

The relationship between disease parameters, socioeconomic status and depression/anxiety in Moroccan patients with rheumatoid arthritis- Depression/anxiety in rheumatoid arthritis

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Abstract

Objectives: The current study investigated the prevalence of depression/ anxiety and the relationship among disease parameters, socio-economic and psychological status in patients with rheumatoid arthritis (RA).

Methods: Patients with RA were included in a cross-sectional study. We have collected the demographic characteristics and the characteristics of the RA: duration of evolution, disease activity assessed by disease activity index 28 (DAS28). A detailed physical assessment of patients with rheumatoid arthritis was performed. Also psychiatric assessment was done using short form of Depression, Anxiety and Stress Scale (DASS -21). In addition, patients answered a Health Assessment Questionnaire (HAQ) to assess their functional capacity. We recorded the average total price paid to buy drugs and to achieve blood tests. The productivity losses and Household work disability related to RA were assessed. We also evaluated the impact on quality of life (patients, partners and child) related to RA.

Results: the mean age of 103 patients was 49.7 ± 11.4 years with a female predominance ($n = 90$ (87.4 %)). The median of disease progression duration was 8.16 years (3.25-14.16). The diagnosis of depression was found in 23.3 % of patients and the anxiety in 30.1 % of them. There were significant correlations among social status, disease activity, significant functional impairment and anxiety/depression in RA patients.

Conclusions: there were significant relationships among disease parameters, Social status, and anxiety/depression in RA patients. Therefore, it is necessary to have psychiatric and psychological evaluations and formulate an integrated approach for managing mental health in RA patients.

Introduction

Rheumatoid arthritis (RA) is a multifactorial chronic inflammatory disease affecting primarily the joints with prevalence of between 0.5% and 1% [1].

Mental health is defined as state of mind characterized by enthusiasm for life, relative absence of anxiety and other symptoms, capacity for establishing constructive relationships and overcoming daily desires and tensions [2]. Studies have shown that patients with RA, particularly those with active disease, are at high risk for depression and anxiety.

In RA patients, depression interacts with the way patients perceive and cope with their physical illness and how they interact with their doctors. It's associated with higher levels of suicide risk [3], and mortality [4]. Thus, depression increases the burden of RA to the patient and society [5].

There are several studies focus on psychological problems in patients with RA [4,6,7]. But there are few studies that focus on socio-economic status and depression/anxiety in these patients [8,9]. Thus, the aim of this study was to assess the prevalence of anxiety in patients

suffering from RA as well as the prevalence of depression in the same group of patients. In addition, we examined the relationship among disease parameters, socio-economic status and psychological status in patients with RA.

Patients and methods

A total of 103 RA cases were included in a cross-sectional study in the Department of Rheumatology. The period of data collection was from October 2012 to March 2013. Patients were diagnosed to have RA by the rheumatologist according to American College Rheumatology (ACR) classification Criteria for RA [10]. The study and the aim of the work were explained to the patients and an informed consent was obtained from everyone participated in this study.

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Age, sex, level school, disease duration and visual analogue scale of pain (VAS) were recorded. Disease activity was assessed by disease activity index 28 (DAS28). Health assessment questionnaire (HAQ) was used to assess functional impairment. Depression, Anxiety & Stress Scale (DASS-21) is a short form of DASS which is a self-report 4-point Likert scale and composed of three subscales: Depression (DASS-D), Anxiety (DASS-A), and Stress (DASS-S). The DASS-21 measures each of the three mental health conditions, over the past week, through seven items. Responses on each item range was from 0 (did not apply to me at all) to 3 (applied to me very much). The intensity of any of the three conditions is determined by the sum scores of responses to its 7-item subscale. The alpha reliability coefficients for the DASS-21 subscales have been examined in clinical and nonclinical samples and reported as .94 for DASS-D, .87 for DASS-A, and .91 for DASS-S [11].

For each patient, we recorded the average total price paid to buy his drugs and to achieve his blood tests. The productivity losses and Household work disability related to RA were assessed. We also evaluated the impact on quality of life (patients, partners and child) related to RA.

Statistical analysis: The data were analyzed using SPSS software version 13. Results were given as means and standard deviation. Student's t-test and mann-whitney test for continuous variables were used to examine the significance of differences between RA patients with and without depression/ anxiety. Chi square was used to examine qualitative variables. Results were reported with odds ratio (OR) and 95% confidence interval (CI). P-value less than 0.05 was regarded as significant.

Results

Demographic, clinical and socio-economic characteristics of RA patients

This study was carried on 103 RA patients (90 females and 13 males), their mean age was 49.7 ± 11.4 , ranged from 20 to 80 years. The duration of RA was 8.16 years (3.25-14.16). 97.1% of patients were treated by methotrexate and 24.3% received biotherapy. The demographic and clinical characteristics of patients with RA are shown in Table1.

