

## Physical, Psychological, and Sexual Implications of Living with Rheumatoid Arthritis among Women in Reproductive Age

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### Abstract

**Background:** Rheumatic arthritis (RA) affect all aspects of patients' life, lead to various degrees of disability, and ultimately has a profound impact on the social, economic, psychological, and sexual aspects of the patient's life. **Aim of the study:** Identify physical, psychological, and sexual implications of rheumatoid arthritis among women in reproductive age. In addition to investigating the correlations between physical functional disability, psychological problems, and sexual dysfunction. **Settings:** The study was conducted at Rheumatology Clinic at the Main University Hospital of Alexandria. **Subjects:** Purposive sample was chosen from women patients with rheumatoid arthritis to be subjects of this study (n=250). **Tools:** Four tools were used to collect data. **Tool I:** Socio-demographic questionnaire. **Tool II:** Stanford Health Assessment Questionnaire Disability Index (HAQ-DI). **Tool III:** Depression Anxiety Stress Scale (DASS). **Tool IV:** The Sexual Dysfunction Questionnaire (SDQ) **Results:** The majority of the studied women suffer from severe physical disability, extreme level of depression, anxiety and about half of them had an extreme level of stress. Also, the majority of the studied women had a severe level of sexual dysfunction. Also, statistically significant correlations between women's physical disability index, psychological problems, and sexual dysfunction were detected. **Conclusion:** The findings from this study confirm that women patients with RA suffer from multiple negative implications on the physical, psychological and sexual functions. **Recommendations:** Provide ongoing support to the patients from the time of diagnosis throughout their care and management. To help them to manage their pain and disabilities, improve their sexual function, promote their mental health, and optimize psychosocial functioning.

**Keywords:** Physical, Psychological, Sexual Implications, Rheumatoid Arthritis.

### Introduction:

Rheumatoid arthritis (RA) is a chronic systemic autoimmune disease that mainly affects synovial joints causing inflammation (synovitis), joint erosion, and cartilage damage. This results in reduced functional status and disability in many patients. (Zielinski et al., 2019) It is the most common chronic inflammatory rheumatism affecting 1% of the adult

population (Lwin et al., 2020). The typical age of onset is between 40 and 60 years and the incidence is 3 to 4 times higher in women than in men. (Ziarko et al., 2014)

Patients with RA face the necessity of managing many physical hardships and problems caused by the disorder, the most important including fatigue, early morning stiffness, limited mobility, and

experiencing pain. A basic problem that RA patients must cope with pain. As the disorder advances, pain levels usually increase. The unpredictability of pain is one trait disrupting well-being; patients cannot predict the end of an ongoing episode of pain nor the onset of another one. Pain probably disrupts the patients' everyday life to the highest degree and affecting their quality of life. (Gruszczynska & Knoll 2015, Intriago et al., 2019) Moreover, the physical handicaps that develop in the course of the disease lead to dissatisfaction in the family life and work status of patients, who become socially isolated due to insufficiency to fulfill their aspirations. (Cunha et al., 2016)

Besides these, the patients must also deal with psychological hardships, primarily marked by negative affect, anxiety, depression, and feelings of loss (Ziarko et al., 2014). Patients affected by RA experience anxiety and depressive symptoms to a greater degree than the general population. It is estimated that between 14% and 62% of those affected with RA also suffer from depression (Mojs et al., 2011, Matcham et al., 2018). On the other hand, the idea of continuous drug use can augment anxiety complaints (Treharne et al., 2015). It has been argued that anxiety, which is temporarily present in the early stage of the disease, is replaced by depression over time and can be a precursor of later depression (Euesden et al., 2017).

The psychological approach that explains the occurrence of psychological problems assumes that increasing physical impairment resulting from gradual deterioration of joint function causes feelings of helplessness, powerlessness, and worthlessness, which contribute to the emergence and persistence of depressive symptoms. On the other hand, research on the consequences of anxiety and

depression in RA patients indicates that individuals exhibiting complex stress, anxiety, and depressive symptoms are more susceptible to repeated recurrence of intense pain (Cunha et al., 2016). Experiencing depressive symptoms further hinders coping and living with illness, which manifests as frequent hospitalizations and medical appointments (Euesden et al., 2017).

