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Rheumatoid Arthritis and Systemic Lupus Erythematosus: Prevalence of Anxiety, Depression, Stress and Pain

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Abstract: ***Introduction: In present study, we aimed to measure the prevalence of anxiety, depression stress and pain in rheumatoid arthritis(RA) and systemic lupus erythematosus (SLE) patients. Materials & Methods: Present cross sectional study was conducted at the department of psychiatry of a tertiary care centre. A total of 50 consecutive patients diagnosed with rheumatoid arthritis and systemic lupus erythematosus as per International Classification of Diseases – Diagnostic Criteria for Research were selected for the study. Depression Anxiety Stress Scale (DASS) was used to assess level of depression, anxiety and stress while VAS scale was used to assess pain among cases. Data was analysed using SPSS ver. 21.0. Results: Moderate or severe depressive symptoms were very prevalent in the study population, with 37.5% of subjects of RA and 80% of subjects of SLE being suffering from depression. A total of 52.5% of the patients of rheumatoid arthritis and 60% of the patients of SLE had symptoms of anxiety. Stress was observed in 45% patients of RA and 80% patients of SLE. A total of 40% of the patients of both RA and SLE reported suffering from moderate amount of pain, 27% of RA patients and 20% of SLE patients reported severe pain in the study. It was also observed that various psychiatric co-morbidities were significantly correlated with each other i.e. depression, anxiety, stress and pain with each adding to the presence of other. Conclusion: Depression, Anxiety, psychological stress and mood status are independent factors in patients with RA and SLE. These factors need to be considered, particularly in patients who are resistant to different treatment regimens and in whom any reason for disease flare is not obvious. Higher pain levels was associated with moderate or severe depressive symptoms. Furthermore, those patients with moderate or severe depressive symptoms were more likely to have arthritis compared with those with no or mild depressive symptoms.***

Keywords: Anxiety, Depression, Pain, Rheumatoid arthritis, Stress, Systemic lupus erythematosus.

1. Introduction

The more recent analysis of the Global Burden of Disease has identified mental disorders and musculoskeletal diseases as some of the major contributors to Years Lived in Disability (YLD) [1]. Chronic pain affects every aspect of the individual's life, including their relationships with others, employment, and ability to participate in their normal activities. Clearly, when any condition has this level of impact on our patient's lives, and that of their loved ones, it's no wonder they are likely to experience negative emotions [2].

There is a strong link between chronic pain and depression, and although this is widely known, depression often remains under-diagnosed in individuals with chronic pain, Pain catastrophising involves the magnification of pain symptoms leading to increased levels of depression, an increased sense of helplessness, anxiety and consequent functional loss. It occurs as a result of the manifestation of negative feelings, such as anxiety. It can also lead to the individual displaying avoidance behaviours which, in turn, only lead to further increased levels of disability, disuse and depression [3].

Rheumatoid arthritis (RA) is a chronic autoimmune disease characterized by persistent inflammation of joints with an fluctuant course and has a prevalence of 0.2%-1.2% [4]. It involves peripheral joints which eventually results in joint damage which leads to deformities. The incidence is two to three times higher in women than in men with peak in sixties [4].Psychological stress and mood disorders such as depression and anxiety are more frequent in patients with RA.

Rheumatoid arthritis affects overall wellbeing of an individual. Due to chronic and disabling nature of disease it affects all domains of life i.e. physical, psychological, social etc. It causes high morbidity as well as mortality. Patients with rheumatoid arthritis lose their functional capacity by 30-50% at the end of 15 years of disease [5,6]. Along with functional disability, RA has an impact on the emotional and psychological functioning of the patient [7]. Due to persistent pain, stiffness, deformities, rheumatoid arthritis affects not only physical health but also affects mental health. Patients with rheumatoid arthritis can developpsychiatric disorders as well as have subsyndromal psychiatric symptoms (viz.anxiety, depression). Among the various causes of psychiatric illnesses in rheumatoid arthritis the most common is emotional reaction to painful and disabling illness affecting work, family and social activity [8].

Depression and anxiety is associated with immune and neurotransmitter dysregulation [9]. This dysregulation may lead to the activation of autoimmune mechanisms that play a central role in RA. Further, altered pain and reduction of physical activity may decrease endorphin levels, causing increased pain sensation and patient discomfort, thereby resulting with depression. Chronic pain syndromes such as RA and depression have common pathways, and a

dysfunction of these pathways may cause a cycle of pain and depression [10].

