, was previously adapted for the Turkish population.[12,13] Each of 21 questions is scoring between 0 and 3 (absent to severe), and the highest possible total score for the whole test is 63. Psychiatric assessment was performed by the BDI and depression was diagnosed when the BDI score was 17 or greater.

The QoL in both groups was assessed with SF-36 questionnaire, which has been previously validated in Turkish population by Koçyiğit and colleagues. SF-36 questionnaire has been designed to evaluate following these concerns in global health: physical function, physical role, body pain, general health, vitality, social function, emotional role and mental health. The scores of the eight subscales range from 0 to 100. Higher scores indicate less limitations or distress in the different dimensions.[14,15]

The statistical analyses were performed using a computer with Medcalc software version 11.4.3. Data analyses were performed with The Kolmogorov-Smirnov test that was used for documenting the normal distribution. Data were given as mean ± SD and median (minimum- maximum). The Mann-Whitney *U* test and Student's *t* test were used for comparison of scores within the groups. Categorical variables are presented as frequencies and percentages and were compared using Fisher's exact test. Statistical significance was considered at $P \leq .05$.

RESULTS

Table 1 lists demographic characteristics of the patients with RA and control group. There was not any significant difference in age, educational level, occupational status, smoking history, alcohol consumption and physical activity between both groups.

Table 2 shows mean total and domain FSFI and BDI scores between the patients with RA and control group. The do-

Table 2. The mean± SD, median (min-max) total and domain scores of FSFI with BDI scores in study groups.

Variables	RA (n = 32)		Control (n = 20)		*P*
	mean ± SD	median (min-max)	mean ± SD	median (min-max)	
Desire	3.47 ± 0.96	3.60 (1.20-4.80)	5.16 ± 0.74	5.40 (3.60-6.0)	.0001*
Arousal	3.750 ± 1.44	3.75 (0.0-6.0)	5.37 ± 0.80	5.7 (3.30-6.0)	.0001*
Lubrication	3.90 ± 1.34	4.05 (0.0-6.0)	5.40 ± 0.52	5.70 (4.20- 6.0)	.0001*
Orgasm	3.95 ± 1.34	4.0 (0.0-6.0)	5.46 ± 0.51	5.60 (4.0-6.0)	.0001*
Satisfaction	4.41 ± 1.49	4.60 (0.0-6.0)	5.40 ± 0.54	5.60 (4.0-6.0)	.022*
Pain	4.26 ± 1.77	4.80 (0.0-6.0)	5.50 ± 0.56	5.60 (4.0-6.0)	.104
Total	24.49 ± 6.00	25.0 (10.40-36.0)	32.31 ± 3.50	33.90 (24.50-35.0)	.0001*
BDI Score	12.90 ± 8.87	11.50 (0.0-38.0)	7.82 ± 5.20	6.0 (2.0-21.0)	.036**

*Mann–Whitney *U*-test, **Student's *t* test.
Key: SD, standard deviation; (min-max), minimum and maximum values; RA, rheumatoid arthritis; BDI, Beck Depression Inventory; FSFI, Female Sexual Function Index.

Table 3. The mean ± SD, median (min-max) total and domain FSFI scores of patients with RA according to they have morning stiffness more than one hour or not.

Variables	Patients without morning stiffness (n = 23)		Patients with morning stiffness (n = 9)		*P*
	mean ± SD	median (min-max)	mean ± SD	median (min-max)	
Desire	3.52 ± 0.91	3.60 (1.20-4.80)	3.33 ± 1.12	3.60 (1.20-4.80)	.626
Arousal	3.69 ± 1.51	4.2 (0.00-6.0)	2.93 ± 1.13	3.30 (1.20-4.50)	.182
Lubrication	3.99 ± 1.50	4.2 (0.00-6.0)	3.66 ± 0.80	3.60 (1.80-4.50)	.548
Orgasm	4.23 ± 1.57	4.40 (0.00-6.0)	3.24 ± 1.12	3.60 (1.20-4.40)	.097
Satisfaction	4.73 ± 1.50	4.80 (0.00-6.0)	3.60 ± 1.18	4.0 (1.20-4.80)	.05*
Pain	4.36 ± 1.90	5.20 (0.00-6.0)	4.00 ± 1.45	4.0 (2.0-6.0)	.609
Total	25.94 ± 5.69	26.40 (11.90-36.0)	20.77 ± 5.37	22.20 (10.40-26.40)	.026*

*Student's *t* test.
Key: SD, standard deviation; (min-max), minimum and maximum values; FSFI, Female Sexual Function Index; RA, rheumatoid arthritis.

main scores of FSFI including desire, arousal, lubrication, orgasm, and satisfaction, in patients with RA were significantly lower than control group ($P = .0001$, $P = .0001$, $P = .0001$, $P = .0001$, $P = .022$ and $P = .0001$, respectively). The domain score of pain were not statistically significant ($P = .104$). The mean BDI scores for the patients with RA were greater than control group ($P < .05$).