In this respect, the results obtained from (Kwiatkowska et al., 2018) confirm the need for screening for the occurrence of psychological symptoms in RA patients, which may lead to early diagnosis and treatment not only of RA and joint inflammation but also direct actions on the different psychological problems. This prevents the development of a full-blown disease like depression. Furthermore, detecting and treating emotional and social problems early in the course of the disease would probably facilitate adaptation and decrease negative psychosocial consequences. (Hägerström & Wändell 2012)

Again, rheumatic diseases may affect all aspects of patients' life, lead to various degrees of disability, and ultimately has a profound impact on the social, economic, psychological, and sexual aspects of the patient's life. Sexuality is a complex aspect of the human being's life and is more than just a sexual act. Compared to the general population, sexual health, which includes sexual function, sexual activity, and sexual relationships, is often significantly affected in patients with RA (Khnaba et al., 2016, Saadat et al., 2015, Hari et al., 2015, Kobelt et al., 2012)

The sexual problems in RA could be attributed to physical and psychological variables. Physical variables include difficulties in performing sexual intercourse (sexual

disability) due to pain intensity, disease activity, physical capacity and disability, joint stiffness, and fatigue. While psychological variables include depression, altered body image, worries about partner interest, and diminished sexual drive reflected in both diminished desire and satisfaction. (Josefsson & Gard 2012, Yilmaz et al., 2012). Additionally, the treatment with medication such as psychoactive substances can cause sexual dysfunction (Clayton & Harsh 2016). In this respect, a study was conducted by Dorner et al., (2018) on sexual health in patients with rheumatoid arthritis found that problems with sexual health are highly prevalent in patients with RA. Most frequently mentioned are sexual problems due to joint stiffness, fatigue, and pain. Furthermore, Alia et al., (2019) found that 59% of patients reported a decrease in the frequency of sexual intercourse after the diagnosis of RA.

Conclusively, patients with RA suffer from many physical, psychological, and sexual problems that need to be addressed and studied, so, the current study intended to focus attention on these problems to shed the light on their occurrence and severity and to help patients better coping with it and improve their quality of life.

#### **The present study aims to:**

- Identify physical, psychological, and sexual implications of rheumatoid arthritis among women in reproductive age.

- Investigate the correlations between physical functional disability, psychological problems and sexual dysfunction.

#### **Subjects and method**

##### **Research questions:**

- What are the physical, psychological, and sexual implications of rheumatoid arthritis among women in reproductive age?

- Are there any correlations between physical functional disability, psychological problems and sexual dysfunction?

##### **Research design:**

-Descriptive correlational research design was utilized in this study. This type of designs used to provide a picture of a situation, person or event and show how things are related to each other (Boru, 2018). So it is used in the current study to describe physical, psychological, and sexual implications of rheumatoid arthritis and identify correlations between all of them.

##### **Setting:**

The present study was conducted at outpatient clinics of the Main University Hospital of Alexandria mainly Rheumatology Clinic. This hospital is one of Alexandria University Hospitals and the outpatient clinics provide free treatment services for all patients suffering from different specialties. The Rheumatology clinic works only one day a week and provides free services also for all patients suffering from rheumatoid arthritis.

##### **Subjects:**

Purposive sample was chosen from women with rheumatoid arthritis to be subjects of this study. The sample size was determined based on the total population of 681, expected frequency of 50 %, confidence level 95 %, and margin of error of 5 %. So, the minimal sample size was 246 thus the researchers decide a number of 250 patients to be the final sample size.

**Inclusion criteria:**

The researchers chosen to focus on the female gender only because the disease is more prevalent in the female than male (Ziarko et al., 2014) and to eliminate the effect of sex variable.

-Women in the reproductive age from 20-50 years

- Married and live with her husband

- Free from medical, psychiatric disease, or major life stressors in the last 3 months

- Absence of diseases of the genital system such as irregular uterine bleeding which may negatively affect her sexual function.

- Willing to participate in the study

**Tools:** Four tools were used to collect the data of this study:

**Tool (I) Socio-demographic questionnaire:** it was developed by researchers to elicit information about patients' age, level of education, occupation, residence, family income, and duration of illness.

**Tool (II) Stanford Health Assessment Questionnaire Disability Index (HAQ-DI).**

Health Assessment Questionnaire HAQ" is a "short" or "2-page" HAQ. The 2-page contains the HAQ Disability Index (HAQ-DI) and the HAQ visual analog (VAS) pain scale. The scale was originally developed by Fries & Bruce (2005). The first part of the scale is designed to assess women's level of functional ability and includes questions of fine movements of the upper extremity,

locomotor activities of the lower extremity, and activities that involve both upper and lower extremities. There are 20 questions in eight categories of functioning which represent a comprehensive set of functional activities – dressing, rising, eating, walking, hygiene, reach, grip, and usual activities. The stem of each item asks over the past week "Are you able to " perform a particular task. For each item, there is a four-level difficulty scale that is scored from 0 to 3, representing (without difficulty) = (0), some difficulty = (1), much difficulty = (2), and unable to do = (3). The highest score on any questions within a component is the score for that component. The index is calculated by adding the scores and dividing by the total number of components answered. A higher score means a higher level of disability. For the scales with three items such as eating, the scoring is designed as follows 0-2 considered no/mild disability, 3-5 moderate disability, and 6-9 severe disability. As for scales with two items such as dressing the scoring was 0-1 reflect no/mild disability, 2-3 moderate, and from 4-6 severe disability.

