

Study of depressive and anxiety symptoms in patients with orthopedic trauma

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Abstract

Background: Pain and injury along with significant socio-occupational dysfunction and loss of productivity until they recover has a significant psychological effect on patients. Many studies which attempted psychological evaluation following trauma have stressed the need for the same to detect morbidity early and plan interventions to improve long term outcomes

Methodology: 100 patients above 18 years presenting to orthopedic department are taken up into study using consecutive sampling after consent and administered Hospital Anxiety & Depression scale. Scores are tabulated and descriptive and correlational tests done.

Results: 78% of the participants were male and mean age of the sample was 41.9 years. 50% of the patients sustained injury in Road traffic accidents and rest 32% and 18% of them sustained injuries in domestic and industrial circumstances. Mean Anxiety & Depression scores were 10.9 and 11.9 respectively. With respect to duration since injury, Anxiety scores were negatively correlated ($r = -0.3$; $p = 0.026$) and Depressive scores were positively correlated ($r = 0.6$; $p < 0.00001$).

Discussion: 26% of patients had moderate – severe anxiety symptoms and 36% of the patients had moderate – severe depressive symptoms and 8% had both. Anxiety symptoms are found predominantly in the early phases but depressive symptoms are found in the later phases of acute orthopedic trauma.

Conclusion: If all post – traumatic patients are evaluated using HADS, their levels of anxiety and depression can be assessed and appropriate intervention can be instituted so as to improve their long term outcomes in terms of mental and physical recovery.

Keywords: Orthopedic trauma, HADS, Anxiety and depression

Introduction

Traumatic orthopedic injuries are common and occur in all ages regardless of culture and region. Pain is invariable symptom of the orthopedic trauma which has a significant psychological effect on patients. Injury produces a significant socio-occupational dysfunction and loss of productivity until they recover. Most studies have focused on the post traumatic stress disorder and acute stress reaction but very few studies also consider the more common depressive disorders and anxiety disorders.⁽¹⁾ When the criteria for all these above mentioned disorders as per WHO criteria or DSM criteria, many patients with some psychological disturbance may not fulfill full criteria for the above disorders but they continue to have depressive or anxiety symptoms clinically which may affect their long term and holistic recovery. Addressing psychological issues earlier in the course may also improve quality of life, additional costs for care especially mental health care costs, lessen burden on support systems, and improve productivity and progression of impairments to disabilities. Many studies which attempted psychological evaluation following trauma have stressed the need for the same to detect morbidity early and plan interventions to improve long term outcomes.^(1,2,3)

Materials and Methods

Study Hypothesis: Post traumatic orthopedic patients have high levels of depressive and anxiety symptoms

Aims and Objective: To identify depressive and anxiety symptoms in post-traumatic patients

Study Setting: Orthopedic Department of a Tertiary care General hospital

Study period: 6 months

Sampling method: Consecutive sampling

Sample Size: 100

Inclusion Criteria

1. Any patient aged above 18 years
2. Patients with a history of trauma resulting in fracture

Exclusion criteria

1. Duration of more than 6 weeks following trauma are excluded.
2. Present psychiatric disorder or ongoing treatment
3. Chronic ongoing or Terminal medical illness
4. Intellectual disability determined clinically

Socio-demographic and relevant clinical information is collected in a semi-structured proforma.

Patients are given HADS self-report scale after clear instructions.

The HADS is a 14-item self-report scale^(4,5) that consists of a depression and an anxiety scale, each with 7 items. The scale was designed to screen for mood disorders in general (non-psychiatric) medical outpatients. It is comprised of two subscales: Depression and Anxiety. It focuses on subjective disturbances of mood rather than physical signs, and aims at distinguishing depression from anxiety. Compared to other instruments scales, it focuses on

emotional aspects of anxiety disturbances, as opposed to somatic and cognitive symptoms.

The HADS is comprised of two sub scales, Depression and Anxiety. Each subscale has a score ranging from 0-21. Items are rated on a 4-point Likert-type scale ranging from 0 to 3, generating a scale range of 0 to 42 points, with higher scores representing greater symptom severity. The anxiety subscale has 3 items that refer to panic and 4 to generalized anxiety. Add the A questions to get a score for anxiety and the D questions for depression. Scores of 0-7 indicate normal levels of anxiety and depression; 8-10 indicate borderline abnormal anxiety and depression levels and 11-21 suggest abnormal levels of anxiety and depression.

Hung M et al has reported the satisfactory applicability of two factor structure of HADS in Orthopedic trauma patients.⁽⁶⁾

Data tabulated and statistical analysis done.

Results

A total of 141 patients during the study period were assessed and 100 consecutive patients who fulfilled inclusion criteria were enrolled in study. 78% were males and mean age of the sample was 41.9 years (± 14.95 years).

