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BRIEF REPORT

High Prevalence of Sexual Dysfunction in Women with Rheumatic Diseases: A not Recognized Health Domain

Wendy Marisol Orzúa-de la Fuente[1] · Guadalupe Josefina Salazar-Hernández[2] · David Vega-Morales[1,2] · Alejandro Garza-Alpírez[1] · Jorge Antonio Esquivel-Valerio[1]

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Abstract

Objective To measure the sexual satisfaction and the prevalence of dysfunction in women with rheumatic diseases.

Methods A cross-sectional study was conducted, in which the patients were enrolled in two clinical settings; Public Health Insurance and Social Security Service. The presence of sexual dysfunction was assessed with the questionnaire 'Female Sexual Function Index (FSFI)'. The FSFI was self-administered and consisted of 19 questions covering six domains; desire, subjective arousal, lubrication, orgasm and pain. The patients' answers were based on the 4 weeks prior to completing the questionnaire. A total score of ≤ 26 indicated sexual dysfunction.

Results 451 women participated, mean age of 49.27 years (*SD* 13.58). The most frequent diagnoses were: Rheumatoid Arthritis (234, 51.9%), Systemic Lupus Erythematous (58, 12.9%), Osteoarthritis (35, 7.8%) and Fibromyalgia (25, 5.5%). The median FSFI score was 12.3 (IQR 12.8) and sexual dysfunction was found in 94.9% of patients. Median and IQR scores for each domain were as follows: desire 5.4 (2.4), subjective arousal 1.2 (3.3), lubrication 2.1 (3.9), orgasm 0 (3.6), satisfaction 2.4 (1.2) and pain 0 (4.8). There was no difference found between the rheumatic diseases studied and the FSFI score or the percentage of patients with sexual dysfunction. There is a negative correlation (Spearman rho -0.328, $p=0.01$) between age and the final score, a positive correlation between age and (0.449, $p=0.01$) desire, and a negative correlation with the remaining categories: subjective arousal (rho$=-0.351$, $p=0.01$), lubrication (rho$=-0.387$, $p=0.01$), orgasm (rho$=-0.346$, $p=0.01$), and pain (rho$=-0.411$, $p=0.01$).

Conclusion The sexual dysfunction frequency in rheumatic patients is high. It is necessary to investigate and act on this problem to increase the quality of life of our patients.

Keywords Rheumatic diseases · Sexual dysfunction · Mexico · Latin America

✉ David Vega-Morales
drdavidvega@yahoo.com.mx

Extended author information available on the last page of the article

Introduction

Sexual health is fundamental to the physical and emotional health, as well as the well being of the individuals, the couples and the family. The World Health Organization (WHO) defines sexual health as "a state of physical, emotional, mental and social well-being in relation to sexuality; not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences" [1].

Normal sexual performance consists of the sexual activity with transitions through phases from excitement to relaxation without problems, and with a sensation of pleasure, fullness and satisfaction [2].

Female sexual dysfunction (FSD) is a gynecological disorder, described as a disturbance in at least one of the main four domains of the sexual function (subjective arousal, plateau, orgasm and result) as an effect of physiological, psychological, emotional or interpersonal events [3]. The most common effects of FSD include hypoactive sexual desire, low sexual excitement, difficulty reaching orgasm and dyspareunia [4].

There are also risk factors associated to sexual dysfunction: general health status of the individual, diabetes mellitus, cardiovascular disease, concurrent genitourinary disease, psychological/psychiatric disorders, other chronic diseases, and socio-demographic conditions [5].

Several rheumatic diseases can inflict sexual dysfunction, which is related to the nature of the prevailing symptom. Factors that may influence sexual dysfunction include; pain, fatigue, rigidity, functional impairment, depression, anxiety, negative corporal image, hormonal imbalance, and pharmacologic treatment [6].

The main rheumatic diseases in which the presence of sexual dysfunction has been evaluated include: Rheumatoid Arthritis (RA), Primary Sjögren Syndrome (pSS), Systemic Lupus Erythematosus (SLE), Systemic Sclerosis (SSc), and Fibromyalgia (FM) [7].

In Mexico, the sexual dysfunction in healthy women has been found to be 52% [8], but there are no studies of sexual dysfunction in women who suffer rheumatic diseases.