The second part of the scale is the Health Assessment Visual Analog Pain Scale (HA VAS). It is intended to assess the presence or absence of arthritis-related pain and its severity. The objective is to obtain information from patients on how their pain has usually been over the past week. The HAQ pain scale consists of a doubly anchored, horizontal VAS, that is scored from 0 (no pain) to 100 (severe pain). A higher score indicates a greater degree of pain.

**Tool (III): Depression Anxiety Stress Scale (DASS).**

The standardized version of DASS developed by Lovibond & Lovibond (1995) was used. The DASS is composed

of 42 items of self-report inventory that yield negative aspects of emotions, namely depression, anxiety, and stress. Each of the three parts of the DASS scale contains 14 items. Participants are asked to use a 4-point severity/frequency scale to rate the extent to which they had experienced each statement over the past week. The rating scale was 0, 1, 2, or 3. (0) means did not apply to me at all, (1) applied to me to some degree or some of the time, (2) applied to me to a considerable degree, or for a good part of the time and (3) applied to me very much, or most of the time. Scores for depression, anxiety, and stress were calculated by summing the scores for the relevant items. Reliability done by Lovibond and Lovibond proved the test is adequately reliable (0.71 for depression, 0.79 for anxiety, and 0.81 for stress). The scale was translated into the Arabic language by Hassan, (2005) and tested for both content validity and reliability. The scale proved to be valid and reliable using a test-retest method. The person correlations were highly significant for stress, anxiety, and depression ( $r = 0.84, 0.81, \text{ and } 0.76$  respectively).

#### Severity rating according to Lovibond & Lovibond (1995)

Level	Depression	Anxiety	Stress
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely severe	28-42	20-42	34-42

#### *Tool (IV) The Sexual Dysfunction Questionnaire (SDQ):*

The scale was developed by **Infrasca, (2011)**. It is a useful instrument for assessing sexual dysfunctions and consisted of 19 questions on a 5-point Likert scale: always, often, sometimes,

rarely, and never. SDQ has excellent psychometric properties and internal consistency with a Cronbach alpha of 0.85. The total score can vary from 19 (minimum) to 95 points (maximum). Items 7, 9, 10, 11, 12, 13, and 18 have the inverted score. The critical value (cut-off) was established at a score of 45 (corresponding to a probability of 0.5 of being in the dysfunctional group), above which the subject has characteristics of sexuality problems.

#### Method:

-Approval of the responsible authorities to collect the necessary data was obtained through an official letter from the Dean of the Faculty of Nursing Damanhour University to the Director of Outpatient Clinics at the Main University Hospital of Alexandria. Then the Director signed the letter and sent a copy to the responsible staff who are working at the rheumatology clinic.

- Tool I was developed by the researchers after reviewing the relevant literature. Tools II & IV were adapted and translated into the Arabic language and tool III was adopted. The tools (II, IV) were validated by juries of five experts in medical-surgical, gynecological, and psychiatric nursing.

-The reliability of tools II, III & IV were tested using test-retest method, the Cronbach's alpha for tools was 0.78, 0.82 & 0.85 respectively.

-A pilot study was carried out on 10% of the subjects (25) women with rheumatoid arthritis to ascertain the clarity and applicability of the tools as well as to estimate the time needed to complete the tools. These patients were excluded from the study subjects.

-The process of data collection occurs as follow: firstly, the researchers contacted medical and nursing staff who are working at the rheumatology outpatient clinic, introduce themselves, explain the purpose of the study and present official letters of data collection to gain their acceptance and permission and to facilitate the process of data collection as well as to make sure of patients' right diagnosis. Afterward, the women patients diagnosed with rheumatoid arthritis were referred to the researchers by the staff members.

-Secondly, the researchers started to meet those women either before or after their examination. Each woman was interviewed individually in a quiet place of the clinic, the researchers introduce themselves to the woman, greet her, explain the purpose of the study and make sure that the woman meets the study criteria. At that point, the researchers start to apply the tools of the study. The time taken to complete the study tools ranged from 40 to 50 minutes for each woman. The data collection consumed 3 months, from the beginning of July 2020 till the end of September 2020.

### **Ethical considerations:**

Informed oral consent was obtained from all women after providing an appropriate explanation of the purpose of the study and the nature of the research. The confidentiality and anonymity of women responses, volunteer participation, and right to refuse to participate in the study were emphasized.

### **Statistical analysis:**

The collected data were coded, tabulated, and analyzed using Statistical Package for Social Sciences (SPSS) version 16. The percentage, mean, standard deviation, Chi-square-test, and

Fisher Exact-test were used to summarize data. The comparison between mean scores was performed using a t-test and ANOVA test.

Significance was adopted at  $p < 0.05$  for interpretation of results of tests of significance, all P-values are two-sided.

