

A Study of Stress, Anxiety and Depression among Patients with Chronic Back Pain: A Cross-Sectional Analysis

Vanam Harshavardhan, Kishore Kumar Rokkam*, P.S.Murthy and Vishnu Prasad Pottipadu

Department of Psychiatry, Santhiram Medical College and General Hospital, Nandyal, India

Abstract

Objectives: To study the prevalence of stress, depression and anxiety in patients with chronic back pain and to correlate with socio demographic variables.

Methods: A total of 60 patients with chronic back pain attending Orthopaedic Out Patient's Department (OPD) as well as admitted in the Orthopaedic ward for investigation or therapeutic purposes in Santhiram General Hospital during the study period were selected by purposive sampling. These patients were assessed by applying Depression Anxiety Stress Scales (DASS21). Proportion was compared using chi-square test, scores of scales were compared using the Mann-Whitney test and Kruskal-Wallis's test followed by Dunn's post-hoc multiple comparisons. Statistical data analysis was done by using IBM SPSS version 25.0. A p value of less than 0.05 was considered statistically significant.

Results: In this study 58.3% of patients had moderate depression, 28.3% had mild depression. 43.3% of patients had moderate anxiety and 38.3% of patients had severe anxiety and 40.0% of patients had stress respectively. There was statistically significant association with gender, duration of backpain for depression and anxiety.

Conclusions: Patients with chronic back pain had a moderate frequency of depression, and moderate anxiety.

Key words: Depression • Anxiety • Chronic • Stress • OPD

Introduction

Chronic back pain is a common health problem resulting in significant personal, social, and occupational impairment; role disability; and health care utilization [1]. Reduced quality of life is common among patients suffering from chronic low back pain [2]. Anxiety and depression are the two most common forms of psychological disturbances seen in patients with chronic backache [3]. The combination depression, anxiety, and pain is associated with worse clinical outcomes than each condition alone [4].

Back Pain and psychosocial stress are known risk factors for both absenteeism and presenteeism [5,6]. A significant reciprocal relationship between depressive symptoms and pain exists. Chronic pain is associated with a greater risk of developing or having depression [7], and epidemiologic studies indicate that up to 75% of patients with depression also report pain [8].

There are very less studies in patients with chronic back pain having a relationship with underlying/comorbidity of stress, anxiety or depression especially in rural/semi urban location like Nandyal. Hence the present study was planned in such semi urban setting.

The main objective of the study is to study the prevalence of stress, depression and anxiety in patients with chronic back pain and to correlate with Socio demographic variables, and duration of back pain.

Materials and Methods

Sources of data

Patients having Chronic Back pain for a duration of minimum 12 weeks or longer will be taken into this study, both who are attending Orthopaedic

OPDs as well as admitted in the Orthopaedic ward for investigation or therapeutic purposes in orthopaedic department santhiram medical college and general hospital nandyal.

Study design: It is a hospital based cross-sectional descriptive study.

Study sample size: 60

Study duration: March 2021 to August 2021

Place of sample collection: Orthopaedic OPD/IPD in Santhiram General Hospital.

Inclusion criteria

- Patients of either gender.
- Patients having Chronic Back pain for a duration of 12 weeks or longer.
- Patients who are willing to participate and give written informed consent.

Exclusion criteria

- Patients who are not willing to participate and give written informed consent.
- Patients with diagnosis of mental retardation or patients in delirious/severe psychotic states requiring intense treatment.

Methodology: Data was collected by face-to-face interview by using semi structured sociodemographic questionnaire. A consecutive sample of 60 patients with chronic back pain attending Orthopaedic OPDs as well as admitted in the Orthopaedic ward for investigation or therapeutic purposes in Santhiram General Hospital during the study period will be selected by purposive sampling. These patients were assessed by applying Depression Anxiety Stress Scales (DASS21). Socio-Demographic data was taken

*Corresponding Author: Kishore Kumar Rokkam, Department of Psychiatry, Santhiram Medical College and General Hospital, Nandyal, India; Email: kishorendl@gmail.com

Copyright: © 2023 Harshavardhan V, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received: 22-Dec-2022, Manuscript No. CSRP-23-84475; **Editor assigned:** 26-Dec-2022, PreQC No. CSRP-23-84475 (PQ); **Reviewed:** 09-Jan-2023, QC No CSRP-23-84475; **Revised:** 17-Jan-2023, Manuscript No. CSRP-23-84475(R); **Published:** 24-Jan-2023, DOI: 10.3371/CSRP.HVCR.012423.

using semi-structured proforma. The subjects will be explained about the nature of the study and written informed consent will be obtained before participating in the study.

