

Original Research Article

Prevalence of psychiatric morbidity in orthopaedic inpatient: a hospital based cross-sectional study

Aswin Kumar Dawadi^{1*}, Shailendra Raj Adhikari², Anand Raj Regmi³

¹Department of Psychiatry, B. P. Koirala Institute of Health Sciences, Dharan, Province-1, Nepal

²Department of Psychiatry, ³Department of Orthopaedics, Chitwan Medical College Teaching Hospital, Chitwan, Bharatpur Province-3, Nepal

Received: 12 June 2023

Accepted: 01 September 2023

*Correspondence:

Dr. Aswin Kumar Dawadi,

E-mail: aswindawadi150@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Identification of a psychiatric problem should be a necessity part of treatment planning in orthopedic practice, and prompt referral for diagnosis and treatment should be made for better outcome. There have been very few studies in Nepal that has assessed the presence of psychiatric disorders in injured inpatients. The aim of the study was to find out the prevalence of psychiatric disorders in patients with injury admitted to the orthopedic ward of CMC teaching hospital.

Methods: The study was carried out among 150 randomly selected patients of age group 18-60 years from the orthopedic ward suffering from any orthopedic injury. The study design is a hospital based cross sectional descriptive study. Diagnosis of psychiatric Disorders were made using ICD10 criteria. Data entry and analysis was done using the SPSS software version 21.0.

Results: The prevalence of psychiatric disorder in patients with orthopedic injury was found to be 32% with depressive disorders being the most common diagnosis (12.1%) followed by anxiety disorder (8%) and somatoform disorder (6%). Psychiatric disorders were significantly associated with age, age group and gender. Psychiatric disorders were the most commonly found in those with patients with road traffic accident (52.1%) and those with lower limb injury (47.9%).

Conclusions: Since, there is presence of psychopathology in orthopedic injured patients, early referral by the orthopedic surgeons to the psychiatric department is necessary for early evaluation and treatment.

Keywords: Orthopedic injury, Psychiatric disorder, Road traffic accident

INTRODUCTION

Traumatic injuries have become a serious global health issue in today's context. It accounts for 9% of global mortality rate.¹ Following trauma, a range of mental health problems have been recognized which include immediate and delayed emotional and behavioral reaction which can interfere with the recovery process.²

There has been a study where psychiatric disorders and behavioral problems have been reported to be three to five times more common among people with injuries which are severe enough to require hospitalization.³ Early identification of various psychological issues earlier in the course may lead to faster wound healing, also improve quality of life, curtail mental health care costs, lessen burden on support systems, and improve productivity.

There have been very few studies conducted in Nepal regarding the prevalence of psychiatric morbidities in patients with trauma. Therefore, this study focuses on assessing the prevalence of psychiatric disorders in patients with orthopedic trauma admitted to the orthopedic ward of Chitwan Medical College.

METHODS

A hospital based cross-sectional study was carried out in orthopedics ward of CMC Teaching Hospital (CMCTH), Chitwan, Nepal, after the approval of Institutional Review Committee. The study population consisted of those patients with orthopedic trauma who were admitted in the department of orthopedics. The sample was selected over a period of 1 year using non probability, purposive sampling technique. Patients who were in the age group of 18 to 60 years having orthopedic injury and patients who are willing to participate in the study were included in the study whereas patient who were hemodynamically unstable, having poor general health conditions, with bone tumors and infections were excluded from the study.

A total of 150 patients with orthopedic injury admitted to the Department of Orthopedics of CMCTH were selected using purposive sampling method. The data were collected from August 2019 to August 2020. Informed consent was taken from the patient after clarification about the nature of study. A semi structured Performa was prepared to obtain socio-demographic details, history of injury and mental status examination. Diagnosis of various Psychiatric Disorders was made using ICD-10 Diagnostic Criteria for Research (DCR) criteria under the supervision of Senior Psychiatrist. Data was exported to the SPSS 25 version statistical version for analysis. Descriptive Statistics was used which included frequency, percentage, mean and standard deviation.