Table 1: Mode of injury in the study sample

| Total Score | Anxiety Score | Depression Score |
|---------------------|----------------------|----------------------|
| 22.1 (± 7.27) | 10.94 (± 4.11) | 11.96 (± 5.36) |

50% patients sustained injury in Road traffic accidents, 32% in domestic circumstances and 18% in industrial circumstances. Mean duration since trauma was 24 days (± 11.8 days).

Each of the patients was assessed with self-reported HADS and following was the scores.

T1. HADS Score in the sample

Table 2: Distribution of Moderate – Severe HADS scores (14 - 21) reported in study sample

| | Duration since Trauma | |
|-------------------|---------------------------------------|---------|
| | Pearson's Correlation Coefficient (r) | P Value |
| Anxiety Scores | -0.3 | 0.026 |
| Depression Scores | 0.6 | 0.000 |
| Total Score | 0.3 | 0.022 |

On applying Shapiro-Wilk's tests for normality, assuming normal distribution, Pearson's Correlation tests were run to find out correlation between duration since trauma and HADS scores.

T2. Correlation of HADS scores to duration of trauma

Depressive Scores are moderately correlated to the duration of trauma while anxiety scores are mildly but inversely correlated to the duration of trauma. This implies that anxiety levels are higher in the initial days of trauma while depressive scores tend to increase as the duration increases.

Discussion

This study primarily aims in determining anxiety and Depressive symptoms after fractures and includes patients with duration of trauma ranging from 1-45 days. This time duration has been termed as acute duration since injures in many studies. Many long term studies have included acute duration as first assessment and followed the patients in 12 weeks, 24 weeks and 1 year after injuries to determine long term outcome. Many of the studies which have assessed patients early after trauma have focused mainly on acute stress disorder, post-traumatic stress disorder and dissociative disorders while many have not focused on anxiety and depressive symptoms which occur in higher rates, though they may not fulfill for full criteria. O' Donnell et al, 2004,⁽²⁾ has noted in their assessment of initial prevalence rates, 17% of the participants had moderate to severe levels of anxiety (Score ≥ 19 Beck Anxiety Inventory) and 15% reported moderate to severe levels of depression (Score ≥ 19 on Beck Depression Inventory). In our study, which uses HADS, scores of 14-21 corresponds to moderate-severe symptoms in anxiety and depression related items. 26% of participants had scores between 14-21 in Anxiety, which means they had moderate to severe anxiety and 36% of participants had Depression scores in the range of 14-21. 8% of patients had both the scores in moderate to severe range. Depression scores are much higher in participants of this study than above mentioned study. Above study also reports about higher incidence of symptoms of acute stress disorder though they may not fulfill full criteria but they experience re-experiences and arousal especially in first week of trauma. These symptoms are generally reported in the anxiety domain of HADS in a general sense as HADS is not specific for any particular anxiety disorder. This finding supports the inverse correlation of severity of anxiety symptoms with duration since trauma in our study.

Conclusion

26% of patients in acute duration of orthopedic trauma i.e., within 45 days of injury had moderate – severe anxiety symptoms and 36% of the patients had moderate – severe depressive symptoms and 8% had both. Anxiety symptoms are found predominantly in the early phases but depressive symptoms are found in the later phases of acute orthopedic trauma.

If all post – traumatic patients are evaluated using HADS, their levels of anxiety and depression can be assessed and appropriate intervention in the form medication or psychotherapies can be instituted so as to improve their long term outcomes both in terms of mental and physical recovery.

References

1. Wiseman T, Foster K, Curtis K, "Mental health following traumatic physical injury: an integrative literature review" *Injury* (2013) 44(11),1383–90.
2. O' Donnell ML, Creamer M, Pattison P, Atkin C, "Psychiatric Morbidity Following Injury" *Am J Psychiatry* (2004) 161,507–514
3. Malik P, Garg R, Sidhu BS, Sharma KC, Gulia AD, "Psychiatric Morbidity in Post Traumatic Orthopedically Handicapped Patients" *Delhi Psychiatry Journal* (2012);15(1).
4. Zigmond, AS; Snaith, RP, "The hospital anxiety and depression scale" *Acta Psychiatrica Scandinavica*. (1983) 67(6),361–370.
5. Bjelland, I, "The validity of the Hospital Anxiety and Depression Scale. An updated literature review". *Journal of Psychosomatic Research* (2002) 52(2),69–77.
6. Hung M, Bounsanga J, Tang P, Chen W, Cheng C, "The Factor Structure of the Hospital Anxiety and Depression Scale in Orthopedic Trauma Patients" *J Clin Med Res*. (2015) 7(6),453-459.