Data analysis

The data were pooled using MS excel 2019 version and statistically analysed using IBM SPSS 25.0 Software. Proportion was compared using chi-square test, scores of scales were compared using the Mann-Whitney test and Kruskal-Wallis's test followed by Dunn's post-hoc multiple comparisons. A p value of less than 0.05 was considered statistically significant.

Results

The current study analyzed data of 60 patients who are suffering from chronic backpain.

It can be interpreted from Table 1, that majority (70%) of the patients are male. Most of the patients (51.7%) are overweight. In the present study, majority of the patients (55%) belong to the age group 41-60 yrs, most of the patients are graduates (35%). Majority of the patients (43.3%) hailed from rural areas; the duration of back pain in most of the patients (45%) was between 1-3 years.

Table 1. Sociodemographic features.

		Count	Percentage
Gender	Male	42	70.00%
	Female	18	30.00%
BMI	Normal	22	36.70%
	Obese	5	8.30%
	Overweight	31	51.70%
	Underweight	2	3.30%
Age	21-40	14	23%
	41-60	33	55%
	>60	13	22%
Employment	House wife	1	1.70%
	Labourer	25	41.70%
	Sitting Job	26	43.30%
	Standing job	8	13.30%
Area of domicile	Rural	26	43.30%
	Semi-Urban	19	31.70%
	Urban	15	25.00%
Duration of back pain (Years)	<1 Year	13	21.70%
	1-3 Years	27	45.00%
	4-6 Years	15	25.00%
	>6 Years	5	8.30%

In the present study, the majority of the sample (55.0%) had daily travelling time of less than 1 hour, there was no previous h/o psychiatric illness (Table 2) and also there was no stress preceding onset of low backache. In the current cross-sectional study, majority of the patients (55%) had no postural variation; most of the patients (86.7%) had no diurnal variation too. There was no radiating pain in majority of the patients (65%).

In the present study, most of the patients (60%) had moderate pain followed by mild and severe. Most of the patients (90%) had no h/o injury/fall before onset of LBA. Majority of the patients (53.3%) had no h/o alcohol and drug abuse.

Table 2. Demographic parameters of patients.

		Count	Percentage
Daily travelling time (Hrs)	<1 Hour	33	55.00%
	1-2 Hours	20	33.30%
	3-4 Hours	7	11.70%
Any previous psychiatric illness	No	60	100.00%
Any stressor preceding onset of low backache	No	60	100.00%
Postural variation	No	33	55.00%
	Yes	27	45.00%
Diurnal variation	No	52	86.70%
	Yes	8	13.30%
Radiating pain	No	39	65.00%
	Yes	21	35.00%
Severity of pain	Mild	14	23.30%
	Moderate	36	60.00%
	Severe	10	16.70%
History of injury/fall before onset of LBA	No	54	90.00%
	Yes	6	10.00%
History of alcohol and drug abuse	No	32	53.30%
	Yes	28	46.70%

In the current cross-sectional study, Figure 1 shows the prevalence of depression, stress and anxiety. In the study sample of 60 patients, majority of them (58.30%) had moderate depression. Most of the patients experienced moderate anxiety (43.3%) majority (60%) had no stress, the remaining 40% had mild stress.

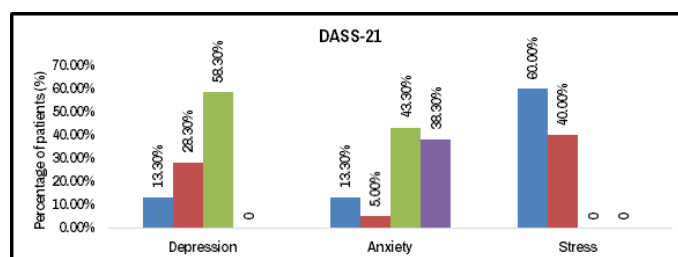


Figure 1. Prevalence of depression, anxiety, stress.

Note: (■) Normal, (■) Mild, (■) Moderate, (■) Severe

From Table 3, we can understand the association between gender and depression, anxiety and stress. Among the 42 male patients, most of them (57%) had moderate depression, and among 18 female patients, most of the female patients (61%) also experienced moderate depression. Of 42 males, moderate and severe anxiety was seen in 86% of the patients, among 18 females, majority of them had moderate anxiety (44%). Most (62%) of the male patients experienced no stress followed by mild stress in 38%. among 18 females, 56% had no stress, followed by mild stress in 44% females.

Table 3. Association between gender and depression, anxiety and stress.

