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Prevalence of Depression in Patients with Rheumatoid Arthritis attending Rheumatology clinic of Benghazi Medical Center

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Original Research Article

Abstract

Introduction: Depression is a common co-morbidity in Rheumatoid Arthritis (RA) patients, potentially affecting the severity of the disease.

Aim: The study aims to assess the prevalence of depression in Libyan patients with RA and to evaluate their depressive symptoms and depression scores.

Methods: This is a cross-sectional study conducted at the Rheumatology Clinic of Benghazi Medical Center. It includes RA patients attending the clinic over six months, using the Patient Health Questionnaire (PHQ-9) to assess depressive symptoms.

Results: The study analyzed 157 patients, aged 17 to 71 (mean age 42.9 years), predominantly female (female to male ratio of 12.1:1). Most patients had secondary or university education 74 patients (47.1%). Over half had no co-morbidities, and 87.3% were receiving RA treatment. A family history of RA was noted in 32.5% of patients. Depression scores revealed: Minimal depression in 12.7% (no treatment needed), Mild depression in 20.4% (treatment based on clinical judgment), Moderate depression in 29.3% (treatment based on clinical judgment). Moderately severe depression in 19.7% (treatment with antidepressants or therapy). Severe depression in 17.8% (treatment with antidepressants with or without therapy). The mean depression score was 12.3, with no significant associations found with age, sex, residence, disease duration, family history, or Body Mass Index (BMI).

Conclusion: In conclusion, RA patients exhibit a high prevalence of depression, which significantly impacts their quality of life and disease outcomes. The presence of co-morbidities further complicates management. Addressing the mental health of RA patients should be an integral part of their overall care plan.

Keywords: Prevalence of Depression, Rheumatoid Arthritis, Cross-sectional Study, Patient Health Questionnaire (PHQ-9).

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Introduction:

Rheumatoid arthritis (RA) is an autoimmune disease causing bilateral joint inflammation, leading to cartilage destruction and bone erosion. It affects about 5 in 1000 people, primarily impacting women and older adults (1). Symptoms include joint pain, stiffness, and swelling, alongside extra-articular manifestations like nodules and pulmonary disease (2). Although treatments exist, managing RA is challenging and often requires lifelong therapy, impacting physical and mental well-being, leading to fatigue and sleep issues (3). The burden of RA significantly affects quality of life and workplace productivity, with depression commonly associated with functional disability (4). Diagnosing RA typically involves patient symptoms, family history, imaging, and laboratory tests (5).

Depression is a prevalent comorbidity in RA, affecting 14% to 48% of patients (6), yet it often remains under diagnosed and untreated. The relationship between RA and depression is bidirectional: RA patients frequently experience depression, and those with depression are at higher risk of developing RA (7). Factors contributing to this link include overlapping symptoms, varying definitions of depression, and possible biological mechanisms involving inflammatory mediators (8).

Although commonly misdiagnosed, depression negatively impacts RA outcomes, including disease activity and quality of life (9). The debilitating nature of RA, along with chronic pain and fatigue, can exacerbate depressive symptoms. Biological theories suggest that cytokines may play a role in this connection, as depression often coexists with other autoimmune and chronic inflammatory conditions (10). Evidence indicates that inflammatory cytokines may contribute to depression and could be targeted therapeutically (11). The objective of this study was to measure the prevalence and severity of depression in patients with rheumatoid arthritis attending the rheumatology clinic using the Patient Health Questionnaire (PHQ-9).

Methods:

The cross-sectional, descriptive study include 157 patients, aged 17 to 71 years who were diagnosed with RA as per the American College of Rheumatology (ACR) criteria of 2010 ACR/European League Against Rheumatism (EULAR) criteria, (12) and presenting for follow up visits to rheumatology clinic at Benghazi medical center over a period of 6 months. Electronic records were used to retrieve demographic data (age, sex, smoking status), RA clinical data (disease duration, patient assessment on Visual Analogue Score for pain(VAS), functional stage, drug history). On evaluation, patients were formally questioned regarding the dates of depression symptoms and diagnoses, as well as current and previous antidepressants by giving Self-assessment questioner to all patients. Patient Health Questionnaire (PHQ-9) (13) was used to assess the extent of depressive

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symptoms in RA patients. All data were analyzed using SPSS version 23 for windows. Descriptive statistics will be computed for all relevant data. Association between two variables will be tested using chi-square and t-test. All significance was reported at P<0.05. Data will be presented in tables and figures.