Objective

To measure sexual satisfaction and prevalence of dysfunction in women with rheumatic diseases.

Material and methods

Study design and population

This research was an observational, cross-sectional study. Patients were enrolled from two clinical settings; Public Health Insurance and Social Security Service. The study was carried out between April 1st and June 30th, 2016, in Monterrey, Mexico.

Participants

The study included female patients, 18 years and older, who have been diagnosed with a rheumatic disease according to the American College of Rheumatology (ACR) and/or the European League Against Rheumatism (EULAR) classification criteria agreed for each case. The patients were all being treated at the Rheumatology Service Center at the Universidad Autónoma de Nuevo León (UANL) and the Rheumatology Service Center, Hospital General de Zona No.17, Instituto Mexicano del Seguro Social (IMSS). Patients who did not give permission, or patients who did not complete the questionnaire correctly or completely were excluded from the study.

Measures

Sexual function was measured using the Female Sexual Function Index (FSFI) determined by applying the questionnaire proposed by Rosen et al. [9]. The questionnaire was self-administered and was validated for the Spanish-speaking population [10]. The questionnaire consisted of 19 questions that assessed sexual function over the past four weeks and were asked to rate each answer on a scale of 0–5. The questions were grouped into six domains: desire, subjective arousal, lubrication, orgasm and pain. Adding the scores of the individual items within each domain and multiplying the sum by the domain factor obtained individual domain scores. The full-scale score was obtained by adding the six domain scores. Values < 26 indicated sexual dysfunction.

Statistical analyses

Data was analyzed using SPSS v. 20, and a descriptive analysis of clinical and demographic categorical variables was performed with absolute values and percentages. For continuous and ordinal variables, and central tendency and dispersion, estimates were calculated based on Gaussian distribution.

Chi square tests were performed to compare dichotomous data between the presence of sexual dysfunction and the different rheumatic diagnoses. The Kruskall–Wallis test was performed to compare the FSFI final score for each rheumatic diseases considered in the study. Non-parametric correlations were carried out through Spearman rho to describe the relationship between the FSFI final score, domain scores, and age of the patients. Statistical significance was determined at the $p < 0.05$ levels

Results

Four hundred and seventy six women were invited to participate in the study. Twenty-five patients were excluded due to either incomplete questionnaire (n = 15), uncertain diagnosis (n = 6) or refusal to participate (n = 4). Of the remaining 451, 308 patients (68.3%) belonged to UANL, and 143 (31.7%) to IMSS.

Table 1 Distribution of the population according to the rheumatologic diagnosis

Rheumatologic disease	n (%)
Rheumatoid arthritis	234 (51.9)
Systemic lupus erythematosus	58 (12.9)
Osteoarthritis	35 (7.8)
Fibromyalgia	25 (5.5)
Primary Sjögren syndrome	15 (3.3)
Systemic sclerosis	15 (3.3)
Psoriasic arthritis	13 (2.9)
Undifferentiated arthritis	13 (2.9)
Spondyloarthritis	11 (2.4)
Mixed connective tissue disease	7 (1.6)
Dermatomyositis	5 (1.1)
Vasculitis	5 (1.1)
Overlap syndrome	4 (0.9)
Degenerative arthritis	2 (0.4)
Osteoporosis	2 (0.4)
Behçet disease	1 (0.2)
Antiphospholipid syndrome	1 (0.2)
Polymyositis	1 (0.2)
Anti glomerular basement membrane antibody disease	1 (0.2)
Undifferentiated connective tissue disease	1 (0.2)
Still disease	1 (0.2)
Antisynthetase syndrome	1 (0.2)
Total	451

The mean age was 49.27 years (*SD* 13.58. CI 48.01 − 50.53), 22 diagnoses were identified; the most prevalent diseases were: RA (n = 234, 51.9%), SLE (n = 58, 12.9%), Osteoarthritis (OA) (n = 35, 7.8%), and FM (n = 25, 5.5%) (Table 1).

The FSFI median score was 12.3 (*IQR* 12.8), showing sexual dysfunction in 428 patients (94.9%). The median score for each domain was as follows: desire 5.4 (*IQR* 2.4), subjective arousal 1.2 (*IQR* 3.3), lubrication 2.1 (*IQR* 3.9), orgasm 0 (*IQR* 3.6), satisfaction 2.4 (*IQR* 1.2), and pain 0 (*IQR* 4.8). Table 2 describes the sexual dysfunction prevalence and the median score of each domain according to the rheumatic diagnoses reported.

