Title:
Food Access and its Relationship with Peripheral Vascular Intervention Outcomes

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Background:
Food insecurity (FI) is a critical social determinant of health that has demonstrated relationships with surgical outcomes across disciplines. Composite measures of FI and economic status, as measured by the USDA's Food Access Research Atlas's Low Income, Low Access (LILA) categorization have been associated with complications following critical limb ischemia surgery. However, relationships between area-level access and vascular surgery outcomes have yet to be demonstrated across procedures. The objective of this study was to determine the relationship between LILA status and peripheral vascular intervention (PVI) outcomes.

Methods:
This single-center retrospective review analyzed 926 patients who underwent PVI procedures at Stony Brook University Hospital between 2018 and 2023. LILA status was determined using the 2019 USDA Food Access Research Atlas dataset corresponding to New York State zip codes. Propensity score matching was utilized to adequately compare outcomes between LILA and non-LILA cohorts (n = 285 per cohort). Outcomes analyzed included length of stay and post-procedure complications, including myocardial infarction, cardiac, pulmonary, renal, and access site complications, infection, pseudoaneurysm, AV fistula, and stenosis/occlusion.

Results (or Preliminary Results):
LILA patients had a significantly lower rate of access site complications compared to non-LILA patients (1.1% vs 4.2%, p = 0.033). No significant differences were found in overall post-procedure complications (6.0% vs 7.7%, p = 0.51) or mean length of stay (5.95 vs 5.26 days, p = 0.30) in the matched analysis. In the unmatched analysis, LILA patients had significantly lower rates of cardiac complications (0.4% vs 2.4%, p = 0.030).

Conclusions (or Preliminary Conclusions):
LILA status demonstrated minor associations with differential post-PVI outcomes. The predominantly null results suggest that geographical factors, such as Long Island's high population density, "suburban sprawl", and significant access heterogeneity within individual zip codes, fundamentally limit the effectiveness of zip code-based metrics like LILA as accurate proxies for economic access and individual-level FI among this patient population. Alternate methods of capturing FI exposure in the form of individual surveys are warranted to further evaluate the relationship between socioeconomic factors, FI, and surgical outcomes.