Variable		Gender				P Value
		Male (42)		Female (18)		
Depression	Normal	5	12%	3	17%	0.746
	Mild	13	31%	4	22%	
	Moderate	24	57%	11	61%	
	Severe	0	0%	0	0%	
Anxiety	Normal	6	14%	2	12%	0.049
	Mild	0	0.00%	3	17%	
	Moderate	18	43%	8	44%	
	Severe	18	43%	5	27%	
Stress	Normal	26	62%	10	56%	0.645
	Mild	16	38%	8	44%	
	Moderate	0	0%	0	0%	
	Severe	0	0%	0	0%	

From Table 3 it can be inferred that the association between anxiety and gender was statistically significant with a p-value of 0.049. There was no significant association between gender, depression and stress.

Table 4 shows the association between duration of back pain and depression, anxiety and stress. Most of the patients (27 of 60) had low back pain from 1-3 years with majority of them having moderate anxiety. Among

these 27 patients, 58% had moderate depression and 63% had moderate anxiety. Majority of the patients in the study sample had no stress though they were having back pain for >6 yr. The association between duration of back pain and depression, and anxiety was statistically significant. There was no association of duration of LBA and stress.

Table 5 shows the association between BMI and Depression, Anxiety and stress. Majority (31 of 60) were overweight, among which (61%) of the patients had moderate depression, 52% had severe anxiety. Among the patients with overweight BMI (31), 71% had no stress, followed by mild stress in 29%. The association between BMI, depression, anxiety and stress was not statistically significant.

In the present hospital based descriptive study, Table 6 shows the association between daily travelling time with depression, anxiety and stress. Among 60 patients, 33 patients had a daily travelling duration of <1 hr of which moderate depression was seen in most of the patients (64%) and 45% among those who travelled for 1-2 hrs, 71% in those who travelled for >3 yrs. The association between daily travelling time and depression was not statistically significant with a p-value of 0.465.

Majority of the patients experienced severe anxiety (40%) in those who travelled <1 hr. most of the patients had moderate anxiety in those who travelled for 1-2 hr (mod-anxiety 50%), and in those who travelled for >3 hrs (mod-anxiety 57%). The association between daily travelling times, anxiety was not statistically significant with a p-value of 0.797.

Most of the patients had no stress, irrespective of daily travelling time, followed by mild stress in 45% of the patients who travelled for <1 hr, 35% of the patients had mild stress who travelled for 1-2 hrs and in those who travelled for >3 hrs, 28% had mild stress. The association between daily travelling time and stress was not statistically significant with a p-value of 0.607.

Table 4. Association between duration of backpain and depression, anxiety and stress.

Variable		Duration of back pain (Years)								P Value
		<1yr (13)		1-3yrs (27)		4-6yrs (15)		>6yrs (5)		
Depression	Normal	6	46%	0	0.00%	1	7%	1	20%	0.003
	Mild	0	0%	11	41%	5	33%	1	20%	
	Moderate	7	54%	16	59%	9	60%	3	60%	
	Severe	0	0%	0	0%	0	0%	0	0%	
Anxiety	Normal	5	38%	2	7%	0	0%	1	20%	0.013
	Mild	1	8%	1	4%	1	7%	0	0%	
	Moderate	4	31%	17	63%	5	33%	0	0%	
	Severe	3	23%	7	26%	9	60%	4	80%	
Stress	Normal	10	77%	17	63%	6	40%	3	60%	0.246
	Mild	3	23%	10	37%	9	60%	2	40%	
	Moderate	0	0%	0	0%	0	0%	0	0%	
	Severe	0	0%	0	0%	0	0%	0	0%	

Table 5. Association between body mass index and depression, anxiety and stress.

Variable		Body mass index								P Value
		Under weight (2)		Normal (26)		Over weight (31)		Obese (5)		
Depression	Normal	0	0%	5	23%	2	7%	1	7%	0.558
	Mild	1	50%	4	18%	10	32%	2	32%	
	Moderate	1	50%	13	59%	19	61%	2	61%	
	Severe	0	0%	0	0%	0	0%	0	0%	
Anxiety	Normal	0	0%	3	14%	3	10%	2	40%	0.349
	Mild	0	0%	2	9%	1	3%	0	0%	
	Moderate	2	100%	11	50%	11	35%	2	40%	
	Severe	0	0%	6	27%	16	52%	1	20%	
Stress	Normal	1	50%	11	50%	22	71%	2	40%	0.336
	Mild	1	50%	11	50%	9	29%	3	60%	
	Moderate	0	0%	0	0%	0	0%	0	0%	
	Severe	0	0%	0	0%	0	0%	0	0%	

Table 6. Association between daily travelling time and depression, anxiety and stress.