### **Results:**

Table (1) shows the socio-demographic characteristics of the studied women. Regarding age, it was observed that 43.2% of subjects' age ranged from 35>40 years old. 59.6% were married at < 20 years and 54% of the studied women had duration of marriage ranged from 5 to less than 10 years. As for the level of education, it was obvious that 37.6% had secondary education. It also shows that 90% of women were housewives. As regards the current residence, it was noticed that 58.8% of women living in urban, and 53.2% in a nuclear family. Also 96.4 of them had not enough income, and 86.4% had a duration of illness less than 5 years.

Table (2) clarifies the distribution of the studied women according to their psychological problem levels and mean scores. It was noticed that 73.6% of the studied women had an extreme level of depression with a mean score  $X \pm SD$  30.98±6.314. As regards anxiety level; 96.4% of them had an extreme level of anxiety with a mean score  $X \pm SD$  32.43±6.047. Concerning to level of stress; the table also shows that 47.2% of the studied women had complained of the extreme level of stress with a mean score  $X \pm SD$  32.03±5.538.

Table (3) illustrates the distribution of the studied women according to their physical disability level. From this table it can be observed that 52.2% of the studied women had a moderate level of disability

in wearing their dressing with a mean score  $X \pm SD$   $3.46 \pm 1.39$ , whereas 58.8% of them had severe level of disability in rising things with mean score  $X \pm SD$   $4.56 \pm 1.35$ . It was also observed that 61.2% of the women had a moderate level of disability in walking with a mean score  $X \pm SD$   $3.81 \pm 1.35$ , and three-quarters of them (75.6%) had a severe disability in reaching the far things with a mean score  $X \pm SD$   $5.27 \pm 1.16$ . As for eating, the table indicates that 81.6% of women cannot eat alone because of severe disability with a mean score  $X \pm SD$   $6.20 \pm 2.10$ , while 67.2% of them had a severe disability in doing hygienic care with a mean score  $X \pm SD$   $5.31 \pm 2.09$ . Moreover, 70% of the studied women suffer from severe disability in grasping things with a mean score  $X \pm SD$   $5.72 \pm 2.18$ . It turns out that most of the women who suffer from rheumatic arthritis complain from a severe level of disability, with 88% of them unable to carry out their daily activities with a mean score of  $X \pm SD$   $7.28 \pm 1.76$ . Finally, the total disability index was 63.6% with a mean score  $X \pm SD$   $41.60 \pm 9.333$ .

Figure (1) portrays the distribution of the studied women according to their pain levels. It was obvious that 89.2% of the studied women complain of the extreme level of pain as a result of the disease, while 1.2% only complaint from moderate level.

Figure (2) represents the distribution of the studied women according to the effect of disability on their life, it was observed that 97.6% of the studied women claimed that the disability caused by rheumatic arthritis affected their life.

Figure (3) shows the distribution of the studied women according to their levels of sexual dysfunction. It was noticed that 79.2% of the studied women had a severe level of sexual dysfunction, whereas 20.8% of them had a moderate level of sexual dysfunction.

Table (4) presents the relationship between the studied women' physical disability index mean scores and their level of stress, depression, anxiety, and sexual dysfunction. It was noted that there was a statistically significant relationship between a mean score of the physical disability index and all variables namely; stress, depression, anxiety, pain, the effect of disability on life, and levels of sexual dysfunction. ( $P = 0.000^*$ ).

Table (5) illustrates the relationship between the studied women' sexual dysfunction mean scores and their levels of stress, depression, anxiety, pain, the effect of disability on life, and levels of physical disability index. It was found that the mean score of the studied women' sexual dysfunctions had a statistically significant relationship with their levels of stress, depression, anxiety, pain, the effect of disability on life as well as disability index. (P values are  $0.010^*$ ,  $0.039^*$ ,  $0.014^*$ ,  $0.000^*$ ,  $0.046^*$ ,  $0.000^*$ ) respectively.

Table (6) clarifies the correlation matrix between pain, effect of illness, stress, depression, anxiety, physical disability level, and sexual dysfunction. It is obvious in this table that there are statistically significant correlations between all variables. ( $P = 0.000^*$ ).