Psychiatric disorders like anxiety and depression are also associated with rheumatic diseases in some other ways, such as gender, time of appearance and course of illness. Associated co-morbidities, such as diabetes mellitus or chronic renal failure, may also contribute to the development and severity of distress. Considering the most commonly used therapy, there is evidence that corticosteroids lower serotonin levels, which can also cause depression[11]. The loss of recreational and social activities, has been shown to significantly increase the risk of depressive symptoms. The co-existence of both conditions adds to the burden of the disease on the healthcare system as well, with increased physician and general practitioner visits and more requests for analgesia. Depression can also result in poor adherence to treatment.

Due to potentially debilitating nature of the disease and its relatively early onset, Systemic lupus erythematosus (SLE), a chronic, inflammatory autoimmune disease that can potentially affect multiple organ systems, impairs quality of life and also leads to significant psychological distress in afflicted patients. SLE is characterized by the production of antibodies that are reactive with nuclear, cytoplasmic and cell membrane antigens [12]. SLE can pose multiple challenges and disrupt life goals throughout adulthood. SLE affects mostly women and has a high prevalence in vulnerable populations and certain ethnic groups, especially among individuals of African–American, Hispanic, Native American and Asian descent [13,14], and among those of lower socioeconomic status [15,16]. This disease can lead to lifethreatening consequences for approximately a third of diagnosed patients who may suffer impaired functioning in several organ systems, including the heart, lungs, liver and kidneys. Importantly, SLE can have profound effects on the physical and psychosocial adjustment of afflicted patients. For many patients, SLE can contribute to work disability, functional impairments, loss of valued activities and a high prevalence of mood disturbance [17].

Previous studies have found higher levels of psychiatric disturbances in patients with SLE, particularly depression, anxiety or distress [18]. Higher levels of social introversion [19] and obsessive compulsive disorder have also been reported in patients of SLE. Psycho-social stressors associated with having chronic illness may also increase risk for depression and anxiety [20].

In present study, weaimed to measure the prevalence of anxiety, depression stress and pain in rheumatoid arthritis and systemic lupus erythematosus patients.

2. Materials and Methods

Present cross sectional study was conducted atdepartment of psychiatry of a tertiary care hospital,part of a medical college in Pune. Study population included: patients diagnosed with Rheumatoid arthritis and Systemic lupus erythematosus attending the rheumatology OPDin the hospital. A total of 50 consecutive patients diagnosed with rheumatoid arthritis and systemic lupus erythematosus as per International Classification of Diseases (ICD-10 DCR) – Diagnostic Criteria for Research were selected for the study.

Inclusion Criteria

1) Those willing to participate in the study by means of written informed consent.
2) Those diagnosed with Rheumatoid Arthritis and systemic lupus erythematosus as per International Classification of Diseases and Health Related Problem (ICD 10-DCR Version- Diagnostic Criteria for Research).
3) Patient above 18 years.
4) Both male and female patients.
5) OPD/ IPD patients.

Exclusion Criteria

1) Patients having pre-existing psychiatric illness/ substance use disorder/ Neurological disorder.
2) Patients suffering from other ongoing medical/ surgical illnesses.

3. Methodology

All patients attending Rheumatology sub-speciality clinic and diagnosed with Rheumatic Arthritis and Systemic lupus erythematosus were provided with patient information sheet and consent form. A specially designed proforma containing all necessary details of the study was provided to the patients. The responses were scored and assessed in the Department of Psychiatry.

Tool Description

1) Depression Anxiety Stress Scale (DASS): This is a set of three self-report scales designed to measure the negative emotional states of depression, anxiety and stress. Each of the three scales contain 14 items divided into sub scales of 2-5 item with similar content. This has been shown to have high internal consistency and capacity to discriminate between the three related states, thus being useful to researchers [21].

2) Visual Analogue Scale (VAS): The visual analogue scale or visual analog scale (VAS) is a psychometric response scale which can be used in questionnaires. It is a measurement instrument for subjective characteristics or attitudes that cannot be directly measured. When responding to a VAS item, respondents specify their level of agreement to a statement by indicating a position along a continuous line between two end-points.