FSD was diagnosed in 22 out of 32 (68.75%) patients with RA and 3 out of 20 (15%) ($P = .0001$).

Table 3 shows mean total and domain FSFI scores of patients with RA according to they have morning stiffness more than one hour or not. The domain scores of FSFI including, satisfaction and total domain scores in patients who have morning stiffness more than one hour were significantly lower than the patients who do not have morning stiffness more than one hour ($P = .05$ and $P = .026$, respectively). The domain scores of FSFI including desire, arousal, lubrication, orgasm and pain were not statistically significant in both groups ($P = .626$, $P = .182$, $P = .548$, $P = .097$, and $P = .609$, respectively).

Table 4 shows mean scores of SF-36 questionnaire between patients with RA and control group. The scores of physical function, physical role, body pain, general health, vitality, emotional role were significantly lower in patient group than the control group ($P = .0001$, $P = .0001$, $P = .028$, $P = .002$, $P = .001$ and $P = .0001$, respectively). The scores of social function and mental health were not statistically significant ($P = .4954$ and $P = .1192$, respectively).

DISCUSSION

Assessment of sexual functioning and QoL in the present study revealed that women with RA had lower scores of total FSFI and also lower scores in all of the FSFI subdomains except pain subdomain, when compared with healthy women. Women with RA also had lower scores of QoL parameters except social function and mental health, when compared with healthy women.

The impact of chronic disabling conditions like RA, on QoL of the patients has been investigated in many studies; however sexual functioning in these patients remains a neglected area of QoL.[16] Therefore, we evaluated the link between RA and female sexual functioning by using FSFI, which is a validated and reliable self-report measurement. Recently Frikha and colleagues assessed sexual functioning in 10 women with RA by using FSFI.[17] They reported 7 women with FSD out of 10 and all subscales of FSFI were affected. In our study FSD rate was 68%, 75 out of 32 women with RA and 15% out of 20 women belonging to control group. To our knowledge, this is the first study comparing FSFI scores of patients with RA with healthy controls.

FSFI is essential in evaluating different components sexual activity (like desire, arousal, lubrication, pain, orgasm, satisfaction and total disorders) rather than determination of sexual dysfunction.[5] Therefore, we used cutoff score for

Table 4. The mean ± SD and median (min-max) scores of SF-36 questionnaire between patients with rheumatoid arthritis and control group.

Variables	Patients with RA (n = 32)		Control Group (n = 20)		P
	mean ± SD	median (min-max)	mean ± SD	median (min-max)	
Physical function	54.53 ± 23.08	45.0 (45.0-100.0)	86.75 ± 15.58	92.50 (45.0-100.0)	.0001*
Physical role	32.03 ± 39.26	12.50 (0.0-100.0)	76.25 ± 30.85	87.50 (0.0-100.0)	.0001*
Body pain	54.65 ± 18.28	52.0 (21.0-84.0)	68.80 ± 26.67	73.00 (12.0-100.0)	.028*
General health	44.93 ± 22.95	40.0 (15.0-97.0)	65.85 ± 20.96	74.50 (20.0-97.0)	.002*
Vitality	39.21 ± 21.74	35.0 (0.0-80.0)	64.00 ± 26.08	65.0 (15.0-100.0)	.001*
Social function	71.87 ± 23.54	68.75 (12.50-100.0)	76.25 ± 20.23	87.50 (37.50-100.0)	.4954
Emotional role	31.23 ± 41.42	0.0 (0.0-100.0)	74.95 ± 35.72	100.0 (0.0-100.0)	.0001*
Mental health	54.25 ± 19.27	54.0 (8.0-100.0)	63.60 ± 22.80	62.0 (24.0-96.0)	.1192

*Student's *t* test.
Key: SD, standard deviation; (min-max), minimum and maximum values; RA, rheumatoid arthritis; SF-36, The Short Form 36.