**Table 1: Distribution of the studied women according to their socio demographic characteristics. (N=205)**

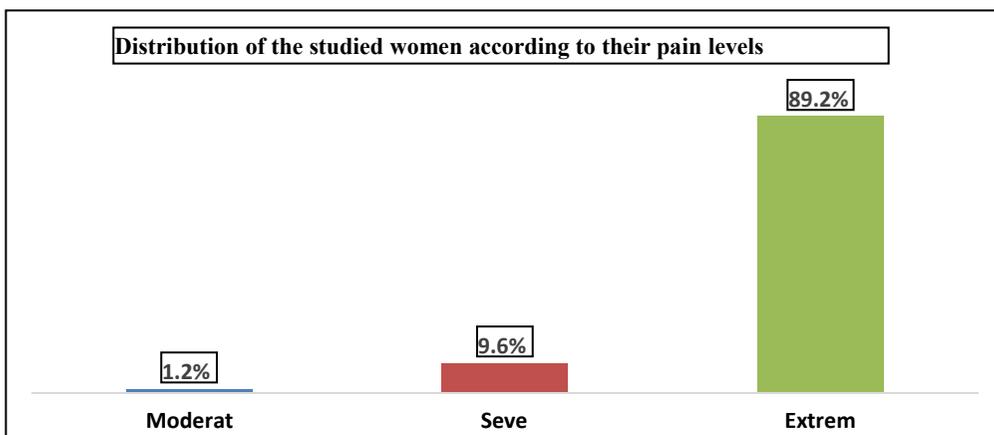
Items	Total N=250	
	No	%
<b>Age (years)</b>		
20 < 25	3	1.22
25 < 30	22	8.8
30 < 35	63	25.2
35 < 40	108	43.2
≥40	54	21.6
Mean ± SD	36.25±3.767	
<b>Age of marriage (years)</b>		
< 20	149	59.6
20 <25	91	36.4
≥25	10	4.0
Mean ± SD	20.61±2.178	
<b>Duration of marriage (years)</b>		
<5	76	30.4
5 <10	135	54.0
≥10	39	15.6
Mean ± SD	6.912±3.116	
<b>Level of education</b>		
Illiterate / Read & write	60	24.0
Basic education	80	32.0
Secondary education	94	37.6
University education	16	6.4
<b>Occupation</b>		
Working	25	10.0
Not working (housewife)	225	90.0
<b>Family residence</b>		
Urban	147	58.8
Rural	103	41.2
<b>Type of family</b>		
Nuclear	133	53.2
Extended	117	46.8
<b>Family income</b>		
Enough	9	3.6
Not enough	241	96.4
<b>Duration of illness (years)</b>		
< 5	216	86.4
5 < 10	27	10.8
10 < 15	4	1.6
≥15	3	1.2
Mean ± SD	3.812±2.344	

**Table 2: Distribution of the studied women according to their psychological problems level and mean scores: (N=250)**

psychological problems	Levels										DASS Mean score X ± SD
	Normal		Mild		Moderate		Sever		Extreme		
	No.	%	No.	%	No.	%	No.	%	No.	%	
- Depression	3	1.2	0	0.0	12	4.8	51	20.4	184	73.6	30.98±6.314
- Anxiety	0	0.0	3	1.2	0	0.0	6	2.4	241	96.4	32.43±6.047
- Stress	3	1.2	3	1.2	27	10.8	99	39.6	118	47.2	32.03±5.538

**Table 3: Distribution of the studied women according to their level of disability index and mean scores: (N=250)**

Items	Level of Disability Index						Mean score X ± SD
	Mild		Moderate		Severe		
	No.	%	No.	%	No.	%	
- Dressing	84	33.6	138	55.2	28	11.2	3.46±1.39
- Rising things	25	10.0	78	31.2	147	58.8	4.56±1.35
- Walking	53	21.2	153	61.2	44	17.6	3.81±1.35
- Reach the far things	15	6.0	46	18.4	189	75.6	5.27±1.16
- Eating	28	11.2	18	7.2	204	81.6	6.20±2.10
- Hygiene	69	27.6	13	5.2	168	67.2	5.31±2.09
- Hand grip	66	26.4	9	3.6	175	70.0	5.72±2.18
- Activities	21	8.4	9	3.6	220	88.0	7.28±1.76
- Total disability Index	9	3.6	82	32.8	159	63.6	41.60±9.333

**Figure (1): Distribution of the studied women according to their pain levels:(N=250)**

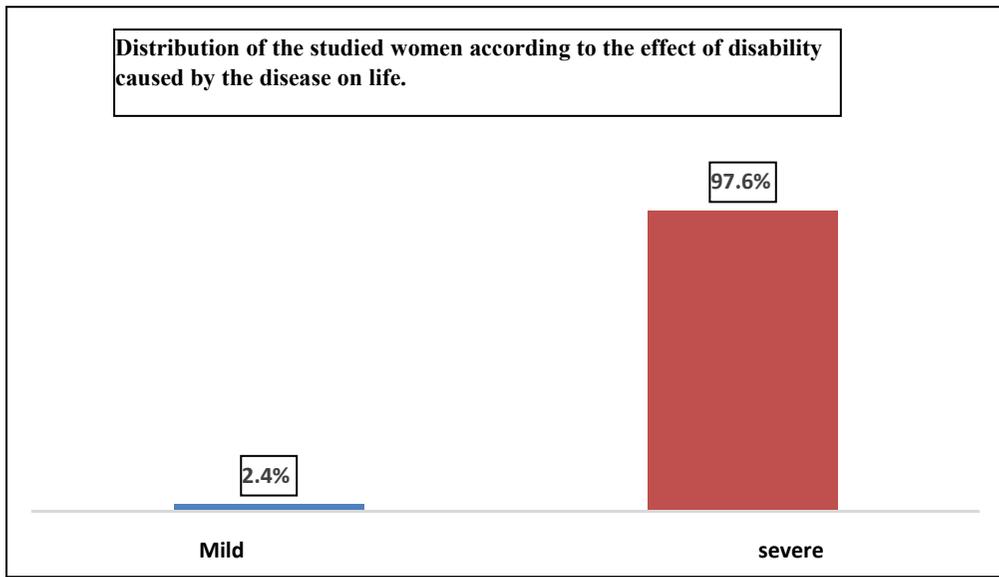


Figure (2): Distribution of the studied women according to the effect of disability on their life: (N=250)