The data showed no significant difference within the different rheumatic diagnoses and a positive result for sexual dysfunction ($\chi^2 = 9.033$; $p = 0.989$), nor the IFSF final score ($\chi^2 = 15.864$; $p = 0.777$). Although it is expected that the score decreases with age, a low total FSFI score was found in all age groups (Table 3). A negative correlation was found (rho = −0.328; $p = 0.01$) between age and the FSFI total score. For each individual domain, there was a positive correlation (rho = 0.449, $p = 0.01$) between age and desire, but a negative correlation between age and subjective arousal (rho = −0.351, $p = 0.01$), lubrication (rho = −0.387, $p = 0.01$), orgasm (rho = −0.346, $p = 0.01$), and pain (rho = −0.411, $p = 0.01$). There was no significant correlation between age and satisfaction.

Table 2 Prevalence of sexyal dysfunction according to the rheumatologic diagnosis

Diagnosis	Sexual dysfunction n (%)	IFSF final score Me (IQR)	Desire Me (IQR)	Excitement Me (IQR)	Lubrication Me (IQR)	Orgasm Me (IQR)	Satisfaction Me (IQR)	Pain Me (IQR)
Rheumatoid arthritis	222 (94.9)	9.95 (13.2)	5.4 (1.8)	0 (3.3)	0 (3.9)	0 (3.6)	2.4 (1.2)	0 (4.5)
SLE	52 (89.7)	19.75 (14.75)	4.2 (2.4)	2.4 (3.68)	3.6 (3.9)	2.8 (3.6)	2.4 (1.3)	4 (6)
Osteoarthritis	32 (91.4)	8.4 (12.2)	6 (1.2)	0 (2.4)	0 (3.3)	0 (3.2)	2.4 (0)	0 (4)
Fibromyalgia	24 (96)	16.9 (11.95)	5.4 (2.4)	1.8 (3.3)	3.6 (3.9)	2.8 (3.6)	2.4 (1.4)	3.6 (4.4)
pSS	15 (100)	9.2 (12.8)	5.4 (2.4)	0 (3)	0 (4.2)	0 (2.8)	1.6 (1.2)	0 (5.2)
Systemic sclerosis	15 (100)	10 (12.7)	4.8 (2.4)	1.5 (2.7)	0 (3.9)	0 (3.2)	1.6 (1.2)	0 (4.4)
Psoriasic arthritis	12 (92.3)	8.4 (14.35)	6 (0.9)	0 (3.45)	0 (4.05)	0 (3.2)	2.4 (1.6)	0 (3.4)
Undifferentiated arthritis	13 (100)	8.8 (11.6)	6 (2.4)	0 (2.4)	0 (4.05)	0 (3.2)	2.4 (0.8)	0 (4.6)
Spondyloarthritis	11 (100)	17.5 (11.9)	4.2 (2.4)	2.1 (3.4)	3.6 (4.2)	2.8 (3.2)	1.2 (1.2)	4 (6)
MCTD	7 (100)	10 (14.8)	4.8 (1.2)	0 (3.3)	0 (4.2)	0 (3.6)	2.4 (2.4)	0 (5.2)
Dermatomyositis	5 (100)	10 (18.4)	4.8 (2.4)	0 (4.05)	0 (4.35)	0 (3.4)	2 (1.8)	0 (5.6)
Vasculitis	5 (100)	19.9 (12.75)	4.8 (2.1)	3.3 (3.6)	2.7 (4.2)	3.2 (3.6)	2 (0.8)	2.4 (5)
Overlap syndrome	4 (100)	20.25 (4.02)	3.3 (2.7)	3.45 (2.18)	3.6 (0.45)	3.4 (0.4)	2.2 (0.4)	5 (3.4)
Degenerative arthritis*	2 (100)	16.95 (9.82)	5.4 (0.84)	2.1 (2.96)	1.65 (2.33)	1.6 (2.26)	3.2 (1.13)	3 (4.24)
Osteoporosis*	2 (100)	15.25 (9.68)	4.92 (1.07)	2.25 (3.18)	2.1 (2.96)	2 (2.82)	1.8 (0.84)	1.4 (1.97)
Behçet disease‡	1 (100)	23.9	4.8	4.2	3.3	3.2	2.4	6
Antiphospholipid syndrome‡	1 (100)	20.5	4.2	2.4	3.9	3.2	2	4.8
Polymyositis‡	1 (100)	23.2	3.6	3.3	3.9	4	2.4	6
Anti-GBM‡	1 (100)	9.6	6	0	0	0	3.6	0
UCTD‡	1 (100)	8.4	6	0	0	0	2.4	0

