

**Is Social Isolation an Important Predictor of Adverse Events and Patient-Reported Outcome Measures (PROMs) in Elderly Hip Fracture Patients?**

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**Purpose:** Our objective was to determine whether prefracture social isolation, assessed by the Lubben Social Networks Scale-18 (LSNS-18), predicts adverse events (AEs) and patient-reported outcomes at 1 year in patients undergoing surgical repair of a primary, low-trauma hip fracture.

**Methods:** Low-trauma hip fracture patients  $\geq 65$  years old admitted to a tertiary care center for surgical repair were enrolled in a prospective cohort study. Patients with active cancer or dementia were excluded. Patient- Reported Outcomes Measurement Information System (PROMIS-29) and LSNS-18 were administered 2-4 days postoperatively to assess prefracture, then again at 3 months and 1-year postoperatively. AEs were recorded 1 month, 3 months, and 1 year postoperatively. PROMs and AEs were compared across patients stratified by social isolation prior to fracture with Wilcoxon rank-sum and Fisher exact tests, respectively (2-tailed P values reported). Analyses were performed using SAS 9.4.

**Results:** 257 patients enrolled; 72.8% were female, 89.1% white, 66.8% college-educated, median age 81.5 years. 165 patients completed 3-month follow-up; 7 patients died before 3 months. 110 patients completed 1- year follow-up, by which time 3 additional patients died. Patients who were socially isolated prior to fracture had a higher mortality rate than those who were not socially isolated prefracture (7 vs 3,  $P = 0.022$ ). Number of 1-year AEs did not differ significantly between groups stratified by prefracture social isolation status. Prefracture socially isolated patients reported statistically significantly and clinically meaningfully worse 1-year PROMIS scores in their ability to participate in social activities compared to those not socially isolated prefracture (median T-score 55.6 vs 64.1,  $P = 0.043$ ). No statistically significant differences in 1-year PROMIS anxiety, depression, fatigue, or pain scores were observed. 43 out of the 110 patients who completed 1-year follow-up were hospitalized within the year, although there was no difference when stratified by prefracture social isolation status.

**Conclusion:** Prefracture socially isolated patients had a statistically significantly higher mortality rate and worse self-reported participation in social activities 1 year after hip fracture repair than those not socially isolated prefracture. These results support the viability of enhancing social integration as an intervention to decrease mortality and morbidity, and improve function in low-trauma hip fracture patients.