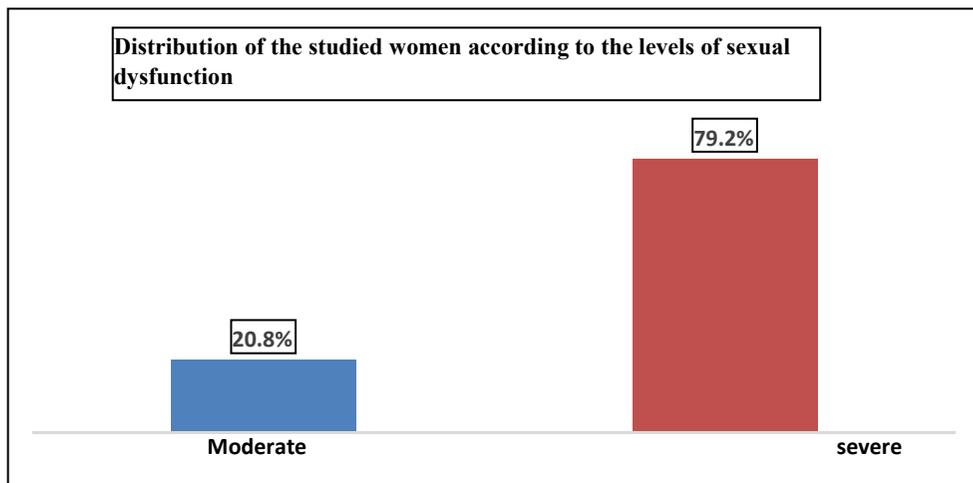


Figure (3): Distribution of the studied women according to the levels of sexual dysfunction: (N=250)

**Table 4: Relation between the studied women' physical disability index mean scores and their DASS, SDQ levels: (N=250)**

Items	Physical disability index mean scores Mean $\pm$ SD	Test of significance
<b>Levels of Stress</b>		
Normal	15.00 $\pm$ 0.000	F=17.903
Mild	31.00 $\pm$ 0.000	P = 0.000*
Moderate	41.00 $\pm$ 10.47	
Sever	40.80 $\pm$ 7.900	
Extreme	43.61 $\pm$ 8.174	
<b>Levels of Depression</b>		
Normal	20.00 $\pm$ 0.000	F=26.686
Moderate	35.50 $\pm$ 7.550	P = 0.000*
Sever	39.06 $\pm$ 10.01	
Extreme	43.30 $\pm$ 7.655	
<b>Levels of Anxiety</b>		
Mild	17.00 $\pm$ 0.000	F=50.531
Sever	23.00 $\pm$ 8.764	P = 0.000*
Extreme	42.52 $\pm$ 7.908	
<b>Levels of Pain</b>		
Moderate	27.00 $\pm$ 0.000	F=11.951
Sever	34.88 $\pm$ 13.53	P = 0.000*
Extreme	42.52 $\pm$ 8.374	
<b>Effect of disability on life</b>		
Moderate	16.00 $\pm$ 12.05	t=56.574
Sever	42.23 $\pm$ 8.348	P = 0.000*
<b>Levels of sexual dysfunction</b>		
Moderate	34.58 $\pm$ 13.66	t=43.526
Sever	43.44 $\pm$ 6.735	P = 0.000*

t = Student t test F= ANOVA test\* Statistically significant at  $p \leq 0$ .

**Table 5: Relation between the studied women' sexual dysfunction mean scores and their DASS, pain and physical disability index levels: (N=250)**

