

Stress, anxiety, and depression among patients admitted to orthopedic wards in two public hospitals of Peshawar

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ABSTRACT

Introduction: Orthopedic Trauma exerts a broad influence on physical health. Most patients with damages sustained from orthopedic accidents recover but are left with many undesirable health consequences. It mainly affects the mental status of patients, their relatives, and careers. The post-injury mental health problems include hallucinations, nervousness, sleep and eating disorders, and different grades of anxiety, irritation, and sadness.

Objectives: To assess the levels of anxiety, stress, and depression in patients having fractures admitted to orthopedic wards and their association with selected demographic variables.

Materials & Methods: A cross-sectional survey was conducted from September 01, 2021, to November 30, 2021, on 200 patients admitted for fractures to orthopedic wards of two public sector hospitals of Peshawar using convenient sampling technique. Data were collected through DASS21 validated questionnaire after informed consent from patients, and analyzed for descriptive statistics.

Results: Of the 200 patients with fractures, 55.5% were suffering from stress, 39.5% were suffering from anxiety, and other than that 58.5% were suffering from depression. Stress had significant association with educational status, while anxiety had significant with gender and educational status. Depression had no significant association with all the selected variables.

Conclusion: Post traumatic physical illness in patients with fractures contributes substantially to mental health issues such as stress, anxiety, and depression.

Keywords: Orthopedics; Fractures; Depression; Anxiety; Stress.

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INTRODUCTION

Orthopedic injury as an injury to part of the bony structure such as bones, joints, or ligaments.¹ Fracture to bone is a health condition, in which there is a breakdown in the function of bones. A fracture to bone can be the result of a direct blow to the bone, a bending force, medical condition that disturbs the strength of the bone or weakens the bones such as osteoporosis, or bone cancer, so in that condition the fractures are known as pathologic. Hence the main reasons of fracture can be accidental or pathological, with 80% of patients admitted in the wards have injuries due to trauma.² Generally orthopedic wards show large statistics of patients who have experienced accidental injury events such as traffic accidents, and falls from heights.³

Globally, trauma to bone is responsible for 16% of the total burden of disease,⁴ this classifies it as the foremost cause of bone diseases. Many persons with bone injuries live from their accidents but acquire a number of undesirable health consequences.⁵ Orthopedic trauma effects a complete influence on survivors' physical as well as psychological problems which delays patients' recovery. Moreover, traumatic injury affects the mental status of patients and their family.¹ The patients frequently have strong mental post-trauma stress reactions, including uneasiness, nightmares, eating and sleep disorders, and varying degrees of anger, fear, depression and anxiety.^{6,7} It was revealed from earlier studies that anxiety was the most common among mental stress reactions,⁸ and the level of anxiety was positively associated with the level of depression.⁹ Stress, anxiety, and unhappiness place the patient at risk for increased chances of suicide and poor health status. So, the quality of life will be compromised and recovery delayed.¹⁰ A few studies were conducted on assessment of the level of stress, anxiety, and depression among patients having fractures admitted to orthopedic wards and their links with other variables.¹¹⁻¹⁵ But there was no published literature in which stress, anxiety and depression were assessed in combination. Hence, depression is communal and one might suppose a high rate of depression associated with musculoskeletal issues

and physical injury presenting at orthopedic clinics, with females more likely to become depressed than males.¹⁶

According to a research study, the ratio of reopening and post-operative complications are increased due to stress and anxiety among patients admitted to surgical wards, especially females.^{17,18} Another study included 100 patients (55 males, 45 females; mean age: 46.8 years; range: 18 to 83 years) whose surgical procedure was repeated due to orthopedic injury and treatment was continued for 1 year; depression was found in 24% of and anxiety disorder in 29%.¹⁹

MATERIALS & METHODS

The present hospital-based cross-sectional descriptive study was conducted from 1st September 2021 till 30 November 2021 in two public sector hospitals of Peshawar, Khyber Pakhtunkhwa, among patients of both genders having fractures admitted to Orthopedic wards. Data were collected from patients through adapted questionnaire of stress anxiety and depression (DASS21) after obtaining their informed consent. Non probability convenience sampling technique was used to include 200 patients, 100 from each hospital, for the study. Data were analyzed for descriptive statistics.

RESULTS

Demographic data of subjects is shown in Table 1. Most patients (86, 43%) belonged to the age group of >35 years; similarly male patients (136) represented 68% of the sample.