the Turkish population to evaluate FSD.[18] Although the total score and all of the domain scores were lower in patients with RA control group, the domain score of 'pain' were not statistically significant. These results suggest, all domains of FSFI may contribute the FSD in patients with RA. Interestingly pain domain of FSFI is found to be less effective on FSD when compared to healthy age matched controls in our study. The pain domain of FSFI is about the pain during vaginal penetration and it is apart from the pain that patients have routinely. Sexual act may positively affect patients mood and most of them denote ease of their pain after sexual relation.[19]

The percentage of patients with RA who experience sexual problems ranged in previous studies from 31 to 76% and these studies highlighted two main problems: difficulties in sexual performance and diminution of sexual desire and satisfaction.[16,20-26] In a study which Hill and colleagues. investigated effects of RA on sexual activity they found that 56% limitations on sexual intercourse, 50-60% decrease in desire, 73% reduction of frequency of intercourse.[27] In the study of Abdel-Nasser and colleagues, it has been reported that women with RA had impaired sexual function with a prevalence of 60%.[28] In our study similar results observed with previous papers in terms of FSD.

FSD is a common disorder, which has serious effects on women's QoL. Aslan and colleagues evaluated the prevalence of and risk factors for FSD using the Turkish version of FSFI in 1009 Turkish women and found that FSD occurs in 43.4% of women.[29] Similarly, in the study of Cayan and colleagues it has been reported that 46.9% of women in Turkey had FSD, which has been associated with increased age, lower education level, unemployment status, chronic diseases, multiparity and menopause status as important risk factors for FSD.[6]

Another important factor that effect female sexual functioning is depression and other mood disorders.[30] The present study revealed, the rate of depression in women with RA was significantly higher than healthy controls (P = .036). Monga and colleagues assessed the relationship between sexual function and physiological measures in 70 patients with chronic pain and found that sexual problems are common in patients with chronic pain and in those with symptoms of distress and depression.[31]

In our study we also evaluated FSFI in women with RA whether they have morning stiffness for a period more than one hour. The total score and the category of and satisfaction domain of FSFI in women who had morning stiffness more than one hour were significantly lower than the women who had morning stiffness less than one hour (P = .026 and P = .05, respectively). Similarly Gutweniger and colleagues reported that morning stiffness in women with RA plays an important in their feelings of being a handicap.

They declared, women with substantial degree of morning stiffness had significantly more worries about their body image and lived more sexual dissatisfaction than females with lower degrees of morning stiffness.[32] The factors like physical disability, fatigue, altered body image and worries about partner interest are also reported to effect sexuality of the patients.[3,21,26]

SF-36 has been used in several studies including the patients with RA and has been found to be reliable, valid, and responsive. The major advantage of this survey is its ability to compare the physical and mental status of RA patients with the overall population.[33] In a study, Birtane and colleagues assessed the QoL of patients with fibromyalgia, RA and healthy controls by using SF-36. The patients with RA and fibromyalgia syndrome had lower scores of all SF-36 subdomains except social function than the control subjects.[34] Similarly we found scores of physical functioning, physical role, bodily pain, general health, vitality and emotional role significantly lower in patients with RA than healthy controls ($P = .0001$, $P = .0001$, $P = .028$, $P = .002$, $P = .001$ and $P = .0001$, respectively). Although the scores of social functioning and mental health were also lower in patient group the results were not statistically significant ($P = .4954$ and $P = .1192$, respectively). Our findings are relevant for patient communication, as physicians should be advised to address the sensitive subject of sexual dysfunction in women with RA.

There are several limitations of the present study. First of all, the sample size was small and the results may not reflect general population. Secondly, we conducted our study in cross-sectional method, which is less valuable than prospective cohort studies. Thirdly, depression was not clinically diagnosed in patients and defined based on a self-rating questionnaire .Also, we did not investigate whether the FSD was distressful or not for the enrolled women. This would bring more information regarding the relationship between depression and FSD. The last limitation was, lack of evaluation whether the treatment of RA has any effect on FSD.

CONCLUSION

The present study shows that a significant percent of patients with RA had sexual dysfunction and also deterioration in QoL. All domains of FSFI were affected except from the "pain" domain and this may reflect the pathophysiology of FSD in this group of patients. However, more studies in larger population comparing sexual functioning between the patients with RA and healthy controls is necessary to understand this relation.

CONFLICT OF INTEREST

None declared.

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