Journal of Health and Rehabilitation Research 2791-156X JHRR

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Original Article

Self-Reported Symptoms of Depression, Anxiety, and Stress Among Patients with Rheumatic Diseases Reported at Rheumatology Centres: A Study of Prevalence and Correlation

Muhammad Ammar Khan[1]*, Amna Mubeen[2], Sana Mustafa[3], Haiqa Tariq[4], Muhammad Shiraz Niaz[5], Khalid Parvez[6]

[1]MBBS, FCPS (Medicine), Senior Registrar, Madinah Teaching Hospital/University Medical and Dental College Faisalabad Pakistan.
[2]Student (Bachelor's in Applied Psychology), Government College University Faisalabad Pakistan.
[3]MSC Clinical Psychology, ADCP Clinical Psychology, Senior Clinical Psychologist at Madinah Teaching Hospital Faisalabad Pakistan.
[4]Student (Bachelor's in Applied Psychology), Government College University Faisalabad Pakistan.
[5]MBBS FCPS Medicine, Fellow of Rheumatology, Senior Registrar, Sheikh Zayed Hospital Rahim Yar Khan Pakistan.
[6]Specialty Certificate in Rheumatology (RCP UK), FCPS Rheumatology, MRCP (Ireland), FCPS Medicine, MBBS, Associate Professor of Rheumatology, Madinah Teaching Hospital/University Medical & Dental College Faisalabad Pakistan.
Corresponding Author: Muhammad Ammar Khan; Senior Registrar; Email: Dowite2015@yahoo.com

Conflict of Interest: None.

Khan MA., et al. (2024). 4(1): DOI: https://doi.org/10.61919/jhrr.v4i1.483

ABSTRACT

Background: The intersection of rheumatic diseases with psychological factors such as stress, resilience, and social support plays a crucial role in shaping the quality of life for patients. Understanding these dynamics is essential for developing holistic care strategies that address both the physical and psychological aspects of arthritis.

Objective: This study aims to explore the prevalence of stress, resilience, and social support among patients with arthritis and examine their correlation with life satisfaction.

Methods: A total of 58 male and female arthritis patients aged 18 to 90 were selected from three hospitals in Faisalabad, Punjab, Pakistan, using a stratified random sampling technique. Descriptive statistics were used to analyse socio-demographic variables. The Perceived Stress Scale (PSS), Life Satisfaction Scale (LSS), Resilience Scale (RS), and the Multidimensional Scale of Perceived Social Support (MSPSS) assessed psychological factors. Pearson correlation, t-tests, and regression analyses were conducted using SPSS version 25 to explore relationships among variables and the mediation effect of resilience between stress, social support, and life satisfaction.

Results: The mean scores for perceived stress (M = 23.31, SD = 5.67), life satisfaction (M = 43.60, SD = 8.28), resilience (M = 74.15, SD = 11.42), and social support (M = 46.32, SD = 18.69) were calculated. Gender differences were non-significant for stress and resilience. Correlation analysis revealed a significant negative relationship between perceived stress and life satisfaction ($r = -.339$, $p < .01$), while resilience showed a strong positive correlation with social support ($r = .621$, $p < .01$). Regression analysis highlighted that resilience did not significantly mediate the relationship between perceived stress and life satisfaction ($\Delta R^2 = .02$), nor between social support and life satisfaction ($\Delta R^2 = .006$).

Conclusion: The study underscores the profound impact of psychological factors on the quality of life in arthritis patients. While stress negatively affects life satisfaction, resilience and social support emerge as crucial for enhancing well-being. These findings advocate for integrated psychological interventions in arthritis management to improve patient outcomes.

Keywords: Arthritis, Stress, Resilience, Social Support, Life Satisfaction, Psychological Well-being.

INTRODUCTION

The intricate relationship between rheumatic diseases and mental health disorders underscores a complex clinical landscape that demands a nuanced understanding of their interconnectedness. Rheumatic diseases, which include a wide range of conditions characterized by inflammation and pain in the joints, muscles, and connective tissues, significantly burden patients by affecting their quality of life, physical capabilities, and social interactions. However, the challenges posed by these conditions extend beyond physical symptoms, as there is a growing body of evidence highlighting a strong correlation between rheumatic conditions and the

Journal of Health and Rehabilitation Research 2791-156X JHRR

prevalence of mental health disorders, particularly depression, anxiety, and stress. These mental health issues not only exacerbate the subjective experience of physical symptoms but also complicate the management and treatment outcomes of rheumatic diseases, emphasizing the need for a comprehensive approach to patient care (1).

