

**Do Health-Care Disparities Affect Outcomes Following Nonunion Repair Surgery?**

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**Purpose:** Socioeconomic disparities are an inherent and unavoidable aspect of medicine. Knowledge of these disparities is an essential component of medical decision-making, particularly among an increasingly diverse population. While health-care disparities have been elucidated in a wide variety of orthopaedic conditions and management options, they have not been established among patients who present for treatment of an ununited fracture. The purpose of this study is to determine if socioeconomic and educational disparities exist, following nonunion repair surgery.

**Methods:** Over a 12-year period, operatively treated patients who presented with a long bone fracture nonunion were prospectively followed. Sociodemographic factors were recorded at presentation. Functional outcomes were evaluated using the Short Musculoskeletal Function Assessment (SMFA). Univariate analysis was performed using Student t tests for continuous variables and chi-squared analysis for dichotomous variables. Analysis of variance was used when comparing means between ethnic groups. Multiple linear regression analysis was performed with the dependent variable being SMFA at long-term follow-up and independent variables being age, sex, race, income, and education level.

**Results:** 294 patients met inclusion criteria. Patients with a lower education (high school graduate or less) had worse long-term functional outcomes ( $P < 0.001$ ) and increased pain scores ( $P = 0.006$ ) at latest follow-up. Patients who made less than \$50,000 annually had worse long-term functional outcomes ( $P = 0.001$ ) and reported higher pain scores ( $P = 0.003$ ) following nonunion repair. Multiple linear regression demonstrated education level to be an independent predictor of long-term functional outcomes following nonunion repair ( $B = .269$ , 95% confidence interval [CI] = 5.722 to 15.452,  $P < 0.001$ ). No differences existed in outcomes or pain scores between those of different racial groups.

**Conclusion:** Patients with lower education levels and individuals who make less than \$50,000 annually have worse functional outcomes following long bone nonunion repair. Orthopaedic trauma surgeons should therefore be aware of these disparities and consider early interventions aimed at optimizing patient recovery in these subsets.