Table 1: Distribution of patients according to their demographic data (n=200).

Demographic Variables	Frequency	Percentage
Age Groups (Years)		
15-25	70	35.0
26-35	44	22.0
>35	86	43.0
Gender		
Male	136	68.0
Female	64	32.0
Total	200	100

Table 2 shows the mean score of stress, anxiety and depression of the patients having fractures admitted to orthopedic wards. Mean score for stress is 16.47 with a standard deviation of 8.55, and mean score for anxiety is 7.20 with a standard deviation of 6.15, while mean depression score is 12.33 with standard deviation of 7.77 as shown in the table.

Table 2: Mean and Standard Deviation of the Stress, Anxiety and Depression Scores (n=200).

Values	Stress Score	Anxiety Score	Depression Score
Mean	16.47	7.20	12.33
S. D.	8.55	6.15	7.77
Range	56.00	32.00	34.00
Minimum	0.00	0.00	0.00
Maximum	56.00	32.00	34.00

Among patients (Table 3) with fractures, 44.5% were normal, while 55.5% were suffering from stress among which 38.5% had mild to modest stress, 15% had severe stress and 2% had severe stress as shown in the Table 3.

Table 3: Level of Stress among sample (n=200).

Stress Categories	Frequency	Percent
Normal	89	44.5
Mild	38	19.0
Moderate	39	19.5
Severe	30	15.0
Extremely Severe	4	2.0
Total	200	100.0

Among study participants 59.5% were normal, while 39.5% were suffering from anxiety among which 30% had mild to moderate anxiety, 5% had severe anxiety and 5.5% had extremely severe anxiety as shown below in the table 4.

Table 4: Level of anxiety among study participants (n=200).

Anxiety Categories	Frequency	Percent
Normal	119	59.5
Mild	23	11.5
Moderate	37	18.5
Severe	10	5.0
Extremely Severe	11	5.5
Total	200	100.0

DISCUSSION

In this study DASS-21 items questionnaire was used for data collection. A total of 200 patients responded to the questionnaire. Among patients with fractures, 55.5% were suffering from stress, 39.5% were suffering from anxiety, and 58.5% were suffering from depression. These results are relatively consistent with the result of another study¹⁹ in which depression was diagnosed in 24% of patients and anxiety in 29%. The results are also supported by another study²⁰ in which 48.7% patients were suffering from anxiety and depression. As the study exposed occurrence of anxiety to be 39.5%, this was also in line with studies conducted at Jordan (37%)²² among lower limb amputation patients and Brazil (44%)²³ among orthopedic patients. However, the study finding on prevalence of anxiety was higher than studies conducted at US 16%²⁴ and another study at US 34%²⁵ and UK 30.36%²⁵.

This study assessed association between stress level and different socio-demographic variables, only educational status has significant association with stress level and there was no significant association between level of stress & selected demographic variables except educational status. The study also assessed association between anxiety level and different socio-demographic variables which revealed that gender and educational status has significant association with anxiety level and there was no significant association of anxiety level with age, marital status and socio-economic status. This is contrary to the finding of another study which revealed that there was no significant association between level of anxiety & gender and educational status.²⁴ As the study revealed that gender and educational status has significant association with anxiety level

which is consistent with the results of another study which showed significant association of anxiety with gender & educational status.²⁵

The study revealed that there was no significant association of depression level with age, gender, marital status, educational status and socio-economic status. This is contrary to the finding of another study which revealed that incidence of depression in our general population come in the range from 25 to 66 % among females, which is more than in males (10 to 25 %).¹⁹ This is also contrary to the result of another study which revealed significant association of depression with age, gender, marital status, educational status and socio-economic status.

LIMITATIONS

The research was carried out in orthopedic patients only, so the findings of this research are not generalizable to other patients.

CONCLUSION

The study suggests that clinicians working at orthopedic clinics and wards should give emphasis for patients' psychological state during evaluation especially for females to help diagnose stress, anxiety and depression in order to timely manage it.

RECOMMENDATIONS

Appropriate intervention in the form of medication or psychotherapies can be instituted so as to improve their long term outcomes both in terms of mental and physical recovery.

This study can serve as a foundation for replication in other settings; other researchers should conduct prospective cohort studies to investigate temporal relationship between socio-demographic variables and stress, anxiety, and depression.

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