Variable		Daily travelling time (Hrs)						P Value
		<1 Hr (33)		1-2 Hrs (20)		>3 Hrs (7)		
Depression	Normal	5	15%	3	15%	0	0%	0.465
	Mild	7	21%	8	40%	2	29%	
	Moderate	21	64%	9	45%	5	71%	
	Severe	0	0%	0	0%	0	0%	
Anxiety	Normal	6	18%	2	10%	0	0%	0.797
	Mild	2	6%	1	5%	0	0%	
	Moderate	12	36%	10	50%	4	57%	
	Severe	13	40%	7	35%	3	43%	
Stress	Normal	18	55%	13	65%	5	72%	0.607
	Mild	15	45%	7	35%	2	28%	
	Moderate	0	0%	0	0%	0	0%	
	Severe	0	0%	0	0%	0	0%	

Discussion

The present study was done to estimate the prevalence of stress, depression and anxiety in patients with chronic back pain. The overall prevalence of psychiatric disorders in this study was 68%, where the prevalence of depression was 86%, anxiety was 78%, stress was 40%. an Indian study by P. Satya, et al. in 2015 the prevalence of depression was 54%, anxiety was 72%, stress was 52%, the overall prevalence of psychiatric disorders was 59% which was lesser than the current study.

In the study done by Mir Mahmood Asrar et al in 2021 the prevalence of depression was 54%, anxiety was 57%, stress was 46% ,the overall prevalence of psychiatric disorders was 59% which was lesser than the current study.

Conclusion

As in this study there is significant depression, stress, and anxiety associated with chronic low back pain. Screening for symptoms of depression, anxiety and stress during the initial consultation is important because they are an indicator of poor prognosis. Consultation liaison services with orthopedic and pain clinics should be improved creating awareness in inter-departments.

Limitations

Small sample size. Patients with other general medical conditions are not ruled out in this study. The aetiology of psychopathology is not taken

into consideration.

Conflict of Interest

There are no conflicts of interest.

Financial Support and Sponsorship

Nil

Acknowledgement

We are thankful to our Head of department, principal, superintendent, and member secretary of the institutional ethics committee. We are thankful to all patients participated in this study for their kind cooperation.

References

1. Van't Land, Hedda, Jacqueline Verdurmen, Margreet ten Have, and Saskia van Dorsselaer, et al. "The Association between Chronic Back Pain and Psychiatric Disorders; Results from a Longitudinal Population-based Study." *Anxiety and related disorders* 27(2011): 247-256.
2. Bentsen, Signe Berit, Berit Rokne Hanestad, Tone Rustøen, and Astrid Klopstad Wahl. "Quality of Life in Chronic Low Back Pain Patients Treated with Instrumented Fusion." *J Clin Nurs* 17 (2008): 2061-2069.
3. Sagheer, Muhammad Amir, Muhammad Farhan Khan, and Salman Sharif. "Association between Chronic Low Back Pain, Anxiety and Depression in Patients at a Tertiary Care Centre." *J Pak Med Assoc* 63 (2013): 688-690.
4. Castro, Martha, Durval Kraychete, Carla Daltro, and Josiane Lopes, et al. "Comorbid Anxiety and Depression Disorders in Patients with Chronic Pain." *Arq Neuropsiquiatr* 67 (2009): 982-985.
5. Burton, Wayne N, Glenn Pransky, Daniel J Conti, and Chin-Yu Chen, et al. "The Association of Medical Conditions and Presenteeism." *J Occup Environ Med* 46(2004): S38-S45.
6. Leineweber, Constanze, Hugo Westerlund, Jan Hagberg, and Pia Svedberg, et al. "Sickness Presenteeism is more than an Alternative to Sickness Absence: Results from the Population-based SLOSH Study." *Int Arch Occup Environ Health* 85 (2012): 905-914.
7. Lépine, Jean-Pierre, and Mike Briley. "The Epidemiology of Pain in Depression." *Hum Psychopharmacol* 19 (2004): S3-S7.
8. Agüera-Ortiz, L, I Failde, J A Mico, and J Cervilla, et al. "Pain as a Symptom of Depression: Prevalence and Clinical Correlates in Patients Attending Psychiatric Clinics." *J Affect Disord* 130 (2011): 106-112.

How to cite this article: Harshavardhan, Vanam, Kishore Kumar Rokkam, P.S. Murthy and Vishnu Prasad Pottipadu. "A Study of Stress, Anxiety and Depression among Patients with Chronic Back Pain: A Cross-Sectional Analysis." *Clin Schizophr Relat Psychoses* 17 (2023). Doi: 10.3371/CSRP.HVKR.012423.