Title:
Food Insecurity as a Determinant of Post-Operative Surgical Outcomes: A Systematic Review

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Background
Food insecurity (FI), defined as limited access to adequate food quantity and quality, is a major social determinant of health that has been increasingly recognized for its influence on healthcare outcomes. While its association with chronic disease is well established, the literature describing FI's impact on postoperative surgical outcomes is growing, necessitating a comprehensive synthesis. This systematic review aims to evaluate the current evidence linking FI to objective postoperative surgical outcomes across various specialties.

Methods
This systematic review was conducted following PRISMA guidelines. We performed a comprehensive search of PubMed, Embase, and Web of Science from inception through October 2025 for English-language original research. Inclusion criteria required studies to report on adult surgical patients and evaluate the association between any measure of FI/food environment and objective postoperative surgical outcomes. The Risk of Bias in Non-Randomized Studies of Interventions (ROBINS-E) tool was used to assess bias.

Results
A total of 33 studies, encompassing 706,307 patients, met the inclusion criteria across specialties including bariatric, colorectal, orthopedic, and thoracic surgery. FI measures were stratified across area-level indices and individual-level assessments (e.g., Hunger Vital Sign). Across both types of measures, FI was consistently associated with adverse surgical outcomes. Findings included higher rates of postoperative complications, readmission, prolonged length of stay, reduced achievement of textbook outcomes, increased cost of care, and higher short- and long-term mortality. Individual-level assessments consistently demonstrated negative associations across all included studies, while area-level measures showed greater heterogeneity. The overall risk of bias was high in 20 studies and moderate in 11, primarily due to confounding (D1).

Conclusion
This systematic review establishes food insecurity as a relevant and consistent determinant of adverse postoperative surgical outcomes. The stronger and more uniform associations observed with individual-level FI screening tools underscore the need for the inclusion of direct patient assessment in preoperative clinical workflows. Proactive screening and targeted interventions for food insecurity represent a tangible opportunity for the surgical community to reduce healthcare disparities and enhance the value and quality of surgical care.