

Clinical Disparities in Geriatric Orthopedic Trauma: A Retrospective Analysis of Housed vs Unhoused Patients Using National Trauma Databank (NTDB)

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Purpose: Ground-level falls are a primary cause of injury among older adults. Unhoused individuals have an even higher risk of falls, with approximately one-third of those ≥ 50 years reporting a fall in the past 6 months, a rate comparable to housed individuals 20 years older. Yet, limited research has examined this issue within orthopaedic surgery. Given their increased vulnerability, unhoused individuals age ≥ 50 years are classified as geriatric. This retrospective cohort study evaluates the differences in clinical outcomes between housed and unhoused older adults hospitalized for ground-level falls.

Methods: Using the National Trauma Databank (NTDB) from 2021 to 2022, patients ≥ 50 years hospitalized for ground-level falls were identified using external ICD codes. The primary outcome was hospital length of stay (LOS); secondary outcomes included ICU admission and complication. A multivariable logistic regression analysis was conducted adjusting for homelessness, demographics, and comorbidities to evaluate risk factors associated with extended LOS.

Results: The study identified 1324 unhoused and 403,493 housed geriatric fall patients (mean age, 74.5 years; female, 60.0%). Compared to housed individuals, unhoused individuals were younger (mean age, 64.8 years vs 74.6 years), with a greater proportion ages 50 to 64 years (55.9% vs 17.9%, $p < 0.0001$). Rate of fractures sustained after a fall was 50.0% in unhoused and 57.2% in housed patients ($p < 0.0001$). Despite younger age and lower rate of fractures, unhoused patients experienced significantly worse outcomes. Homelessness was independently associated with prolonged hospital stays (LOS ≥ 7 days, OR 1.75, 95% CI: 1.46–2.10, $p < 0.0001$), and mean LOS (8.08 days vs 6.17 days, $p < 0.0001$). They were also more likely to require ICU admission (23.6% vs 18.0%, $p < 0.0001$) and experienced higher rates of complications (5.6% vs 4.0%, $p = 0.003$), including delirium and unanticipated ICU admissions.

Conclusion: Unhoused geriatric patients were younger and had lower rates of fractures. Despite this, they experienced significantly worse outcomes, with longer hospital LOS, ICU admissions, and increased complications. These differences highlight significant disparities driven by homelessness and underscore the need for integrated care models addressing both medical and social determinants of health to improve outcomes for this vulnerable population.