All patients gave consent at each visit regarding medical management and the use of medical data.

Depressive symptoms were assessed using the PHQ-9 tool, which has been validated for use in SA to identify comorbid depression in patients with chronic conditions. (14, 15) Depression was graded according to the PHQ-9 scores as follows: < 5 no depression; 5–10 mild depression; 11–14 moderate depression and >15 severe depression. All participants identified with symptomatic depression were referred to the psychiatric unit for further evaluation.

Results:

The study included 157 patients with rheumatoid arthritis, with age ranging from 17 to 71 years, the mean age of the study participants was 42.9 (±9.1). The vast majority were female, with 92.4% being female and only 7.6% male. The majority of patients were Libyan (93.6%), while the rest were non-Libyan (6.4%). Demographic and clinical characteristics represented in table. 1.

Table 1: Socio-demographic and clinical characteristics of 157 patients with rheumatoid arthritis.

Characteristics	Total number of patients	
	Number	Percentage (%)
Age category (years)		
<=20	1	0.6
21-30	14	9
31-40	55	35
41-50	59	37.6
51-60	23	14.6
>60	5	3.2
Gender:		
Female	145	92.4
Male	12	7.6
BMI categories (kg/m2):		
underweight	2	1.3
Normal	36	22.9
Overweight	74	47.1
Obese	45	28.7

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Marital status:		
Single	89	56.7
Married	50	31.8
Divorced	5	3.2
Widowed	13	8.3
Current smoking: (Male)		
Yes	5	41.7
No	7	58.3
Comorbidities:		
Yes	75	47.8
No	82	52.2

Regarding marital status, about half of the patients were single, comprising 56.7%, while 31.9% were married. Divorced and widowed patients together accounted for approximately 11.5%.

In terms of occupation, housewives constituted 43.9%, followed by teachers (26.1%), employees (15.9%), nurses (4.5%), and businessmen (4.5%). Lawyers and doctors each represented 1.9%, while students accounted for 1.3% and cleaners for 0.6%.

The distribution of patients according to education level showed that the majority had a university education 47.1%, followed by secondary education 35.7%, Additionally, 7.0% had preparatory education, 1.9% had elementary education, and 8.3% were illiterate (Table 2).

Table 2: Distribution of patients according to level of education

Level of education	No.	%
Illiterate	13	8.3
Elementary	3	1.9
preparatory	11	7
Secondary	56	35.7
University	74	47.1
Total	157	100

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The mean duration of rheumatoid arthritis among patients was 3-4 years, with the majority 72.6% having a duration of 1-5 years. The maximum duration reported was 11-15 years for 7 patients (4.5%), while the shortest duration was one year.

Among all patients, 52.2% had no co-morbidities, Diabetic patients accounted for 17.2%, while 8.9% had both diabetes and hypertension. Additionally, 4.5% had systemic lupus erythematosus, and 5.7% had hypertension.

Regarding drug history, about 79 patients (50.3%) were on Methotrexate, followed by Plaquenil, used by 47 patients (36.0%). About 11 patients (7.9%) were on Hydroxychloroquine.

More than one half of patients 67.5% gave negative family history for RA, while 32.5% had a positive family history.

About 23.6% of patients complaining of hand swelling, and 11.8% reports low back pain and neck stiffness.

Out of all patients, 148 (94.3%) tested positive for rheumatoid factor, while 9 (5.7%) tested negative.

The mean body mass index (BMI) of all patients was 29.4 kg/m², with a standard deviation of 8.9 kg/m². Among the patients, 25 (28.7%) were classified as obese (BMI > 30 kg/m²), while (1.3%) were underweight (BMI < 18.5 kg/m²) (Fig 1).

