

The Relationship of Depression Screening and Outcomes in Adolescent Knee Instability Management within Pediatric Orthopaedic Sports Clinics

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INTRODUCTION: To quantify the significance of depression screening for adolescents treated for knee instability based on surgical and patient-reported outcomes.

METHODS: A retrospective review was performed to identify all patients, ages 12-21 years, who were administered the Patient Health Questionnaire (PHQ-2/PHQ-9) and Columbia-Suicide Severity Rating Scale (C-SSRS) over a two-year period within a single institution pediatric orthopaedic sports clinic. At-risk patients diagnosed with knee instability underwent further review, collecting demographic and clinical characteristics, duration from injury, clinical diagnosis, surgical outcomes, and other diagnoses.

RESULTS: There were 3,298 patients screened in orthopedic sports clinics, with 138 scoring ≥ 3 on the PHQ-2, including 43 knee instability patients (31% of those scoring ≥ 3). There were 13/43 (30%) knee instability patients who further screened positive to be at risk of self-harm compared to 16/95 (17%) of other sports clinic patients ($p=0.074$). 26.2% of knee instability patients were at risk of moderate-severe or depression requiring further action of clinic staff (PHQ-9 ≥ 15), which was higher than general sports clinic patients (19.6%, $p=0.04$). 79.1% of patients underwent surgical treatment. Multivariate analysis of all 3,298 cases identified that female gender (OR 4.5 95%CI 1.7-12, $p=0.002$) and Black or African American race (OR 4.5, 95% CI 1.3-16, $p=0.02$) were associated with increased risk of moderate-severe/severe depression. Non-Hispanic ethnicity had a lower risk of depression categorized as moderate-severe/severe (OR 0.45 95%CI 0.21-0.99, $p=0.048$).

DISCUSSION AND CONCLUSION:

Past studies on depression and knee instability is relatively non-existent. The present study demonstrates a real risk of depression and self-harm in the adolescent being managed initially for knee instability, accounting for a quarter of all children being assessed in a sports clinic with an at-risk screen over two years. Gender, race, and ethnicity were factors that appear to correlate with the risk for moderately severe to severe depression that required referral to social worker consultation and behavioral health referral. Standardized outcome scores may not be discrete enough to identify this mental health issue; therefore, the value of integrating depression screening programs in adolescent sports clinics is becoming apparent.

Depression among adolescents has become an increasing public health concern. Screening for depression in orthopaedic sports clinics can help increase awareness and recognition of mental health conditions within the at-risk adolescent population in orthopaedic providers, particularly those with knee instability.