Monthly expenditure on RA were in median of 375 dirhams (125-625) or 34 €, per month). Eighty patients (77.7%) considered their spending for RA very high. Thirty-one patients (30.1 %) were in paid employment at the onset of the disease, but 38.7% of them stopped work because of illness. Among housewives, the inability to domestic work was found in 31 patients (34.5%). 55% of patients with genital activity (n = 65) had sexual problems related to RA. 5 patients were divorced because of their disease and they were all female. Truancy of children was reported by 7 patients. The socio-economic characteristics of patients with RA are shown in Table2.

Psychiatric illness

According to the cut-off scores, anxiety disorder was present in 31/103 (30.1%), and 24/103 (23.3%) had depression (table1).

Clinical characteristics and socio-economic status of depressed and non depressed RA patients

A statistically significant difference was found between both groups depressed and non depressed RA patients as regards age, pain intensity, disease activity, functional impairment, ESR, household work disability and problems in family relationships. No significant difference was

Table 1. Demographic and clinical characteristics of RA patients (n= 103).

Characteristics	N = 103
Age per years	49,7 ±11,4
Sex (F/M)	90 / 13
Disease duration per years	8 (3-14)*
VAS (mean ± SD) (mm)	40 ± 29
DAS 28	4,27±1,75
Methotrexate (%)	97.1
HAQ	0,5 (0-1,37)*
DASS-21 (%)	
Depression	23,3
Anxiety	30.1

VAS: visual analogue scale of pain , DAS28: disease activity for 28 joint indices score; HAQ: health assessment questionnaire. *median and quartiles

Table 2. Socio-economic characteristics of patients with RA

Characteristics	N=103 (90 women)
School level (%)	
Analphabet	50,5
Elementary school	21,4
Middle school	24,3
High school	3,9
Monthly personal income (%)	
<1000dh	16,5
1000-2000dh	35
2000-4000dh	25,2
4000-6000dh	8,7
>6000dh	14,6
Monthly expenditure on RA	375 dirhams (125-625)*
Poor adherence to treatment (%)	16,5
Housework disability (%)	34,5
Household activities	23,3
Clean the house	26,7
Wash the floor	34,4
Caring for children and husband	14,4
Washing dishes	26,7
Cook	17,8
Negative impact on relations within the family (%)	55,5

*Median and quartile; dh: dirhams.

found between depressed and non depressed RA patients as regards gender, disease duration, treatment (synthetic DMARDs or biologics), spending on disease, sexual problems and school level (Table3).

Clinical characteristics and socio-economic status of anxious and non anxious RA patients

A statistically significant difference was found between anxious and non anxious RA patients as regards pain intensity, disease activity, functional impairment, household work disability and sexual problems. No significant difference was found between anxious and non anxious RA patients as regards, age, gender, disease duration, ESR, spending on disease, problems in family relationships, treatment (synthetic DMARDs or biologics) and school level (Table4).

Discussion

To the best of our knowledge, this is the first study in Morocco to show that RA has a considerable impact on emotional and mental health of patients.

Although there is a growing consensus regarding psychological disorders in RA, anxiety has received less attention in comparison with depression. Interestingly, prevalence of anxiety in our study was higher than depression with respectively 30.1% and 23.3%. The prevalence of anxiety in former studies ranged from 21 to 53.5% [12,13]. In other

Table 3. Clinical characteristics and socio-economic status of depressed and non depressed RA patients: (24 versus 79 patients respectively).

Characteristic	Depressed RA patients (n= 24)	Non depressed RA patients (n= 79)	P value
Sex (M/F)	2/22	11/68	0.728
Age (years)	45 ± 12	51 ± 10	0.049
Disease duration (years)	10(3,15)*	8(5,10)	0.401
VAS (0–100 mm)	53 ± 29	34 ± 28	0.01
ESR (mm/1st h)	40(24,59)*	28(14,38)*	0.029
DAS 28	5.3±1.8	3.9± 1.5	0.002
HAQ	2(0.6, 2.2)*	1.1(0,1.3)*	<0.001
Treatment :			
MTX	16(15%)	63(61%)	0.184
Biologics	8(7.7%)	16(15.5%)	
School level (%)			0.625
Analphabet	14(13.5%)	38(36.8%)	
Elementary school	5(4.8%)	17(16.5%)	
Middle school	5(4.8%)	20(19.4%)	
High school	0	4(3.8%)	
High spending on RA	24(23%)	74(71.8%)	0.588
No problems family relationships	2 (1.9%)	50 (48.5%)	<0.001
Household disability	13(14.4%)	0	0.033
Sexual problems	9(13.8%)	27(41.5%)	0.2

*median and quartiles, VAS: visual analogue scale of pain; DAS: disease activity score; HAQ: Health assessment questionnaire; ESR: erythrocyte sedimentation rate, MTX: methotrexate.

