

Depression Among Patients with Rheumatic Musculoskeletal Disorders Attending A Tertiary Hospital in Northern Nigeria

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ABSTRACT

Rheumatic musculoskeletal disorders are group of diseases affecting one or multiple joints of the body resulting in pain, swelling, stiffness, and loss of joint functions. Being a chronic condition that cause so much morbidity, they can precipitate psychological disorder, including depression. The comorbidity of depression with rheumatic disorders lead to increase, morbidity, disability and mortality. The objective of this study was to determine prevalence of depressive disorder in rheumatic musculoskeletal disorders and their correlates among the patients attending Rheumatoid Clinic of ABUTH, Zaria. The cross-sectional study involved 151 randomly selected participants via a systematic random sampling method that had socio-demographic and clinical questionnaire, MINI and WHO Disability Assessment Schedule administered on them. The data was analysed with SPSS 20. The prevalence rate of depressive disorder among the participants was 14.6%. Depression was significantly associated with employment status ($\chi^2 = 9.402$, $p=0.004$), marital status ($\chi^2 = 12.939$, $p=0.005$), severity of pain ($\chi^2 = 16.663$, $p=0.001$), level of disability ($\chi^2 = 16.002$, $p<0.001$) and poor physician recognition of emotional health ($\chi^2 = 14.663$, $p=0.001$). The level of disability was found to be the independent determinant of depression among the participants. Pains and disabilities are common complications of rheumatic musculoskeletal disorders. Both are highly associated with depression. Poor recognition of emotional health of the patient further aggravate depression. The presence of depression on the other further leads to persistent complaint of pain and disabilities. The clinicians should therefore routinely look out for depressive symptoms and promptly refer cases to mental health services for further evaluation and management. This will increase the overall well-being of the patient.

Keywords: Depression, Northern Nigeria, Rheumatic Musculoskeletal Disorders.

INTRODUCTION

Rheumatic musculoskeletal disorders are a group of inflammatory disorders affecting one or more joints of the body, involving the breakdown of the joint cartilages with resultant pain, swelling, stiffness, and or loss of joint functions.¹ These disorders include rheumatoid arthritis, gouty

arthritis, osteoarthritis, systemic lupus erythematosus, sjogren's disease among others. They constitute the second most common cause of disability worldwide, when measured by years lived with disability (YLDs).^{2,3} Rheumatologic disorders are capable of impacting negatively on the emotional health of the sufferers, including precipitating depressive disorders.

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Depression as a disorder is a clinical syndrome characterized by persistent feeling of low mood, loss of energy, loss of interest in previously pleasurable activities and other varieties of emotional, cognitive and behavioral symptoms interfering significantly with personal and social functioning. Depression is presently the fourth leading cause of global burden of disease^{4,5} and is also regarded as the leading cause of disability worldwide.⁵

Thus the comorbidity of depression with rheumatic musculoskeletal diseases could further increase the morbidity associated with the either of the illness alone, lower the quality of life and worsen treatment outcomes, including increased mortality among the sufferer.⁶ Physicians attending to these patients often failed to recognize the need to search for symptoms of depression and promptly refer those in need of treatment probably because not much study have been done to highlight the contribution of depression in the overall illness burden on the patient especially in Northern Nigeria. The few available studies on the impact of depression among patients with rheumatic musculoskeletal diseases were concentrated in the southern part of Nigeria

The aim of this study is to determine the prevalence and correlates of depression among patients with rheumatic musculoskeletal disorders attending clinic at Ahmadu Bello University Teaching Hospital, Zaria

MATERIALS AND METHODS

It was a cross-sectional descriptive study involving one hundred and fifty-one Rheumatic Musculoskeletal Disease Patients attending Rheumatoid Clinic of Ahmadu Bello University Teaching Hospital, Zaria. The sample size was based on the prevalence of 10.7 % reported by Kelly et al⁷ among arthritis patients with depression, using the formula: $n = z^2pq/d^2$ and $z = 1.96$. The patients were selected via systematic random sampling method.

Ethical approval was obtained from the Hospital Ethical Committee and informed consent were obtained from the participants. Included in the study were patients aged eighteen years and above without previous history of depression. Those with severe illness were excluded. The Socio-demographic and

clinical questionnaire designed by the authors as well as MINI, WHO disability assessment schedule (WHODAS) and visual analogue pain scale (VAS) were administered to all the patients. The study was carried out over ten week's period between October and December, 2021.

The Rheumatoid Clinic runs once a week with an average of sixty patients. On each clinic day, the attendance register served as sample frame from which the first patient that met inclusion criteria was randomly selected. Others were picked at calculated sample interval until about fifteen patients were selected on each clinic day. This was repeated every week until the calculated sample size was obtained. The Data were analyzed with SPSS 20. The descriptive statistics were calculated. Associations between variables were established with chi square and multiple logistic regression was used to establish independent determinants. All the statistics were calculated at 5% level of probability.