Table 2 (continued)

Diagnosis	Sexual dysfunction n (%)	IFSF final score Me (IQR)	Desire Me (IQR)	Excitement Me (IQR)	Lubrication Me (IQR)	Orgasm Me (IQR)	Satisfaction Me (IQR)	Pain Me (IQR)
Still Disease[ǂ]	1 (100)	17.9	2.4	1.5	3.6	3.2	1.2	6
Antisynthetase Syndrome[ǂ]	1 (100)	18.7	4.2	2.1	3.6	3.2	1.2	4.4

Me median, *IQR* interquartile range, *SLE* systemic lupus erythematosus, *pSS* primary Sjögren syndrome, *MCTD* mixed connective tissue disease, *Anti-GBM* anty glomerular basement membrane antobody disease, *UCTD* undifferentiated connective tissue disease

*Two cases were reported. It shows the mean score and the standard deviation

[ǂ]Only one case was reported

Table 3 Changes of sexual dysfunction through aging

Age	IFSF final score Me (IQR)	Desire Me (IQR)	Excitement Me (IQR)	Lubrication Me (IQR)	Orgasm Me (IQR)	Satisfaction Me (IQR)	Pain Me (IQR)
≤ 24	20.1 (13.8)	4.2 (2.4)	2.4 (3.75)	3.6 (3.9)	2.8 (3.6)	2.4 (2.0)	3.6 (6.0)
25–34	19.2 (10.55)	3.6 (1.8)	2.4 (2.4)	3.6 (2.85)	2.8 (3.6)	2.0 (1.2)	4.8 (6.0)
35–44	18.9 (12.3)	4.2 (1.2)	2.4 (2.4)	3.6 (4.2)	2.8 (3.6)	2.0 (1.2)	4.4 (6.0)
45–54	18.8 (13.8)	4.8 (2.4)	2.1 (3.6)	3.3 (3.9)	2.8 (3.6)	2.4 (1.2)	2.0 (4.8)
55–64	8.4 (11.5)	6.0 (1.2)	0 (2.5)	0 (3.6)	0 (3.2)	2.4 (0.8)	0 (3.4)
≥ 65	8.4 (0)	6.0 (0)	0 (0)	0 (0)	0 (0)	2.4 (0)	0 (0)

Me median, *IQR* interquartile range

Discussion

The results demonstrated that there is high sexual dysfunction prevalence in women with rheumatic diseases compared with healthy women. (94.9% vs. 52%) [7]. However, the type of pathology does not appear to have an effect, as the data shows no significant difference between the different diagnoses and the presence of sexual dysfunction.

We also found that the sexual dysfunction prevalence is higher than the one reported in different rheumatic diseases. The most frequent diseases in our study were RA (n = 234, 51.9%), SLE (n = 58, 12.9%), OA (n = 35, 7.8%), and FM (n = 25, 5.5%).

Of the woman with RA, 94.9% had sexual dysfunction, with a median score of 9.95 m (*IQR* 13.2), which is a higher occurrence compared to that found in the literature. Abder-Nasser et al. showed that in a study of 52 women with RA, 60% showed a decrease in sexual desire, satisfaction and sexual performance [11]. Coskun et al. showed a slightly higher prevalence (68.75%, median score 24.29) of sexual dysfunction from a group of 32 women with RA; it was significative after comparing with a control group [12].

In this study, 58 patients with SLE were included, and sexual dysfunction was found in 89.7%, with FSFI median score of 19.75 (*IQR* 14.75), which is higher than previously reported in other studies. Tsegn et al. reported 52.2% of patients had sexual dysfunction with an FSFI score <26.55 [13], and Shen et al. showed that 64.1% of participants had sexual dysfunction, which was significantly higher than the control group (31.6%) [14].