Items	Sexual dysfunction mean scores Mean $\pm$ SD	Test of significance
<b>Levels of Stress</b>		
Normal	65.00 $\pm$ 0.000	F=3.423
Mild	66.00 $\pm$ 0.000	P = 0.010*
Moderate	74.89 $\pm$ 6.198	
Sever	74.55 $\pm$ 5.693	
Extreme	75.32 $\pm$ 7.048	
<b>Levels of Depression</b>		
Normal	64.00 $\pm$ 0.000	F=2.828
Moderate	73.23 $\pm$ 6.062	P = 0.039*
Sever	74.24 $\pm$ 5.854	
Extreme	75.12 $\pm$ 6.643	
<b>Levels of Anxiety</b>		
Mild	65.00 $\pm$ 0.000	F=4.323
Sever	71.50 $\pm$ 6.025	P = 0.014*
Extreme	74.93 $\pm$ 6.457	
<b>Levels of Pain</b>		
Moderate	74.00 $\pm$ 0.000	F=18.096
Sever	67.63 $\pm$ 9.703	P = 0.000*
Extreme	75.51 $\pm$ 5.628	
<b>Effect of disability on life</b>		
Moderate	69.52 $\pm$ 4.930	t=4.022
Sever	74.86 $\pm$ 6.796	P = 0.046*
<b>Levels of disability index</b>		
Mild	66.00 $\pm$ 9.124	F=27.181
Moderate	71.96 $\pm$ 7.198	P = 0.000*
Sever	76.65 $\pm$ 4.891	

t = Student t test F= ANOVA test \* Statistically significant at  $p \leq 0.05$

**Table 6: Correlation matrix between the pain, effect of illness, stress, depression, anxiety, physical disability index and sexual dysfunction: (N=250)**

		Pain	Effect of illness	Stress	Depression	Anxiety	Physical disability index	Sexual dysfunction
<b>Pain</b>	R							
	P							
<b>Effect of illness</b>	R	0.905						
	P	0.000*						
<b>Stress</b>	R	0.317	0.376					
	P	0.000*	0.000*					
<b>Depression</b>	R	0.401	0.450	0.864				
	P	0.000*	0.000*	0.000*				
<b>Anxiety</b>	R	0.349	0.422	0.796	0.875			
	P	0.000*	0.000*	0.000*	0.000*			
<b>Physical disability</b>	R	0.431	0.499	0.367	0.440	0.443		
	P	0.000*	0.000*	0.000*	0.000*	0.000*		
<b>Sexual dysfunction</b>	R	0.364	0.302	0.148	0.120	0.110	0.419	
	P	0.000*	0.000*	0.020*	0.057	0.084	0.000*	

r = Pearson correlation \* Significant p at  $P \leq 0.05$   $r \geq 0.9$  very high correlation  
 $r 0.7-0.9$  high correlation  $r 0.5-0.7$  moderate correlation  $r < 0.5$  low correlation.

### **Discussion:**

Rheumatoid arthritis (RA) is an autoimmune inflammatory disease of unknown etiology, with an unpredictable course and prognosis, affecting patients' ability to perform daily tasks (**Matcham et al., 2014**). Also, it disturbs patients' overall health and well-being, causing multiple physical, psychological, and sexual implications (**Harris, 2016**).

Therefore, a paradigm shift towards integrated approaches is necessary to fully understand the impact of the disease in daily life (**Wan et al., 2016**). Through this study, the researchers aim to achieve and share a deeper awareness and understanding of life with RA; to direct future clinical evaluations and interventions so they are tailored to

the patient's experience, starting from the person's global understanding of the health status as well as other aspects of life such as psychological and sexual functioning.

The findings of the current study showed that about half of the studied women age was ranged from 35-40 years old, married, secondary educated, and most of them had a duration of illness less than 5 years. These results are confirmed by (**Ziarko et al., 2014**) who reported that typical age of onset is between 40 and 60 years and the incidence is 3 to 4 times higher in women than in men. Peaking between ages 30 and 50 years. RA affects almost 3 times as many women have the disease as men (arthritis foundation).

### Physical disability

The study results turn out that most of the studied women suffer from severe disability, which affect their ability to carry out their daily activities as cannot rich the fare things, cannot eat alone as a result of severing disability, unable to do hygiene for themselves and grasping things and handles. This may be related to flexion contractures and hand deformities cause decreased grasp strength and affect the patient's ability to perform self-care tasks. Disability can affect mobility and limit the ability to engage in meaningful or valued life activities and is associated with greater pain, fatigue, and work disability. Moreover, there was a significant correlation between bodily pain and physical dysfunction. This finding is consistent with the study of **Habib et al., (2007)** and in contrast with **Mauri et al., (2015)** who found a much lower prevalence of household work disability.

Most of the studied women complain from extreme pain which is related to multifactor as systemic inflammation and joint damage, all play roles in both the initiation and perpetuation of pain. Pain scores were observed to be significantly associated with the level of disability. On the same line, **Scott et al ., (2018)** revealed that quality of life in RA patients is significantly decreased because of pain, fatigue, and disability, causing mood change in the form of anxiety and depression.

### Psychological implications

The findings of the present study clarify that the majority of the studied women complain of depression, anxiety and about half of them had complained of stress. Depression, according to the World Health Organization Global Burden of

Disease Study, is the most pressing issue in the middle-aged population. **WHO, (2018)**. Pain and disability are among the different factors that contribute to the initiation and perpetuation of depression in different individuals. This is supported by observational studies that described a high prevalence of depression and anxiety in RA. (**Covic et al., 2012**). On the other hand, these findings are inconsistent with the results of **Morris et al., (2011)** who reported that depressive disorders (DDs) are detected in only 17% of RA patients. There are ongoing studies looking at the impact of depression on disease activity in RA and vice versa.

