

Orthopaedic Trauma Disparities in Patient Reported Outcome Completion Rates

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INTRODUCTION:

Community socioeconomic and individual social determinants of health factors significantly influence patient reported outcomes (PROs) completion in orthopaedic trauma patients. The purpose of this study was to determine associations between orthopaedic trauma patient completion of PROs and socioeconomic factors.

METHODS:

A retrospective review of orthopedic trauma surgical patients ≥ 18 yo presenting to a metropolitan healthcare system from 2018–2021 was completed. Completion of PROMIS-10 global physical health (PROMIS) at 6 weeks and 1 year postoperatively was used to define completer versus non-completer patient groups. 2 community level socioeconomic indices were used based on patient address to further understand the impact of community factors on PROMIS completion likelihood. Area of deprivation index (ADI) was used as a proxy for geographic socioeconomic status and reported in deciles (1 being most privileged and 10 being most deprived). Index of concentration at the extremes (ICE) were defined as white with at least a bachelor's degree (most privileged) and black with less than high school education (most disadvantaged) and was reported on a continuum from -1 (100% deprived) to 1 (100% privileged). Input variables include demographics, census-tract specific socioeconomic indices, and comorbidities. Univariate analysis and mixed model regression analysis were used to identify significant associations between PROMIS completion and socioeconomic factors.

RESULTS:

3,928 patients were included in the final analysis. Of these, 1,769 (45%) completed PROMIS surveys at 6 weeks and 1 year postoperatively. There was no significant difference in completion based on age or BMI. Univariate analysis revealed significant differences between completers and non-completers in race ($p < 0.0001$), sex ($p < 0.0001$), injury type ($p < 0.0001$), ASA class ($p < 0.0001$), history of mental disorder ($p < 0.0001$), ICE ($p < 0.0001$), and ADI ($p < 0.0001$). Logistic regression demonstrated that increasing deprivation was negatively correlated with PROMIS completion. Patients with higher ADI social deprivation were significantly less likely to complete PROMIS surveys (odds ratio:0.935, 95% CI:0.898–0.972). Likewise, patients with higher ICE deprivation were significantly less likely to complete PROMIS surveys (odds ratio:0.986, 95% CI:0.981–0.992).

DISCUSSION AND CONCLUSION: Demographics, individual social determinants of health, and community level socioeconomic factors were significantly associated with PROMIS completion in trauma surgery patients.