RESULTS

The socio-demographic characteristic and clinical characteristics of the participants were shown in Table 1 and 2 respectively. The mean aged of the participants was 46.5 years with SD ± 4.2 years. There were more females than males and more than half have at least secondary education. About two-thirds were employed or have retired and they were mainly urban dwellers. The number of participants that met the diagnosis of depression using MINI was 22, giving a prevalence of 14.6% and the factors found to be associated with depression were marital status, employment status (table 3), severity of pain, and level of disability (table 4). The level of disability is the single most important independent determinant of depression among the participants as shown by multiple regression analysis of these associated factors (table 5).

Table 1: Socio-demographic Characteristics of the Participants (N = 151)

| Age (Years) | Frequency (N) | Percentage (%) |
|--------------------------|---------------|----------------|
| 18 – 40 | 61 | 40.4 |
| > 40 | 90 | 59.6 |
| Mean = 46.5 ±4.2 | | |
| Sex | | |
| Male | 66 | 43.7 |
| Female | 85 | 56.3 |
| Marital Status | | |
| Single | 16 | 10.6 |
| Married | 107 | 70.9 |
| Divorced | 28 | 18.5 |
| Religion | | |
| Islam | 121 | 80.1 |
| Christianity | 30 | 19.9 |
| Educational Level | | |
| None | 34 | 22.5 |
| Primary | 22 | 14.6 |
| Secondary | 20 | 13.2 |
| Tertiary | 75 | 49.7 |
| Employment status | | |
| Unemployed | 54 | 35.8 |
| Employed | 69 | 45.7 |
| Retiree | 28 | 18.5 |

Table 2: Clinical Characteristics of the participants (N=151)

| Clinical variables | Frequency (N) | Percentage (%) |
|----------------------------|---------------|----------------|
| Area of Domicile | | |
| Rural | 17 | 11.3 |
| Urban | 134 | 88.7 |
| Living Alone | | |
| No | 143 | 94.7 |
| Yes | 8 | 5.3 |
| Accompanied | | |
| No | 90 | 59.6 |
| Yes | 61 | 40.4 |
| Duration of Illness | | |
| < 1 years | 14 | 9.3 |
| 1 – 10 years | 111 | 73.5 |
| > 10 years | 26 | 17.2 |
| Pain Assessment | | |
| None | 6 | 4.0 |
| Mild | 49 | 32.5 |
| Moderate | 66 | 43.7 |
| Severe | 30 | 19.9 |
| WHODAS Score | | |
| ≤ Mean | 80 | 53.0 |
| > Mean | 71 | 47.0 |

Table 3: Socio-demographic factors associated with Depression among the Participants

| Variables | Categories | Depression | | No Depression | | X ² | df | p- value |
|-----------------------|--------------|------------|------|---------------|------|----------------|----|----------|
| | | N | % | N | % | | | |
| Age | 18 – 40 | 11 | 18.0 | 50 | 82.0 | 0.986 | 1 | 0.321 |
| | Above 40 | 11 | 12.0 | 79 | 88.0 | | | |
| Gender | Males | 8 | 12.1 | 58 | 87.9 | 0.565 | 1 | 0.452 |
| | Females | 14 | 16.5 | 71 | 83.5 | | | |
| Religion | Christianity | 5 | 16.7 | 25 | 83.3 | 0.006 | 1 | 0.940 |
| | Islam | 17 | 14.0 | 104 | 86.0 | | | |
| Level of Education | < secondary | 10 | 17.9 | 46 | 82.1 | 4.533 | 4 | 0.339 |
| | ≥ secondary | 12 | 12.6 | 83 | 87.4 | | | |
| Employment Status | Employed | 2 | 3.0 | 67 | 97.0 | 9.402* | 2 | 0.009 |
| | Unemployed | 20 | 24.4 | 62 | 75.6 | | | |
| Marital Status | Married | 6 | 5.6 | 101 | 94.4 | 12.939 | 3 | 0.005 |
| | Single | 14 | 31.8 | 30 | 68.2 | | | |
| Area of Domicile | Rural | 1 | 5.9 | 16 | 94.1 | 0.508* | 1 | 0.476 |
| | Urban | 21 | 15.7 | 84.3 | | | | |
| Living Alone | Yes | 2 | 25.0 | 6 | 75.0 | 0.897* | 2 | 0.639 |
| | No | 20 | 14.0 | 123 | 86.0 | | | |
| Accompanied to Clinic | Yes | 11 | 18.0 | 50 | 82.0 | 0.986 | 1 | 0.321 |
| | No | 11 | 12.2 | 79 | 87.8 | | | |