Statistical Analysis

The quantitative data was represented as their mean ± SD. Categorical and nominal data was expressed in percentage. The t-test was used for analysing quantitative data, or else non-parametric data was analyzed by Mann Whitney test and categorical data was analyzed by using chi-square test. Correlation between scores was computed by using Pearson's correlation co-efficient. The significance threshold of p-value was set at <0.05. All analysis was carried out by using SPSS software version 21.

3.1 Tables

Table 1: Distribution of patients according to Depression

Depression	Group	
	RA	SLE
No	25	0
	62.5%	0.0%
Mild	2	2
	5.0%	20.0%
Moderate	7	4
	17.5%	40.0%
Severe	2	2
	5.0%	20.0%
Extremely Severe	4	2
	10.0%	20.0%
Total	40	10
	100.0%	100.0%

Table 2: Distribution of patients according to Anxiety

Anxiety	Group	
	RA	SLE
No	19	4
	47.5%	40.0%
Mild	7	2
	17.5%	20.0%
Moderate	9	2
	22.5%	20.0%
Severe	4	2
	10.0%	20.0%
Extremely Severe	1	0
	2.5%	0.0%
Total	40	10
	100.0%	100.0%

Table 3: Distribution of patients according to Stress

Stress	Group	
	RA	SLE
No	22	2
	55.0%	20.0%
Mild	4	4
	10.0%	40.0%
Moderate	7	3
	17.5%	30.0%
Severe	7	1
	17.5%	10.0%
Total	40	10
	100.0%	100.0%

Table 4: Distribution of patients according to Pain

Pain	Group	
	RA	SLE
</= 5	13	4
	32.5%	40.0%
6 to 8	16	4
	40.0%	40.0%
> 8	11	2
	27.5%	20.0%
Total	40	10
	100.0%	100.0%

Table 5: Correlation between Depression, Anxiety, Stress and Pain scores

Pearson's correlation		Depression	Anxiety	Stress	VAS
Depression	r- value		.418**	.770**	.153
	p- value		.003	.000	.289
Anxiety	r- value	.418**		.558**	.083
	p- value	.003		.000	.565
Stress	r- value	.770**	.558**		.307*
	p- value	.000	.000		.030
VAS	r- value	.153	.083	.307*	
	p- value	.289	.565	.030	
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					

4. Results

The present study included 40 patients of Rheumatoid arthritis and 10 patients of Systemic lupus erythematosus. Moderate or severe depressive symptoms were very prevalent in our study population, with 37.5% of subjects of RA and 80% of subjects of SLE being suffering from depression (Table 1). A total of 52.5% of the patients of rheumatoid arthritis and 60% of the patients of SLE had symptoms of anxiety (Table 2). Stress was observed in 45% patients of RA and 80% patients of SLE (Table 3). A total of 40% of the patients of both RA and SLE reported suffering from moderate amount of pain, 27% of RA patients reported severe pain and 20% of SLE patients had severe pain in present study (Table 4). We also observed various psychiatric co-morbidities to be significantly correlated with each other i.e. depression, anxiety, stress and pain with each adding to the presence of other (Table 5).

5. Discussion

Rheumatoid Arthritis is a chronic inflammatory disease of unknown aetiology, with an unpredictable course and prognosis and SLE is an autoimmune disorder characterised by multi system inflammation with the generation of autoantibodies. Thus, it is not surprising that many patients with RA and SLE experience anxiety,depression and helplessness. The intensity of the disease varies and the individual has to learn to live with pain and disabilities [22]. It is therefore important to measure health status as well as other non-medical aspects of life such as social and emotional functioning and family and peer relationships from the patient's point of view.

6. Depression

The present study showed that moderate or severe depressive symptoms were very prevalent in our study population, with 37.5% of subjects of RA and 80% of subjects of SLE being suffering from depression.

Findings of Dickens C et al. [23] also indicate that subjects with RA are more likely to be depressed than healthy control subjects. Another study by Pincus T et al.[24] has also reported large percentage of depression in patients of rheumatoid arthritis. Other studies also observed that subjects with RA were more depressed than control subjects [25-33].