In the FM patients, the results showed sexual dysfunction in 96% of the women, with an IFSF median score of 16.9 (*IQR* 11.95), which is comparable to the results of the Oreana et al. study, where 97% of women with FM had sexual dysfunction. They also showed that the percentage increased to 84% in patients with RA, although there was no significant different between the groups [15]. Similarly, Rico-Villademoros et al. conducted a study with 276 women with FM, and showed a sexual dysfunction prevalence of 86.9%, higher than the control group (23.6%) [16].

Of the total patients, 15 women suffered from pSS, and all of them reported sexual dysfunction, with a FSFI median score of 9.2 (*IQR* 12.8). Van Nimewen et al. [18] found a sexual dysfunction prevalence of 56% in 46 women with pSS, with a FSFI median score of 20.6 [17]. Priori et al. [18] and Isik et al. [19] had more similar results, showing 83.3% (FSFI median score 19.1) and 80.4% (FSFI median score 17.12) of pSS patients who also had sexual dysfunction. Lastly, the OA patients from this study showed 91.4% of these women had sexual dysfunction, with a FSFI median score of 8.4 (*IQR* 12.2); however, at the time there were no other studies discussing woman with OA and sexual dysfunction to compare results with.

A key finding from the study was the positive correlation (rho = 0.449, $p = 0.01$) between age and the domain desire. Even though the results for the other domains would have created a less satisfactory sexual experience for the patients, their desire was not affected. This finding indicates the need for further study in this population, as sexual activity is still an important factor in patient lives even if they are suffering from a rheumatic disease. In order to determine the modifiable disease factors related with sexual dysfunction. It would be interesting to explore if the disease burden or latency influences in the desire. Patients with a chronic rheumatologic disease may experience sexual dysfunction in the first stages of the diagnosis, when there is a high proportion of uncontrolled activity. After this period would be a normalized activity period where the sexual desire is greater.

In today's treatment of patients with rheumatic diseases, the topic of sexual discomfort is not commonly touched upon. According to a survey, only 12% of patients discuss sexual

dysfunction with their rheumatologists. Reasoning for this low percentage was found to be; restrictions, discomfort of the patient to discuss the topic, uncertainty of whether the topic is appropriate to discuss as a rheumatologist [20]. Whatever the reason may be for each practitioner, the end result is that this topic is not being approached as much as it should while treating rheumatic diseases.

In regards to limitations of the study, this research only assessed the sexual function without considering the different factors that influence it, such as the comorbidities presence, the drugs used and the patients' adherence to treatment; as well as socio-demographic variables such as marital status, education and socioeconomic status.

Conclusion

The frequency of sexual dysfunction in patients with rheumatic diseases is high compared to the general healthy public. Sexual functioning is an important aspect in the life of patients with rheumatic diseases, however its assessment in the routinely clinical practice is underutilized. It is important that rheumatologists begin to put an emphasis on this topic and to start offer treatment options to improve the quality of sexual life in their patients.

Compliance with Ethical Standards

Conflict of interest Wendy Marisol Orzúa-de la Fuente, Guadalupe Josefina Salazar-Hernández, David Vega-Morales, Alejandro Garza-Alpírez and Jorge Antonio Esquivel-Valerio have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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Affiliations

Wendy Marisol Orzúa-de la Fuente[1] · Guadalupe Josefina Salazar-Hernández[2] · David Vega-Morales[1,2] · Alejandro Garza-Alpírez[1] · Jorge Antonio Esquivel-Valerio[1]

Wendy Marisol Orzúa-de la Fuente
wendyra92@gmail.com

Guadalupe Josefina Salazar-Hernández
josefinasalazar85@gmail.com

Alejandro Garza-Alpírez
dralpirez1986@hotmail.com

Jorge Antonio Esquivel-Valerio
jorge.esquvelvl@uanl.edu.mx

[1] Universidad Autónoma de Nuevo León, Servicio de Reumatología, Departamento de Medicina Interna, Facultad de Medicina y Hospital Universitario "Dr. José Eleuterio González", Avenida Francisco I. Madero, Mitras Centro, Monterrey, Nuevo León, Mexico

[2] Instituto Mexicano del Seguro Social, Delegación Nuevo León, Hospital General de Zona No. 17, Fortunato Lozano 2627, Benito Juárez, Monterrey, Nuevo León, Mexico