

Reporting of Social Determinants of Health within Prospective Tibial Fracture Studies

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Abstract

Introduction: Social determinants of health (SDOH) have been associated with patient related outcomes across several orthopaedic trauma pathologies and studies. However, prospective orthopaedic trauma studies variably report these factors, even when evaluating clinical outcomes. Therefore, this study aims to analyze how consistently SDOH factors were collected in published prospective tibial fracture publications reporting on outcomes and how these factors were defined and considered.

Methods: A systematic review of prospective clinical studies reporting on tibia fractures over the last 10 years was performed, resulting in 8506 screened articles. Inclusion criteria were as follows: prospective, conducted in North America, reported on tibial fracture clinical outcomes after surgical intervention, and enrolled at least 10 patients. Studies conducted in English and full texts were included. Sixty-four studies met inclusion criteria, which were included for final data extraction and subsequently analyzed for their use of SDOH.

Results: Of the 64 articles included based on criteria, 4.7% (3/64) did not collect patient demographic variables (e.g., age, gender) or SDOH factors (e.g., employment status, level of education, income level) as part of the analysis. 81.3% (52/64) only reported age, gender, and/or ethnicity. Of these 52 articles reporting on age, gender, and/or ethnicity, 84.6% (44/52) collected demographic variables but incorporated minimal statistical analysis regarding their relationship with tibial fracture outcomes. Specifically, 15.4% (8/52) of these articles reporting on demographic variables analyzed the relationship of age, gender, and/or ethnicity with tibial fracture outcomes using subgroup analyses, univariate or multivariate regression, or other methods. Furthermore, 15.6% (10/64) of articles reported on SDOH, and select articles discussed more than one SDOH. With regards to non-demographic factors, 10.9% (7/64) reported on patient education level, 7.8% (5/64) documented insurance status, 7.8% (5/64) discussed employment status, and 3.1% (2/64) discussed patient disabilities.

Conclusion: This study focused on prospective, North American studies analyzing tibial fracture outcomes and found that most articles (95.3%) included some level of patient demographic (e.g., age, gender, ethnicity) collection. However, the collection of advanced SDOH variables was more limited, and only 13.1% (8/61) of studies collecting demographic variables performed specific analyses on their connection with patient outcomes. Despite a significant body of literature associating SDOH variables to patient outcomes, many prospective trials do not factor in SDOH factors towards outcomes analysis.

Significance/Clinical Relevance: Most prospective tibial fracture studies do little to examine SDOH beyond reporting basic demographic variables amongst participating patients. Future efforts should analyze correlations between SDOH and tibial fracture outcomes to optimize management across patients.