Karol DE et al.[34] sought to determine the prevalence of moderate or severe depressive symptoms and to determine factors associated with these depressive symptoms in a large cohort of patients with SLE and found that 41.7% of patients reported moderate to severe depressive symptoms. Our results are also consistent with previous reports highlighting the significance of depression in SLE population[35,36].

Anxiety and Stress

Anxiety and stress were also observed to be common psychiatric manifestations in cases of RA & SLE. A total of 52.5% of the patients of rheumatoid arthritis and 60% of the patients of SLE had symptoms of anxiety. Stress was also seen to be significantly associated with 45% patients of RA and 80% patients of SLE reported stress in present study.

Yılmaz V et al. [37] reported mood disorders such as depression and anxiety are known risk factors in 86.1% of the patients and responsible for aggravation of the Rheumatic arthritis. These results are also supported by various other previous findings by Hagglund et al [38], who found that measures of both depression and anxiety add to general distress. Also, Clark and Watson's[39] tripartite model (i.e. depression, anxiety, and distress) theorized that the shared factor of distress accounts for the overlap between anxiety and depression. Not surprisingly, anxiety and depression are commonly comorbid conditions and are typically correlated[40,41]. In addition, previous research has revealed that a frequent temporal sequence is anxiety first and then subsequently depression[42]. Therefore, screening for symptoms of anxiety in persons with RA might facilitate early identification of depression and, thereby, help to prevent future depressive episodes [43].

In regard to SLE our findings are in accordance with Bachen EA et al.[35] study which indicated that lifetime MDD and anxiety, affected 47% of the SLE patients and was the most common diagnosis, and also was 2 times more common than in general population estimates. Seguí J et al. [44] suggests that as many as 65% of such patients meet criteria for a psychiatric disorder. A similar lifetime prevalence of MDD (49%) and anxiety was also found in an out-patient sample of Brazilian women with SLE [45]. Our results are also consistent with those of Shih et al.[46] who, using a nationally representative sample of US adults, found that anxiety and depressive symptoms were more than twice as common in adults with arthritis than those without arthritis. Seawell AH et al.[17] in their study reported symptoms of depression and anxiety to be commonly reported in patients with SLE and are likely to be associated with the physical disability and stress of living with a chronic disease. Nery FG et al.[45] found that 69% of patients diagnosed with SLE were positive for a lifetime history of mood disorder, and 52% for lifetime anxiety disorder. There is also evidence to suggest that other forms of psychiatric disturbance are prevalent in SLE. In a study of 326 patients, 47% had a history of a major depressive episode, 24% had a history of specific phobia, 16% for panic disorder, 9% for obsessive–compulsive disorder and 6% for bipolar I disorder [35].

Pain

A total of 40% of our patients of both RA and SLE reported suffering from moderate amount of pain, 27% of RA patients reported severe pain and 20% of SLE patients had severe pain in present study.

Several longitudinal, prospective studies show that RA pain and depression tend to be predictive of each other and together lead to a downward spiral of functioning characterized by greater disability, increased sleep disturbance and fatigue, and heightened disease activity[46,47].One study found that patients with RA who had had an episode of depression (but who were not currently depressed) had significantly greater pain than controls without a history of depression. Moreover, Conner and colleagues[48] found that long-past episodes of major depression were associated with greater emotional reactivity to daily pain as well as less perceived control over pain episodes and their consequences. Patients with RA who have had multiple depressive episodes fare the worst. Zautra and colleagues [49] found that recurrently depressed patients with RA reported higher levels of pain than patients who had never been depressed and those who had experienced only a single episode of depression.

In regard to SLE,Karol DE et al.[34] reported that both pain was significantly associated with moderate or severe depressive symptoms. Research using the Rheumatology Attitudes Index (RAI) adapted for SLE from the Arthritis Helplessness Index[50,51],has shown that greater helplessness is associated with a range of negative outcomes in SLE, including depression, physical disability and poor health-related quality of life (HRQOL) [52]. The relationship between pain and depression is complex and is likely bidirectional. The presence of pain can lead to many depressive symptoms, including lack of pleasure, fatigue, and poor concentration. The contribution of depression on the experience of pain and functional impairment is also well-established, and treatment of depression in patients with other forms of arthritis has been shown to be effective in not only reducing depressive symptoms but also in decreasing pain and improving functional status and quality of life [53].