Fig. 1: Distribution of patients according to body mass index

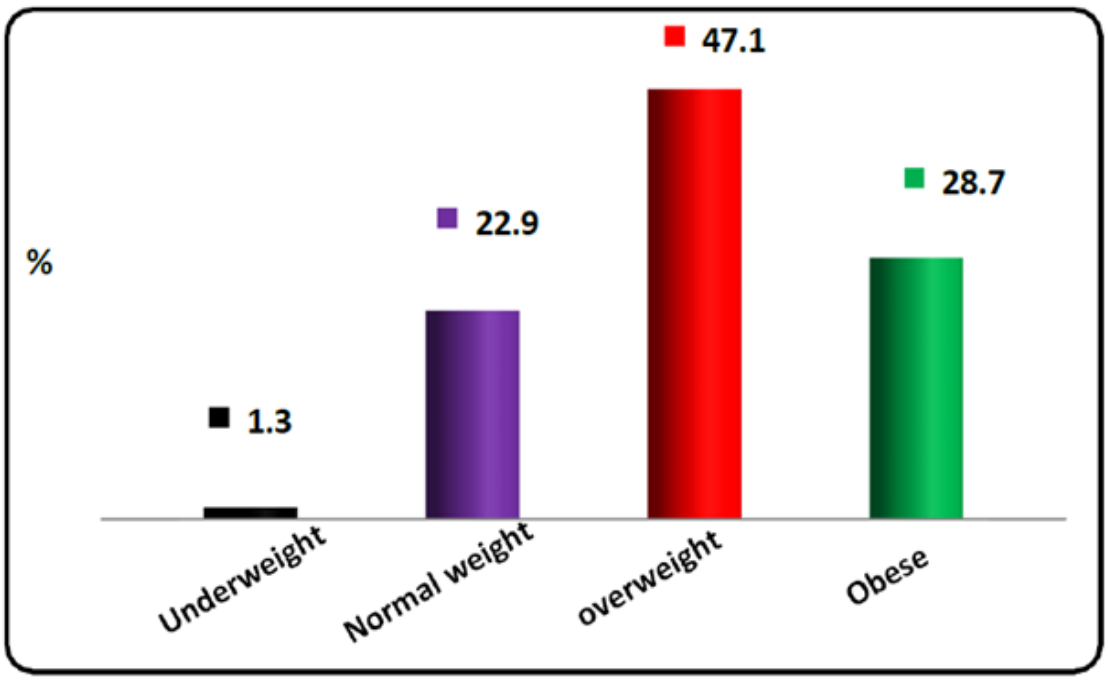

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Table 3 shows that the most frequently reported symptom among all patients was a lack of interest or pleasure in activities, with a mean score of 1.6.

Total depression scores indicated moderate depression (29.3), severe depression in 28 patients (17.8%), moderately severe depression in 31 patients (19.7%), and mild depression in 32 patients (20.4%), with a mean score of 12.3. Clinical judgment done by multidisciplinary team involved in the long-term care of RA patients includes rheumatologist, psychiatrist, and social workers.

Among all patients, severe depression was reported in 15 married individuals (16.9%), 10 single individuals (20%), 3 divorced individuals (60%), and 3 widowed individuals (23.1%). The distribution of patients by education level revealed that the majority of patients with moderate depression were of higher educational level (23 patients, 31.1%).

The distribution of patients according to disease duration revealed that about 28 patients (19.6%) had RA for more than one year. Regarding family history of RA, 27.4% of patients without family history experienced more severe depression. Among all patients, about 17 patients (23%) with depression were overweight.

Table 3: Scores of the indexes used in the study (PHQ-9) Patient

Depression Questionnaire	Mean	Std. Deviation	Minimum	Maximum
1. Little interest or pleasure in doing things	1.6	1.2	0	**3**
2. Felling down, depressed, or hopeless	1.5	1.2	0	**3**
3. Trouble falling or staying asleep, or sleeping too much	1.6	1.2	0	**3**
4. Felling tired or having little energy	2.2	1.1	0	**3**
5. Poor appetite or overeating	1.4	1.1	0	**3**
6. Feeling bad about yourself-or that you are a failure or have let yourself or your family down	1.2	1.1	0	**3**
7. Trouble concentrating on things, such as reading the newspaper or watching television.	1.3	1.2	0	**3**
8. Moving or speaking so slowly that other people could have noticed. Or the opposite –being restless that you have been moving around a lot more than usual	1.2	1.2	0	**3**
9. Thoughts that you would be better off dead, or of hurting yourself	0.5	0.98	0	**3**

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Table 4: Interpretation of depression total score

