

Psychiatric Illnesses Are Associated with Higher Risk of Acute Fractures and Worse Post-Fixation Outcomes: A Large Database Study

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Purpose: Psychiatric illnesses are common among trauma patients. Awareness of psychiatric comorbidities is essential to tailor treatment plans and facilitate recovery. However, minimal prior work has addressed which psychiatric disorders increase the risk of orthopaedic trauma and the effect of mental illness on outcomes. The purpose of this study was to describe the frequency of orthopaedic trauma and their post-surgical outcomes among patients with specific psychiatric diagnoses.

Methods: The TriNetx Analytics Network was queried for those ≥ 18 years old with documented psychiatric illness. Patients in this group with any occurrences of orthopaedic trauma were identified, and risk ratios (RRs) for fractures were calculated. Propensity score matching was conducted and an analysis was conducted on postoperative surgical fixation outcomes.

Results: A total of 11,266,415 patients were identified with a psychiatric diagnosis, including bipolar disorder (8.9%), schizophrenia (3.3%), major depression (12.4%), stress-related disorder (9.6%), anxiety disorder (64.5%), borderline personality disorder (BPD) (1.1%), or antisocial personality (0.2%). Fractures to the spine, skull, face, pelvis, or long bones in the extremities were noted. Antisocial personality disorder had the highest risk ratio (RR = 5.09) of having one or more associated fracture, followed by depression (RR = 3.03), stress-related disorders (RR = 3.00), anxiety disorders (RR = 2.97), BPD (RR = 2.92), bipolar disorder (RR = 2.80), and lastly schizophrenia (RR = 2.69). Patients with at least 1 psychiatric comorbidity were at increased risk of pulmonary embolism (odds ratio [OR] 1.254; $P < 0.0001$), superficial (1.648; $P < 0.0001$) and deep surgical site infections (1.527; $P = 0.0004$), pneumonia (1.312; $P < 0.0001$), urinary tract infection (1.267; $P < 0.0001$), deep venous thrombosis (1.384; $P < 0.0001$), and complex regional pain syndrome (1.828; $P = 0.008$) by 1 month after operative fixation. By 1 year, patients were also at an increased risk for stroke (1.138; $P < 0.0001$) and myocardial infarction (1.148; $P < 0.0001$).

Conclusion: All psychiatric comorbidities were associated with an increased relative risk of orthopaedic injury and higher odds of worse systemic outcomes. Providers should be aware of psychiatric illnesses in patients when treating acute injuries and when fostering prevention of future injuries.