Table 4: The Clinical Characteristics associated with Depression among the patients

| Variables | Categories | Depression | | No Depression | | X ² | Df | p-value |
|------------------------------------|-----------------|------------|------|---------------|------|----------------|----|------------------|
| | | (n) | % | (n) | % | | | |
| Duration of illness from diagnosis | ≤ 10 years | 20 | 16.0 | 105 | 84.0 | 5.839* | 4 | 0.211 |
| | > 10 years | 8.0 | | 92.0 | 24 | | | |
| No of joints involved | ≤ 2 joints | 14 | 19.7 | 57 | 80.3 | 2.854 | 1 | 0.091 |
| | > 2 joints | 8 | 10.0 | 90.0 | 72 | | | |
| Alternative Treatment | Yes | 12 | 14.0 | 76 | 86.0 | 0.148 | 1 | 0.701 |
| | No | 10 | 15.9 | 53 | 84.1 | | | |
| Medication Adherence | Good | 21 | 14.8 | 121 | 85.2 | 0.121* | 2 | 0.941 |
| | Poor | 1 | 11.1 | 8 | 88.9 | | | |
| Clinic Attendance | Good | 20 | 14.0 | 122 | 86.0 | 2.829* | 2 | 0.243 |
| | Poor | 2 | 22.2 | 7 | 77.8 | | | |
| Pain Assessment (VAS) | None/Mild pain | 2 | 3.6 | 53 | 96.4 | 16.663* | 3 | 0.001 |
| | Mod/Severe pain | 20.8 | | 76 | 79.2 | | | |
| WHODAS Score | ≤ Mean | 3 | 3.8 | 77 | 96.2 | 16.002* | 1 | <0.001 |
| | > Mean | 19 | 26.8 | 73.2 | 52 | | | |

Table 5: Multiple Regression Analysis of the associated factors with Depression

| Variables | Coefficient of Regression | Standard Error | P- Value | OR | 95% C I |
|------------------------------------|---------------------------|----------------|--------------|-------|---------------|
| Employment status | 0.387 | 1.151 | 0.736 | 1.473 | 0.154 -14.051 |
| Marital status | 1.968 | 1.038 | 0.058 | 7.155 | 0.935 -54.775 |
| VAS grading of pain | -0.745 | 0.619 | 0.229 | 0.475 | 0.141 - 1.598 |
| WHO Disability Assessment Schedule | 1.965 | 0.717 | 0.006 | 3.401 | 1.034 - 5.572 |

DISCUSSION

This study found a point prevalence of depressive disorder of 14.6% in rheumatic musculoskeletal disorders which is higher than the values found in the general population.⁸ Being a chronic illness that is often accompanied by chronic pain, bodily disfigurement, loss of mobility, the limitations and restrictions in life choices suffered may put patients at increased risk for depression.⁹ The prevalence of depression in this study was however lower than 27.6% reported by Chimbo et al¹⁰ among their subjects probably because a standardized diagnostic tool was used for this study and it was not specific to a particular musculoskeletal disorder unlike the Chimbo et al that is specifically about one of the musculoskeletal disorders.

The variables found to be significantly associated with current depressive disorder in this study are employment status, marital status, the intensity of pain and the degree of disability. Unemployment

comes with frustration, unhappiness, seeking of assistance to meet basic needs and these may lower self-esteem. It may also lead to loss of economic power, thereby rendering the unemployed incapable of meeting their financial obligations. Loss of economic power makes the unemployed dependent on others for medical treatments, feeding and other necessities of life. These have numerous psychological impacts that may predispose some unemployed to the development of depression. The participants that were single (consisting of not married, divorced, or separated) at the time of the study were more depressed compared with those that were married. This is expected because marriage is a social relationship that offers some level of social support to the participants in times of crisis, thereby increasing positive self-image especially in our environment where high premium is placed on marital institution.

The participants with moderate to severe pain were found to be more depressed than those with none to

mild pain. Literatures reviewed have shown pain as a common factor associated with depression in patients with arthritis, for example, Rosemann et al. and Nicassio et al. found from their studies that pain is the most important determinant of depression among their subjects.^{10,11} Disabling pain can cause feeling of hopelessness and the inability to participate in social activities and this may contribute to loss of self-esteem and ultimately depression in some vulnerable individuals.¹²

A strong significant association was found in this study between level of disability and depressive disorder. The odd of suffering from depressive disorder is three times higher among patients with significant disability than those without. Disability implies activity limitations, social participation and restrictions in virtually all the essentially routines of life, resulting in feeling of hopelessness and giving up in life thereby setting stage for depression. Disability and pain have a bidirectional relationship with depression such that disability and pain predispose patients to depression, and the depression worsens the disability and pain.

CONCLUSION

Depression is common among patients with rheumatic musculoskeletal disease. Pains and disabilities are common complications of rheumatic musculoskeletal disorders. Both are highly associated with depression. Poor recognition of emotional health of the patient further aggravate depression. The presence of depression on the other further leads to persistent complaint of pain and disabilities.

There is need for the attending physicians to be on the lookout for depression among their patients especially those that are unemployed, single with persistent complaint of pain and disability. Simple screening tool for psychological distress such as GHQ-12 can easily be administered by the attending physicians and refers those in need to psychiatrist for evaluation and management of any comorbid depression. In this way, holistic care that promote better outcomes and well-being may be achieved.

Conflict of Interest: None

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