Table 4. Clinical characteristics and socio-economic status of anxious and non anxious RA patients: (31 versus 72 patients respectively).

Characteristic	Anxious RA patients (n= 31)	Non anxious RA patients (n= 72)	P value
Sex (M/F)	2/29	11/681	0.335
Age (years)	49 ± 13	50 ± 10	0.756
Disease duration	11(4,18)*	10(3,14)*	0.754
VAS (0–100 mm)	51 ± 26	34 ± 29	0.049
ESR (mm/1st h)	35(20,46)*	30(13,40)*	0.242
DAS 28	5±1.7	3.9±1.6	0.003
HAQ	1.7(0.5,2)*	1.1(0,1.3)*	0.002
Treatment :			
MTX	21(20.3%)	58(56.3%)	0.158
Biologics	10(9.7%)	14(13.6%)	
School level (%)			0.8
Analphabet	17(16.5%)	35(34%)	
Elementary school	5(4.8%)	17(16.5%)	
Middle school	8(7.8%)	17(16.5%)	
High school	1(0.9%)	3(2.9%)	
High spending on RA	30(29%)	68(66%)	0.1
No problems family relationships	11 (10.7%)	41 (39.8%)	0.09
Household disability	28(31%)	49(54.4%)	0.041
Sexual problems	20(30.7%)	16(24%)	0.014

*median and quartiles, VAS: visual analogue scale of pain; DAS: disease activity score; HAQ: Health assessment questionnaire; ESR: erythrocyte sedimentation rate, MTX: methotrexate.

studies conducted on patients with RA, major depressive disorder is common with a prevalence of 13–42% [14]. The wide range in the prevalence of depression and anxiety in clinical studies of RA is likely due to the different methods used for measuring depressive and anxious symptoms [15].

Our study showed that RA negatively affected family life and everyday activities. These results were also found in other studies [9,16,17]. The duration of the rheumatic disease does not appear to differ between patients with and without depression/ anxiety. These finding joined other studies results [18,19]. In this study, no significant relation was found between depression and gender while a significant relation was found between depression and age. These results are similar to Egyptian findings [20] but contradictory with other studies [21]. In the current study and like other studies a high significant relation was found between both groups depressed and anxious RA patients and VAS [20,22].

There is no doubt that limited function measured by the HAQ, and the high disease activity measured by the DAS28 are strong predictors of depression and anxiety in patients with RA [21,23]. But the finding of a correlation between depression and disease activity does not prove that depression is a direct consequence of disease activity. This relation can be mediated by psychological factors or another factor may be driving the relation [24].

Our results showed a real relation between household work disability and Psychiatric illness (depression and anxiety) in females RA. On the other hand, other studies [18] found higher prevalence of depressive symptoms among women compared to men. In our study we couldn't realize this comparison because of limited number of men.

Moreover, results showed that half of our patients was analphabet and most of patients included in this study are classified in the low-income sector which Monthly expenditure on RA were in median of 375 dirhams [125-625] or 34 €, per month) and 80 patients (77.7%) considered their spending for RA very high. However, spending on disease, sort of treatment (synthetic DMARDs or biologics) and school level didn't appear to be factors influencing the psychological status of our patient.

On the other hand, a significant correlation was found between anxiety and sexual problems, which not found with depression case. Problems in family relationships were real predictors of depression in patients with RA.

These findings confirmed the importance of psychosocial interventions in combination with medical therapy for RA patients. A possible limitation of the present study was that all patients involved in the survey were from only one center and its failure to differentiate between men and women because of small number of men.

Conclusion

Our study indicated that psychological problems were frequent in RA patients. Severe functional impairment and pain correlated with anxiety and depression. Disease activity was higher in anxious and depressed subgroups. Household work ability and interpersonal relations within the family was decreased in depressed subgroups.

In summary, the economic status does not appear to influence the psychological status of patients, however clinical and social characteristics seem to be predictor factors of depression/ anxiety.