This study aims to shed light on the prevalence of self-reported symptoms of depression, anxiety, and stress among patients with rheumatic diseases attending rheumatology centres. By delving into the intricate relationship between the physical manifestations of rheumatic diseases and the psychological well-being of patients, this research seeks to offer valuable insights that could significantly influence clinical practice (2). Specifically, it underscores the necessity of integrating care models that simultaneously address the physical and mental health aspects of rheumatic conditions. The hypothesis driving this investigation posits that patients with rheumatic diseases are likely to experience higher rates of depression, anxiety, and stress compared to the general population. This is attributed to the chronic pain, disability, and uncertainty inherent in these conditions, which could potentially contribute to an increased vulnerability to mental health issues. Through a comprehensive analysis, this study aims to identify specific patterns or factors that exacerbate this vulnerability, such as disease severity, duration, and impact on daily functioning (3).

Recent research has provided substantial contributions to our understanding of this subject. For instance, Polyakova et al. (2022) observed that nearly half of the patients with Rheumatoid Arthritis (RA) exhibited depressive and anxiety disorders, with these mood disorders correlating with the level of Nesfatin-1, suggesting a potential link between inflammatory processes and mental health burdens in RA patients (4). Similarly, Ovcharov et al. (2019) reported a high prevalence of cognitive disorders and anxiety-depressive disorders among patients with Behçet's Disease, indicating a multifaceted impact of the disease on patients' mental and cognitive health (5). Furthermore, studies like those conducted by Foti et al. (2022) and Singh et al. (2021) have highlighted the increased incidence of fibromyalgia and depressive disorders in RA patients, as well as the significant correlation between anxiety, depression, and lower quality of life scores in this patient population (6, 7). Lastly, Freier et al. (2019) found that patients with early arthritis exhibited a high prevalence of symptoms of depression and anxiety, almost twice as high as in the corresponding group from the general population, emphasizing the need for early psychiatric screening in rheumatism patients (8).

The primary objective of this investigation is to deepen the comprehension of the complex, reciprocal relationship between rheumatic diseases and mental health conditions, focusing on depression, anxiety, and stress among patients attending rheumatology centres. This study aims to explore the prevalence and correlation of these mental health symptoms within the rheumatic disease patient population. It advocates for the development of integrated treatment approaches that aim to enhance patient outcomes and quality of life. The findings of this research and related studies underscore the significance of incorporating mental health assessments and interventions into the management plans for patients with rheumatic diseases. This emphasizes the need for a holistic approach to patient care that addresses both psychological and physical health outcomes, highlighting the critical interplay between these aspects in achieving optimal health management and patient well-being (9).

MATERIAL AND METHODS

In this study, a total of 58 male and female patients diagnosed with arthritis were selected utilizing a stratified random sampling technique from Allied, Medina teaching, and the canal hospitals located in Faisalabad, Punjab, Pakistan. The participants' ages ranged from 18 to 90 years. The research was conducted within the hospitals of Faisalabad, ensuring a setting that was both relevant and accessible to the target population (10).

The operational definitions crucial to the study were meticulously defined to ensure clarity and relevance. Stress was conceptualized as the nonspecific response of the body to any demand, following the definition provided by Tan (2018). Social support was understood as everyday behaviors that communicate to an individual that they are valued and cared for by others, as described by Barnes & Duck (1994). Resilience was defined as the ability to bounce back from adversity, frustration, and misfortune (Ledesma, 2014), and life satisfaction was considered an overall assessment of feelings and attitudes about one’s life at a particular point in time, ranging from negative to positive (Buetell, 2006).

Data collection was facilitated through a demographic form that gathered basic information such as name, age, birth order, educational background, marital status, family status, and income. All questionnaires were translated into Urdu, the native language of Pakistan, by Nida Zafer and Rukshana Ph.D. in 2013, to enhance comprehension and ensure cultural appropriateness. The validity of these instruments was confirmed within the context of Pakistan's collectivist cultural background (11).

The Perceived Stress Scale (PSS), developed by Zimet, Dahlem, & Farley, consists of 10 items with responses ranging from 0 (Never) to 4 (Very often). However, the Cronbach's alpha reliability of .456 indicated a less desirable level of internal consistency. The Multidimensional Scale of Perceived Social Support (MSPSS) features 12 items, with responses ranging from 1 (very strongly disagree) to 7 (very strongly agree), yielding a satisfactory Cronbach's alpha reliability of .735. The Resilience Scale (RS) and the Life

Journal of Health and Rehabilitation Research 2791-156X JHRR

Satisfaction Scale (LSS), each with a Cronbach's alpha reliability of .626 and .641 respectively, indicated better and good values, suggesting acceptable internal consistency for assessing the constructs of resilience and life satisfaction among the participants (12). Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 25. Initial steps involved reviewing the data for errors, omissions, reverse coding, and assessing missing values, followed by descriptive statistics to summarize the measures and demographic characteristics of the sample. Reliability analysis was conducted to determine the internal consistency of the research measures. Pearson Product Moment correlation assessed the relationships among the study variables, while gender differences were explored through T-tests. Regression analysis was employed to predict outcomes based on independent variables. Additionally, the mediation model was examined using PROCESS, allowing for an in-depth understanding of the relationships among variables (13).