RESULTS

Figure 1 shows the psychiatric disorders among the injured patients. Among the 150 injured inpatients, 32% of the patients (n=48) had psychiatric disorders.

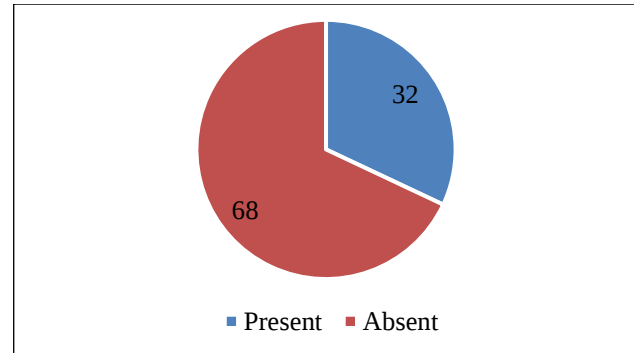


Figure 1: Distribution of patients with and without psychiatric disorders.

The most common psychiatric disorder diagnosed was depressive disorder (12%, n=18), of which majority was moderate depressive episode (6.7%, n=10), followed by anxiety disorder (8%, n=12). The least being alcohol dependent syndrome (1.3%, n=2) (Table 1).

Table 1: Distribution of patients based on psychiatric diagnosis.

Psychiatric diagnosis	Frequency (n)	Percent (%)
Depressive disorder	18	12.1
Moderate depressive episode	10	6.7
Mild depressive episode	4	2.7
Severe depressive episode	4	2.7
Anxiety disorder	12	8
Somatoform disorder	9	6
Acute stress reaction	7	4.7
Alcohol dependent syndrome	2	1.3

The prevalence of psychiatric disorders was highest among the age group 31-40 years 18(37.5%), among females 26 (54.2%) and among the married population 35 (72.9%). Similarly, the majority of psychiatric disorders were seen in those belonging to joint family 33 (68.8%) and among unskilled workers 17 (35.2%) while those who were educated upto intermediate and middle school certificate had similar prevalence of psychiatric disorders 11 (22.9%) (Table 2).

Table 2: Psychiatric disorders with sociodemographic profile of the patients.

Variable	Patient with psychiatric disorder (n=48) (%)	Patient without psychiatric disorder (n=102) (%)
Age	43.20+/-11.10	39.67+/-13.72
Age group (in years)		
18-30	6 (12.5)	34 (33.3)
31-40	18 (37.5)	23 (22.5)
41-50	9 (18.8)	15 (14.7)
51-60	15 (31.3)	30 (29.4)
Gender		
Male	22 (45.8)	75 (73.5)
Female	26 (54.2)	27 (26.5)

Continued.

Variable	Patient with psychiatric disorder (n=48) (%)	Patient without psychiatric disorder (n=102) (%)
Family type		
Nuclear	15 (31.3)	48 (47.1)
Joint	33 (68.8)	54 (52.9)
Marital status		
Married	35 (72.9)	74 (72.5)
Unmarried	6 (12.5)	22 (21.6)
Others	7 (14.6)	6 (5.9)
Education		
Graduate	4 (8.3)	13 (12.7)
Intermediate	11 (22.9)	26 (25.5)
Middle school certificate	11 (22.9)	16 (15.7)
Primary school certificate	8 (16.7)	20 (19.6)
High school	5 (10.4)	11 (10.8)
Illiterate	9 (18.8)	16 (15.7)
Occupation		
Semi profession	4 (8.3)	12 (11.8)
Arithmetic skill /job	10 (20.8)	26 (25.5)
Skilled worker	5 (10.4)	12 (11.8)
Semi-skilled Worker	10 (20.8)	16 (15.7)
Unskilled worker	17 (35.4)	26 (25.5)
Unemployed	2 (4.2)	10 (9.8)

Table 3: Cross-tabs of psychiatric disorders with clinical variables.