7. Conclusion

Depression, Anxiety**,** psychological stress and mood status are independent factors in patients with RA and SLE. These factors should be considered, particularly in patients who are resistant to different treatment regimens and in whom any other reason for disease flare is not obvious. We found that higher pain levels was associated with moderate or severe depressive symptoms. Furthermore, those patients with moderate or severe depressive symptoms were more likely to have arthritis compared with those with no or mild depressive symptoms. This study suggests that these clinical factors may serve as markers for depression as well as potential targets for amelioration of depression. In these two diseases, physical, psychological, and social variables fluctuate over time. Such studies could monitor changes in variables such as depression, disability, pain, and social contact to examine the temporal, and hence likely causal, association between these variables. Such studies will increase our understanding of how physical and psychosocial factors might interact to result in psychological disorders in these patients and help in the direction of

treatments to have greatest effects. Psychotropic medication viz antidepressants ameliorate both pain and depressive symptoms. Future studies should empirically test whether cognitive behaviour interventions that target negative illness perceptions such as perceived control of pain are additionally effective for patients in sustaining both short and long term reduction of pain symptoms.

References

[1] Vos T, Flaxman AD, Naghavi M, Lozano R, Michaud C, Ezzati M, Shibuya K, Salomon JA, Abdalla S, Aboyans V, Abraham J. Years lived with disability (YLDs) for 1160 sequelae of 289 diseases and injuries 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. The lancet. 2012 Dec 15;380(9859):2163-96.

[2] Salazar A, Duenas M, Mico JA, Ojeda B, Aguera-Ortiz L, Cervilla JA&Failde I. 2013. Undiagnosed mood disorders and sleep disturbance in primary care patients with chronic muscuoskeletal pain. Pain Medicine, 14, 1416-1425.

[3] Block C &Cianfrini L. 2013. Neuropsychological and neuroanatomical sequelae of chronic non-malignant pain and opoid analgesia. NeuroRehabilitation, 33, 343-366.

[4] Silman AJ, Hochberg MC. Epidemiology of the Rheumatic Diseases. 2nd ed. New York: Oxford University Press; 2001.

[5] Scott DL, Symmons DP, Coulton BL, Popert AJ. Long-term outcome of treating rheumatoid arthritis: Results after 20 years. Lancet 1987; 1:1108–11.

[6] Wolfe F, Mitchell DM, Sibley JT, Fries JF, Bloch DA, Williams CA, et al. The mortality of rheumatoid arthritis. Arthritis Rheum 1994; 37:481–94.

[7] Sokka T, Krishnan E, Hakkinen A, Hannonen P. Functional disability in rheumatoid arthritis patients compared with a community population in Finland. Arthritis Rheum 2003; 48:59–63.

[8] Ando Y, Kai S, Uyama E, et al. Involvement of the central nervous system in rheumatoid arthritis: its clinical manifestations and analysis by magnetic resonance imaging. Intern Med. 1995; 34(3):188-191.

[9] Maes M, Bosmans E, De Jongh R, Kenis G, Van-doolaeghe E, Neels H. Increased serum IL-6 and IL-1 receptor antagonist concentrations in ma- jor depression and treatment resistant depres- sion. Cytokine 1997; 9: 853-8.

[10] Covic T, Adamson B, Spencer D, Howe G. A bio-psychosocial model of pain and depression in rheumatoid arthritis: a 12-month longtidunal study. Rheumatology (Oxford) 2003; 42: 1287- 94.

[11] Kozora E, Ellison MC, West S. Depression, fatigue, andpain in systemic lupus erythematosus (SLE) : relationship to the American College Of Rheumatalogy SLE neuropsychological battery. Arthritis Rheum 2006;55;628-35.

[12] Steinberg AD, Klinman DM. Pathogenesis of systemic lupus erythematosus. Rheum. Dis. Clin. North Am. 1988; 14(1):25–41.

[13] Hochberg MC. Systemic lupus erythematosus. Rheum. Dis. Clin. North Am.1990; 16(3):617–639.

[14] Petri M. Musculoskeletal complications of systemic lupus erythematosus in the Hopkins Lupus Cohort: an update. Arthritis Care Res. 1995;8(3):137–145.