Total score	Depression Severity	No	%	Action
1 -4	Minimal depression (None)	20	12.7	No need for treatment
5-9	Mild depression	32	20.4	Use clinical judgment about treatment, based on patient's duration of symptoms and functional impairment
10-14	Moderate depression	46	29.3	Use clinical judgment about treatment, based on patient's duration of symptoms and functional impairment
15-19	Moderately severe depression	31	19.7	Treat using antidepressants, psychotherapy or a combination of treatment.
20- 27	Severe depression	28	17.8	Treat using antidepressants with or without psychotherapy
Total		157	100%	

Discussion:

This study found that the prevalence of moderate to severe depression was higher in patients with RA compared to mild-moderate depression. The prevalence of depression was higher in this study compared to other studies. In this study, pain was highly associated with depression, which is supported by findings on the impact of RA on daily life activities and the distress caused by pain, fatigue, and restrictions. The painful disease such as RA makes patients with depression suffer even more as their coping mechanisms become compromised by that depression. Unbearable pain leads them to negative thoughts such as death, which makes them lose their mental well-being. This highlights the importance of controlling pain in these patients. (16, 17, 18)

Patients with RA expressing an uncertain fate regarding the future can lead to the development of depression, anxiety, and helplessness. Taking the disease and medications makes them feel controlled by illness. According to the data, this situation is an important issue, especially in terms of reducing the low quality of life for patients with RA. They feel guilty towards themselves and the people around them because of the burden that they believe they are creating, which is also a significant factor that triggers depression. Unpleasant and unwanted memories related to the disease and treatment control the individual's life negatively. Mediating the nervous side effects of drugs and preventing the exacerbation of psychopathological severity in RA patients should provide a balance between their daily lives and reduce their depression, which should be the priority of healthcare in managing these patients. (19, 20, 21)

The study included 157 patients and revealed high prevalence of depressed mood among patients with RA. This could have

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been the reason for the low quality of life. Patients reported a significant impact of the disease on their quality of life. Moderate depression was present in 29.3% of RA patients, severe depression was found in 17.8% of patients. This is in accordance with a similar study which reported that the prevalence of depression in RA patients ranged from 19% to 62% (22).

It is necessary for the multidisciplinary team involved in the long-term care of RA patients to understand this grave patient experience. Every effort should be made to aim the multidisciplinary management of RA at the control of the psychiatric disorders that are likely to develop in many patients unless their psychological responses are specifically managed. The goal of treatment is not solely a medical one; it should encompass the re-establishment of an appropriate psychological response of adjustment to a chronic and disabling disease without additional unnecessary disability generated by psychiatric illness. (18, 23, 24)

Depressive symptoms should be sought by physicians while assessing RA patients in the clinic. If depression is found, treating the patient for depression will help in overall disease management. Severe functional impairment and the presence of depressive symptoms should be assessed by physicians while evaluating patients with RA. (25, 26, 27)

Few studies have been conducted in our setup to evaluate the prevalence of depression in patients with RA. The results from our study are in line with previous studies conducted in the western world where the prevalence of depression among patients with RA ranged from 18% to 23%. However, the prevalence of depression in patients with other chronic comorbidities like diabetes is less compared to RA. Studies done in Lahore and Karachi found that the prevalence of depression and anxiety among patients with RA was 39% and 41%, respectively, and about 34% had both anxiety and depression. (28, 29)

In a survey among three tertiary care hospitals in Sindh, the prevalence of anxiety and depression among 323 patients with rheumatoid arthritis visiting rheumatology clinics was 40.4% and 39.3%. A local study reported a prevalence of 61.5% of depression among patients with RA in Pakistan. A meta-analysis of emotional problems in RA patients concluded that there is no difference in prevalence and severity of anxiety between RA and controls, that depression prevalence is increased in RA patients, but severity scores show only little evidence of a difference. (30, 31, 32)

Conclusion:

In conclusion, RA patients exhibit a high prevalence of depression, which significantly impacts their quality of life and disease outcomes. The presence of co-morbidities further complicates management. Addressing the mental health of RA patients should be an integral part of their overall care plan.

Recommendation:

The goal of these recommendations is to

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provide a framework for implementing regular screening for symptoms and signs of depression in RA patients by multidisciplinary team involved in the long-term care of RA patients includes rheumatologist, psychiatrist, and social worker.

There is a lack of statistical information in the medical literature of this topic, so we recommend conducting further studies to explore the issue.

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