Variable	Patient with psychiatric disorder (n=48) (%)	Patient without psychiatric disorder (n=102) (%)
Upper limb injury	15 (31.3)	51 (50)
Lower limb injury	23 (47.9)	34 (33.3)
Multiple site injury	10 (20.8)	17 (16.7)
Fall injury	23 (47.9)	48 (47.1)
Road traffic accident	25 (52.1)	54 (52.9)

Majority of psychiatric disorders were seen in those with lower limb injury (47.9%), while 31.3% of psychiatric disorders were seen in those having upper limb injury while only 20.8% of psychiatric disorders were seen in patients having multiple site injury. Majority of psychiatric disorders (52.1%) were found in those with road traffic accident (Table 3).

DISCUSSION

Prevalence of psychiatric disorders in the present study was found to be 32%. Similar findings were noted by Gupte et al, where the prevalence of psychiatric disorders was found to be 32% and also noted by Weinberg et al where the 39.2 % had psychiatric disorders.^{9,7} However, our findings contrast the findings of Malik et al, where prevalence of psychiatric disorders was 67.6%.⁵ This difference could be the difference in study population. The most common psychiatric diagnosis in our study was depressive disorder (12.1%). Similar observation was made by Gupte et al and Weinberg et al.^{9,7} But the rate was much higher, 23% and 22% respectively. The difference in prevalence rate could be due to difference in

sample size. Anxiety disorder was the second most common diagnosis in our study (8%). Our finding is similar to the observation done by Prasad et al, where the prevalence of anxiety disorder (panic disorder) was 7.14%.⁸ The prevalence of somatoform disorder in our study was (6%). However, study done by Malik et al showed that its prevalence was approximately two times (12.7%) than that of our study.⁵ These variations could be due to difference in study site. Our study involved only the inpatients, while the study by Malik et al included both the inpatient and outpatient of orthopedic department.⁵ Acute stress reaction comprised 4.7% of psychiatric disorders in our study. Our finding is accordance with the finding by Malik et al which showed 4.2%.⁵ Alcohol dependent syndrome was the least prevalent psychiatric disorder found in our study (1.3%). Our finding is almost similar to the findings by O'donnell et al, where the prevalence of alcohol dependence was 1.8%.⁴ Our study revealed that majority of psychiatry morbidity (n= 18; 37.5%) was present in the age group (31-40) years. Findings by Prasad et al and Gupte et al also revealed high psychiatric morbidity in the age group 31-40 years.^{8,9} Majority of psychiatric disorders (54.2%)

were found in females. Findings by Weingberg et al also revealed high psychiatric morbidity in females (38.5%).⁷ Shrahbzu et al also found anxiety and depression to be high in females (53.7% and 52.4%) respectively.⁶ Psychiatric disorder was found most commonly in married population (72.9%) in our study. However, our finding is almost similar to that of Gupte et al where majority (91%) of psychiatric disorders were found in married population.⁹ Psychiatric morbidity was found most commonly in joint family (68.8%) in our study, bearing similarity with the study done by Gupte et al (58.5%).⁹ Education wise, psychiatric disorder was found more in intermediate and middle school (22.9%). However, our findings contrast the findings by Bryant et al where psychiatric disorder was found more in those with high school certificate (41.95%).¹¹ Psychiatric disorders were more commonly seen in unskilled workers (35.4%) in our study. No reference for the relationship between psychiatric disorder and occupation was available till date. Psychiatric disorders was most commonly seen in injuries caused by RTA (52.1%) followed by fall injuries (41.7%). Our finding is in accordance with the findings of O'donnell et al where onset of psychiatric symptoms was more common after RTA rather than fall injury.⁴