Anxiety and depression are commonly observed among patients with rheumatoid arthritis which may be related to that anxious patient will be worried, tense, and exhibiting signs of avoiding certain behaviors, such as exercise, because of a fear that it may aggravate pain. A patient with symptoms of depression will often display feelings of sadness, helplessness, and loss of feelings of pleasure and interest, sometimes to the extent they interfere with daily functioning. (**Geenen et al., 2012**). Furthermore, many factors including pain, fatigue, and disability can contribute to the development of depression in rheumatoid arthritis (**Wysocka et al., 2016**). In a large-scale study of 22,131 patients with rheumatoid arthritis, pain and fatigue were the best predictors of self-reported depression (**Wolfe and Michaud 2009**). A survey on the emotional effect of arthritis found that, when arthritis pain was at its worst, 68% of respondents felt depressed and 50% felt anxious (**Arthritis Care 2011**).

This result goes in line with **Jamshidi et al., (2016)** study which revealed that depression and anxiety are found to be both consequences and triggers of disease worsening, with a

prevalence of 15% to 40%.

### Sexual dysfunction

Our finding showed that the majority of the respondents of women with RA had severe sexual dysfunction. This result is in line with another study, as Thomas et al., (2018) who reported high prevalent sexual dysfunction in patients with RA and the association between sexual dysfunction with the level of disability and pain intensity.

It has to be taken into account, however, that most of the studied women in the present study were relatively young (<40 years), and problems with sexual health increase with age. Also, the reasons for sexual problems in the present study (joint stiffness, fatigue, pain, body image problems, and arousal/erection problems) and the association of sexual problems with pain intensity and disease activity are similar to findings reported in previous studies (Tristano 2014, Yilmaz et al., 2012 & Palamar et al., 2017).

In women, general loss in muscle strength that occurs with rheumatoid also includes loss of muscle strength of the pelvic floor and thus can explain problems with sexual health. Other possible confounders include joint stiffness and fatigue, which were most often reported as causes for problems with sexual intercourse in the present study. Regarding females, El Miedany et al., (2012) found that problems with orgasm, lubrication, and sexual satisfaction were the most prevalent problems in women with RA.

From a psychological point of view, the presence of depressive symptoms with RA and increased disease severity increases the degree of sexual dysfunction. Moreover, social isolation and loss of self-esteem, and loss of intimate relationships

in RA preclude male and female patients from living a fulfilled life.

The present study finding showed that the effect of the disease was not limited to the mental & psychological wellbeing of women only, but also on their sexual practice as wives. This means there was a statistically significant correlation between women's disability index, psychological, and sexual well-being. This may be due to physical changes to the joints such as swelling, and deformity which are heightened in people with rheumatoid arthritis (Jorge et al., 2010). The presence of joint pain and stiffness, fatigue, and concerns about body image may all harm sexuality. Female patients with rheumatoid arthritis report that their reduced range of movement and muscle strength makes it difficult to find a comfortable position during sexual intercourse (Josefsson & Gard 2010). Other factors that can hurt sexuality include self-esteem, physical function, the degree of early morning stiffness, and low mood (Josefsson & Gard 2010). Approximately 30% of patients report that arthritis makes them feel less attractive. These feelings are associated with high levels of depression and might lead to patients using avoiding and concealing behaviors to reduce noticeability. These findings are also consistent with that of (Walsh & McWilliams 2014), who emphasized that there is a significant correlation between pain severity and physical disabilities with psychological wellbeing in patients with rheumatoid arthritis.

### Conclusion:

The findings from the present study confirm that, there are several negative implications on the physical, psychological and sexual functions of women patients with RA. In addition to, there are statistically significant

correlations between studied subjects' physical disability, psychological problems, and sexual dysfunction.

### **Recommendations:**

Based on the findings of the present study, the following recommendations are suggested:

- Develop self-care programs (adherence, exercise routines, etc.) that may enhance physical, psychological, and sexual well-being and emphasize the role of family support for patients to decrease the feeling of loneliness among them.

- Address sexual health and actively ascertain sexual function in RA women and andrological consultation is recommended for proper management of the condition to improve an important aspect of patients' lives.

- Provide ongoing support to patients from the time of diagnosis throughout their care and management. To help patients to manage their pain and disabilities, improve their sexual function, promote their mental health, and optimize psychosocial functioning.

- Early detection of psychological problems as anxiety and depression and make the appropriate referral to provide psychological counseling, as well as improve patients' response to treatment.

- Promote open and positive communication between patients with early RA and healthcare providers to facilitate acceptance of the illness's process and enhance patients' coping with this long-term illness.

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