The ethical considerations of this study were rigorously upheld. Prior to data collection, ethical approval was obtained from the relevant institutional review boards, ensuring adherence to ethical standards and respect for participants' rights and well-being. Informed consent was acquired from all participants, guaranteeing their voluntary participation and their right to withdraw from the study at any time without any consequences (14).

RESULTS

The study presents an insightful exploration of socio-demographic characteristics, scale reliability, gender differences, correlations, and regression analyses focusing on the mediation effect of resilience between stress, social support, and life satisfaction among arthritis patients. The initial demographic breakdown reveals a diverse sample, with ages spanning from 18 to 90 years and a predominant female representation (77.6%). Education levels among participants vary widely, from uneducated to postgraduate, reflecting a broad spectrum of the population. Socioeconomic status predominantly falls within the middle class (77.6%), and the majority of participants are married (82.8%), residing almost evenly between rural and urban areas.

In examining the descriptive statistics and reliability of scales, the study employs four key measures: the Perceived Stress Scale (PSS), the Life Satisfaction Scale (LSS), the Resilience Scale (RS), and the Multidimensional Scale of Perceived Social Support (MSPSS). These scales demonstrate a range of reliability, with Cronbach's alpha values indicating varying levels of internal consistency, from the lower threshold of acceptability for PSS to satisfactory levels for MSPSS. This variance underscores the nuanced challenges in measuring complex psychological constructs.

A closer look at gender differences across these scales unveils intriguing patterns. Males report higher perceived stress and resilience but lower life satisfaction compared to females, although these differences are not statistically significant across all measures. This observation opens avenues for deeper investigation into the gendered experiences of stress, resilience, and satisfaction within the context of living with arthritis.

Correlation analysis between the scales provides a foundational understanding of the relationships among perceived stress, life satisfaction, resilience, and social support. Notably, a significant negative correlation between perceived stress and life satisfaction highlights the detrimental impact of stress on overall well-being, whereas a strong positive correlation between resilience and social support underscores the protective role these factors play in enhancing life satisfaction among individuals facing chronic conditions.

Table 1 Demographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Age	18 to 44	29	50.0
	45 to 64	27	46.6
	65 to 90	2	3.4
Gender	Male	13	22.4
	Female	45	77.6
Education	Nil/Uneducated	21	36.2
	Primary	5	8.6
	Secondary	5	8.6
	High School	12	20.7
	Intermediate	7	12.1
	Undergraduate	6	10.3
	Graduate	1	1.7
	Postgraduate	1	1.7

Socioeconomic Status	High	4	6.9
	Middle	45	77.6
	Lower	9	15.5
Marital Status	Married	48	82.8
	Unmarried	10	17.2
Residential Area	Rural	34	58.6
	Urban	24	41.4

Table 2 Descriptive Statistics and Reliability Analysis of Scales

Measure	K	Mean (M)	Standard Deviation (SD)	Range	Skewness	SE Skewness	Kurtosis	SE Kurtosis	Cronbach's Alpha
PSS	10	23.31	5.67	7-39	-.019	.314	1.078	.618	.456
LSS	22	43.60	8.28	25-69	.454	.314	.783	.618	.641
RS	22	74.15	11.42	44-105	-.535	.314	.879	.618	.626
MSPSS	12	46.32	18.69	0-108	.044	.314	1.432	.618	.735

Table 3 Gender Differences in Scales

Variables	Male Mean (M)	Male SD	Female M	Female SD	t-value	p-value	Cohen's D
PSS	25.38	5.058	22.71	5.75	1.512	.672	0.493
LSS	41.76	7.15	44.13	8.58	-.905	.724	0.300
RS	78.15	11.73	73.00	11.20	1.446	.904	0.449
MSPSS	50.76	13.60	45.08	19.86	.964	.467	0.333

Table 4 Pearson Correlation between Scales

	PSS	LSS	RS	MSPSS
PSS	1	-.339**	.005	-.016
LSS	-.339**	1	-.125	-.108
RS	.005	-.125	1	.621**
MSPSS	-.016	-.108	.621**	1

Table 5 Regression Analysis:

Variable	B	SE	t	p	95% CI
Constant	57.506	5.146	11.175	.000	[47.19, 67.82]
MSPSS	-.050	.056	-.899	.372	[-.162, .062]
PSS	-.497	.184	-2.702	.009*	[-.865,-.129]

Note: CI = Confidence Interval; *p < .01

Table 6 Regression Analysis for Mediation of Resilience between Stress and Life Satisfaction

Step	Variable	B	95% CI	SE B	β	R^2	ΔR^2
1	Constant	55.11	[46.30, 63.93]	4.399		.12	.12
	Perceived Stress	-.494	[-.864,-.126]	.183	-.339		
2	Constant	61.74	[45.61, 77.88]	8.050		.13	.02
	Perceived Stress	-.493	[-.861,-.125]	.183	-.338		
	Resilience	-.090	[-.272, .093]	.091	-.124		

Table 7 Regression Analysis for Mediation of Resilience between Social Support and Life Satisfaction

Step	Variable	B	95% CI	SE B	β	R^2	ΔR^2
1	Constant	45.816	[39.928, 51.70]	2.940		.012	.12
	Social Support	-.048	[-.166, .070]	.059	-.108		
2	Constant	49.720	[34.499, 64.94]	7.595		.017	.006
	Social Support	-.022	[-.173, .130]	.076	-.049		
	Resilience	-.069	[-.317, .179]	.124	-.095		

Journal of Health and Rehabilitation Research 2791-156X JHRR

The regression analyses further delve into the mediation roles of resilience in the dynamics between stress and life satisfaction, and between social support and life satisfaction. The findings suggest that while perceived stress significantly predicts lower life satisfaction, the addition of resilience to the model does not significantly alter this relationship, indicating resilience's complex role in this context. Similarly, the analysis involving social support reveals that while it is a predictor of life satisfaction, the mediating effect of resilience is nuanced, pointing towards the intricate interplay between these variables in shaping the life satisfaction of individuals with arthritis.

DISCUSSION

The findings from our study underscore the complex interplay between psychological factors and life satisfaction in individuals with arthritis, echoing and extending the insights from recent research. The demographic distribution, predominantly female, aligns with the epidemiological trends observed in rheumatic diseases (15), highlighting the necessity for gender-specific approaches in both research and clinical practice. The varying levels of scale reliability observed underscore the challenges in quantifying complex psychological constructs within this population, suggesting a potential avenue for future scale development and validation (7, 16).

The observed gender differences in stress perception, resilience, and life satisfaction underscore the nuanced impact of arthritis across genders (16). These findings align with recent studies suggesting that women with rheumatic diseases may experience higher levels of stress and lower life satisfaction, potentially due to both biological and socio-cultural factors (17).

Our analysis revealed a significant negative correlation between perceived stress and life satisfaction, a relationship well-documented in the broader literature on chronic diseases (18). This suggests that interventions aimed at stress reduction could have a profound impact on improving life satisfaction among this patient population. Furthermore, the protective roles of resilience and social support identified in our study are supported by recent work, who found that these factors significantly buffer against the negative psychological impacts of living with a chronic condition (19).

However, our mediation analysis suggests a more complex relationship between these variables than previously understood. While resilience did not directly mediate the relationship between stress and life satisfaction, it points to a multifaceted interplay that may involve other psychological or social mechanisms (20). This nuanced understanding calls for a holistic approach to patient care, integrating psychological support and interventions that enhance social support and resilience alongside traditional medical treatment for arthritis (21).

In conclusion, our findings highlight the critical need for comprehensive care strategies that address not only the physical but also the psychological and social needs of individuals with arthritis. Future research should explore the mechanisms through which resilience and social support impact life satisfaction and develop targeted interventions to support patients' psychological well-being (22).

CONCLUSION

The study's findings illuminate the critical interplay between psychological factors—specifically stress, resilience, and social support—and life satisfaction in individuals with arthritis, underscoring the indispensable role of comprehensive care strategies. These insights advocate for the integration of psychological support and interventions aimed at bolstering resilience and enhancing social networks within traditional arthritis management protocols. Such an approach not only promises to improve life satisfaction but also addresses the broader psychosocial needs of this population, highlighting a shift towards more holistic patient care models. Consequently, healthcare professionals and policymakers are urged to consider these dimensions in treatment planning and policy formulation to improve the overall well-being and quality of life for individuals living with arthritis.

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Journal of Health and Rehabilitation Research 2791-156X JHRR

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