

Sleep Disturbance in Orthopaedic Trauma Patients

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Purpose: This study was undertaken to evaluate the prevalence and severity of sleep disturbance experienced by orthopaedic trauma patients, how sleep disturbance affects the patients' perceived health quality, and identify factors associated with sleep disturbance.

Methods: This is an IRB-approved, cross-sectional cohort study of patients seen in the orthopaedic trauma clinic of a large community hospital in a metropolitan area. After obtaining written consent, qualified patients were given Pittsburgh Sleep Quality Index (PSQI) and 36-Item Short Form Survey (SF-36) questionnaires in their primary language. Inclusion criteria included orthopaedic injury, age ≥ 18 years, and ability to read English and/or Spanish. For this study, we used PSQI ≥ 5 as indicative of sleep disturbance. Demographic data, as well as ISS at time of presentation, were recorded.

Results: 335 patients were included. 288 patients (86.0%) had a PSQI score ≥ 5 , indicating the presence of sleep disturbance. The PSQI score was ≥ 10 in 183 patients (54.6%), which is sleep disturbance similar to the level seen in clinical depression. The average PSQI score was 10.3 (± 4.8). Patients reported an average sleep latency of 38.9 (± 37.5) minutes, with a total nightly sleep time of 6.3 (± 1.9) hours. After multivariate analysis, the bodily pain (BP), vitality (VT), and mental health (MH) components of the SF-36 remained independently associated with PSQI ($P = < 0.001, 0.002, \text{ and } 0.001$, respectively). ISS measurements at time of presentation and time since injury or surgery did not correlate with PSQI scores.

Conclusion: Our study is the first of its kind to objectively evaluate sleep disturbance in an orthopaedic trauma population. Our findings suggest that sleep disturbance is both highly prevalent (86% PSQI ≥ 5) and severe (54.6% PSQI ≥ 10) in patients recovering from an orthopaedic trauma injury. The BP, VT, and MH components of the SF-36 were independently associated with worse sleep quality. The average orthopaedic trauma patient presents with a sleep score similar to that seen in sleep disorders and clinical depression. Interestingly, in our study, the severity of the overall injury burden as measured by ISS and time since injury did not correlate with the severity of sleep disturbance, as one might expect.