Our finding is also consistent with the finding of Gupte et al where the most common psychiatric disorder was seen in RTA (54.54%) followed by fall injury (45.45%).⁹ Psychiatric condition was more common in patients with lower limb fracture (47.9%), which is similar to the findings in the study by Gupte et al, where psychiatric disorders were common among patients with lower limb injuries (78.7%).⁹

CONCLUSION

Our study observed that the prevalence of psychiatric disorders among those admitted to the orthopedic ward suffering from injury was (32%). Depressive disorders being the most common psychiatric disorder (12.1%) followed by anxiety disorder (8%). Psychiatric disorders was most commonly found in those with patients with road traffic accident (52.1%) and those with lower limb injury (47.9%). Regular consultation becomes necessary with psychiatrist when traumatic patients are admitted in orthopedics ward. Prior recognition of possible high-risk patients (who can develop psychiatric symptoms) will have significant impact on long term orthopedic morbidity. This will help in detecting mental illness earlier, as early intervention (psychological/medical or both) lead to early betterment of patients from orthopedic point of view. This can lead to early discharge from the ward.

ACKNOWLEDGEMENTS

We would like to thank all the patients for their cooperation in the study. We would also like to thank Mr.

Raj Kumar Sangroula and Dr Samikshya Sangroula for their valuable contribution regarding editing and final preparation of the manuscript.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by Chitwan Medical College Teaching Hospital, Bharatpur

REFERENCES

1. World Health Organization. Peden MM, McGee K, Krug E, editors. Injury: a leading cause of the global burden of disease, 2000. Available at: <https://apps.who.int/iris/handle/10665/66160>. Accessed on 2 May 2022.
2. Protocol AT. Trauma-informed care in behavioral health services. Rockville, USA: Substance Abuse and Mental Health Services Administration. 2014.
3. Kuhn WF, Bell RA, Netscher RE, Seligson D, Kuhn SJ. Psychiatric assessment of leg fracture patients: A pilot study. *Int J Psych Medi*. 1990;19(2):145-54.
4. O'Donnell ML, Creamer M, Elliott P, Atkin C, Kossmann T. Determinants of quality of life and role-related disability after injury: impact of acute psychological responses. *J Trauma Acute Care Surg*. 2005;59(6):1328-35.
5. Malik P, Garg R, Sidhu S, Sharma KC, Gulia AD. Psychiatric morbidity in post traumatic handicapped patients. *Delhi Psych J*. 2012;15(1):130-5.
6. Shrahbzu M, Yigizaw N, Fanta T, Assefa D, Tirfeneh E. Prevalence of depression and anxiety and associated factors among patients visiting orthopedic outpatient clinic at TikurAnbessa specialized hospital, Addis Ababa, Ethiopia, 2017. *J Psychiatry*. 2018;21(450):2.
7. Weinberg D, Narayanan A, Boden KA, Breslin MA, Vallier HA. "Psychiatric illness is common among patients with orthopedic polytrauma and is linked with poor outcomes. *J Bone Joint Surg A*. 2016;98(5):341-8.
8. Juneja R, Prasad BS. A cross-sectional study of psychiatric morbidity in adult amputees in a tertiary health care institute. *J Med Sci*. 2018;5(1):12-20.
9. Singh M, Gupte SG. Study of psychiatry morbidity following traumatic long bone injury. *MVP J Med Sci*. 2015;2(1):34-8.
10. Maselesele VM, Idemudia ES. The role of social support in the relationship between mental health and posttraumatic stress disorder amongst orthopedic patients. *Curationis*. 2013;36(1):1-7.
11. Bryant RA, O'donnell ML, Creamer M, McFarlane AC, Clark CR, Silove D. The psychiatric sequelae of traumatic injury. *Am J Psych*. 2010;167(3):312-20.

Cite this article as: Dawadi AK, Adhikari SR, Regmi AR. Prevalence of psychiatric morbidity in orthopaedic inpatient: a hospital based cross-sectional study. *Int J Community Med Public Health* 2023;10:3478-81.