[15] Lotstein DS, Ward MM, Bush TM, Lambert RE, van Vollenhoven R, Neuwelt CM. Socioeconomic status and health in women with systemic lupus erythematosus. J. Rheum. 1998;25(9):1720–1729.

[16] Trupin LM, Tonner C, Yazdany J et al. The role of neighborhood and individual socioeconomic status in outcomes of systemic 10 lupus erythematosus. J. Rheumatol. 2008;35:1782–1788.

[17] Seawell AH, Danoff-Burg S. Psychosocial research on systemic lupus erythematosus: a literature review. Lupus. 2004;13:891–899.

[18] Waterloo K, Omdal R, Husby G, Mellagren SI. Emotional Status in systemic lupus erythematosus. Scand J Rheumatol. 1998;27:410-4.

[19] Slattery MJ, Dubbert BK, Allen AJ, Leonard HL, Swedo SE, Gourley MF. Prevalance of obsessive compulsive disorder in patient with systemic lupus erythematosus. J Clin Psychiatry. 2004;65:301-6.

[20] Sheehy C, Murphy E, Barry M. Depression in rheumatoid arthritis—underscoring the problem. 2006;45:1325-1327

[21] Crawford JR, Henry JD. The Depression Anxiety Stress Scales (DASS): Normative data and latent structure in a large non-clinical sample. British journal of clinical psychology. 2003 Jun;42(2):111-31.

[22] Lindroth Y, Strombeck B, Brossner M, Gullberg B, Wollheim FA. Learning helplessness and its correlation to impairment, pain, anxiety and depression in rheumatoid arthritis. Scand J Rheuma- tol 1994;23:299–304.

[23] Dickens C, McGowan L, Clark-Carter D, Creed F: Depression in rheumatoid arthritis: a systematic review of the literature with meta-analysis. Psychosom Med 2002, 64:52.

[24] Pincus T, Callaghan LF. Depression scales in rheumatoid arthritis: criterion contamination in. Patient Educ Counselling 1993;20:133– 43.

[25] Katz PP, Yelin EH. Life activities of persons with rheumatoid arthritis with and without depressive symptoms. Arthritis Care Res 1994;7:69–77.

[26] Frank RG, Chaney JM, Clay CL, Shutty MS, Beck NC, Kay DR, Elliott TR, Grambling S. Dysphoria: a major symptom factor in persons with disability or chronic illness. Psychiatry Res 1992; 43:231– 41.

[27] Frank RG, Chaney JM, Clay DL, Kay DR. Depression in rheuma- toid arthritis: a re-evaluation. RehabilPsychol 1991;36:219–30.

[28] Pincus T, Griffiths J, Pearce S, Isenberg D. Prevalence of self- reported depression in patients with rheumatoid arthritis. Br J Rheumatol 1996;35:879–83.

[29] Pincus T, Griffiths J, Isenberg D, Pearce S. The Well-Being Questionnaire: testing the structure in groups with rheumatoid arthritis. Br J Health Psychol 1997;2:167–74.

[30] Ahles TA, Yunus MB, Masi AT. Is chronic pain a variant of depressive disease? The case of primary fibromyalgia syndrome. Pain 1987;29:105–11.

[31] Ahles TA, Yunus MB, Riley SD, Bradley JM, Masi AT. Psychological factors associated with primary