References

- Alamanos Y, Drosos AA (2005) Epidemiology of adult rheumatoid arthritis. *Autoimmun Rev* 4: 130-136. [Crossref]
- McGlynn EA, Asch SM, Adams J, Keesey J, Hicks J, et al. (2003) The quality of health care delivered to adults in the United States. *N Engl J Med* 348: 2635-2645. [Crossref]
- Timonen M, Viilo K, Hakko H, Särkioja T, Ylikulju M, et al. (2003) Suicides in persons suffering from rheumatoid arthritis. *Rheumatology (Oxford)* 42: 287-291. [Crossref]

4. Sheehy C, Murphy E, Barry M (2006) Depression in rheumatoid arthritis—underscoring the problem. *Rheumatology* 45: 1325-1327. [[Crossref](#)]
5. Dickens C, Creed F (2001) The burden of depression in patients with rheumatoid arthritis. *Rheumatology (Oxford)* 40: 1327-1330. [[Crossref](#)]
6. Garrard J, Rolnick SJ, Nitz NM, Luepke L, Jackson J, et al. (1998) Clinical detection of depression among community-based elderly people with self-reported symptoms of depression. *J Gerontol A Biol Sci Med Sci* 53: M92-101. [[Crossref](#)]
7. Sousan Kolahi Hamid Noshad (2014) Mental Health Status of Women With Rheumatoid Arthritis in Iran. *Iran Red Crescent Med J* 16: e14250. [[Crossref](#)]
8. Mary Margaretten, Laura Julian (2011) Depression in patients with rheumatoid arthritis: description, causes and mechanisms. *Int J Clin Rheumatol* 6: 617-623. [[Crossref](#)]
9. Hanan Rkain, Fadoua Allali, Imane Jroundi, Najia Hajjaj-Hassouni (2006) Socioeconomic impact of rheumatoid arthritis in Morocco. *Joint Bone Spine* 73: 278-283. [[Crossref](#)]
10. Arnett FC, Edworthy SM, Bloch DA, et al. (1998) The American Rheumatism Association 1987 revised criteria for the classification of RA. *Arth Rheum* 31: 315-323. [[Crossref](#)]
11. Jihan SR, Mahmoud, MSN (2010) The Psychometric Properties of the 21-Item Depression Anxiety and Stress Scale (DASS-21) among a Sample of Young Adults. *Southern on line journal of Nursing and Research* 10 : N4.
12. Murphy S, Creed F, Jayson MI (1988) Psychiatric disorder and illness behaviour in rheumatoid arthritis. *Br J Rheumatol* 27: 357-363. [[Crossref](#)]
13. Gardiner BM (1980) Psychological aspects of rheumatoid arthritis. *Psychol Med* 10: 159-163. [[Crossref](#)]
14. Isik A, Koca SS, Ozturk A, Mermi O (2007) Anxiety and depression in patients with rheumatoid arthritis. *Clin Rheumatol* 26: 872-878. [[Crossref](#)]
15. Margaretten M, Julian L, Katz P, Yelin E (2011) Depression in patients with rheumatoid arthritis: description, causes and mechanisms. *Int J Clin Rheumatol* 6: 617-623. [[Crossref](#)]
16. Reisine ST, Goodenow C, Grady KE (1987) The impact of rheumatoid arthritis on the homemaker. *Soc Sci Med* 25: 89-95. [[Crossref](#)]
17. Pleck JH. In: Lopata HZ, Pleck JH, editors (1983) The husband's paid work and family roles. In: Research in the interweave of social roles. Vol III. Greenwich, CT. JAI Press.
18. Margaretten M, Yelin E, Imboden J, Graf J, Barton J, et al. (2009) Predictors of depression in a multiethnic cohort of patients with rheumatoid arthritis. *Arthritis Rheum* 61: 1586-1591. [[Crossref](#)]
19. Melanie M. VanDyke (2004) Anxiety in rheumatoid arthritis. *Arthritis Care & Research* 51 : 408-412.
20. Hameed Mostafa, Abdullah Radwan (2013) The relationship between disease activity and depression in Egyptian patients with rheumatoid arthritis. *The Egyptian Rheumatologist* 35 : 193-199.
21. Pincus T, Griffith J, Pearce S, Isenberg D (1996) Prevalence of self-reported depression in patients with rheumatoid arthritis. *Br J Rheumatol* 35: 879-883. [[Crossref](#)]
22. Yasser M. El-Miedany, Amany Haroun El Rasheed (2002) Is anxiety a more common disorder than depression in rheumatoid arthritis? *Joint Bone Spine* 69 : 300-306. [[Crossref](#)]
23. Kojima M, Kojima T, Suzuki S, Oguchi T, Oba M, et al. (2009) Depression, inflammation, and pain in patients with rheumatoid arthritis. *Arthritis Rheum* 61: 1018-1024. [[Crossref](#)]
24. Geenen R, Newman S, Bossema ER, Vriezckolk JE, Boelen PA (2012) Psychological interventions for patients with rheumatic diseases and anxiety or depression. *Best Pract Res Clin Rheumatol* 26: 305-319. [[Crossref](#)]