fibromyalgia syndrome. Arthritis Rheum 1984;27:1101–6.
[32] P. Roy-Byrne, N. Afari, S. Ashton, M. Fischer, J. Goldberg, and D. Buchwald, "Chronic fatigue and anxiety/depression: a twin study," British Journal of Psychiatry, vol. 180, no. 1, pp. 29–34, 2002.
[33] P. Skapinakis, G. Lewis, and V. Mavreas, "Temporal relations between unexplained fatigue and depression: longitudinal data from an international study in primary care," Psychosomatic Medicine, vol. 66, no. 3, pp. 330–335, 2004.
[34] Karol DE, Criscione-Schreiber LG, Lin M, Clowse ME. Depressive symptoms and associated factors in systemic lupus erythematosus. Psychosomatics. 2013 Sep 1;54(5):443-50.
[35] Bachen EA, Chesney MA, Criswell LA. Prevalence of mood and anxiety disorders in women with systemic lupus erythematosus. Arthritis Rheum. 61(6), 822–829 (2009).
[36] Stojanovich L, Zandman-Goddard G, Pavlovich S, Sikanich N. Psychiatric manifestations in systemic lupus erythematosus. Autoimmun. Rev. 6(6), 421–426 (2007).
[37] Yılmaz V, Umay E, Gündoğdu İ, Karaahmet ZÖ, Öztürk AE. Rheumatoid Arthritis: Are psychological factors effective in disease flare?. European journal of rheumatology. 2017 Jun;4(2):127.
[38] Hagglund KJ, Roth DL, Haley WE, Alarcon GS. Discriminant and convergent validity of self-report measures of affective distress in patients with rheumatoid arthritis. J Rheumatol. 1989; 16:1428 –32.
[39] Clark L, Watson D: Tripartite model of anxiety and depression: Psychometric evidence and taxonomic implications. J AbnormPsychol 1991, 100:316-336.
[40] Endler NS, Cox BJ, Parker JDA, Bagby RM. Self-reports of depression and state-trait anxiety: evidence for differential assessment. J PersSocPsychol 1992;63:832–8.
[41] McWilliams LA, Cox BJ, Enns MW. Self-report differentiation of anxiety and depression in a mood disorders sample. J PsychopatholBehav Assess 2001;23:125-31.
[42] Alloy LB, Kelly KA, Mineka S, Clements CM. Comorbidity of anxiety and depressive disorders: a helplessness-hopeless- ness perspective. In: Maser JD, Cloniger CR, editors. Comor- bidity of mood and anxiety disorders. Washington (DC): American Psychiatric Press; 1990. p. 499 –543.
[43] Anderson KO, Keefe FJ, Bradley LA, McDaniel LK, Young LD, Turner RA, et al. Prediction of pain behavior and functional status of rheumatoid arthritis patients using medical status and psychological variables. Pain 1988;33:25–32
[44] Seguí J , Ramos-Casals M , García-Carrasco M et al. Psychiatric and psychosocial disorders in patients with systemic lupus erythematosus: A longitudinal study of active and inactive stages of the disease. Lupus 9(8), 584–588 (2000).
[45] Nery FG, Borba EF, Viana VS et al. Prevalence of depressive and anxiety disorders in systemic lupus erythematosus and their association with anti-ribosomal P antibodies. Prog. Neuropsychopharmacol. Biol. Psychiatry 32(3), 695–700 (2008).
[46] Nicassio PM, Wallston KA. Longitudinal relationships among pain, sleep problems, and depression in rheumatoid arthritis. J Abnorm Psychol. 1992;101:514–520.
[47] Fifield J, Tennen H, Reisine S, McQuillan J. Depression and the long-term risk of pain, fatigue, and disability in patients with rheumatoid arthritis. Arthritis Rheum. 1998;41:1851–1857.
[48] Conner TS, Tennen H, Zautra AJ, et al. Coping with rheumatoid arthritis pain in daily life: within-person analyses reveal hidden vulnerability for the formerly depressed. Pain. 2006;126:198–209.
[49] Zautra AJ, Parrish BP, Van Puymbroeck CM, et al. Depression history, stress, and pain in rheumatoid arthritis patients. J Behav Med. 2007;3:187–197.
[50] Engle EW, Callahan LF, Pincus T, Hochberg MC. Learned helplessness in systemic lupus erythematosus: analysis using the rheumatology attitudes index. Arthritis Rheum. 33(2), 281–286 (1990).
[51] Nicassio PM, Wallston KA, Callahan LF, Herbert M, Pincus T. The measurement of helplessness in rheumatoid arthritis. The development of the arthritis helplessness index. J. Rheum.1985; 12(3), 462–467.
[52] Sanchez ML, McGwin G Jr, Duran S et al. LUMINA Study Group. Factors predictive of overall health over the course of the disease in patients with systemic lupuos erythematosus from the LUMINA cohort (LXII): use of the SF-6D. Clin. Exp. Rheumatol.2009; 27, 67–71.
[53] Lin EH, Katon W, Von Korff M, Tang L, Williams JW Jr., Kroenke K, et al: Effect of improving depression care on pain and functional outcomes among older adults with arthritis: a randomized controlled trial. JAMA 2003; 290(18):2428–2429.

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