



Influence of Income and Food Insecurity on Stone Burden at Presentation for Urologic Surgery

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Background

- Patients from communities of low socioeconomic status (SES) are known to present with larger kidney stones
- It remains unclear how low SES contributes to disparate kidney stone burden
- It is possible that patients of low SES face obstacles to purchasing healthy, stone preventative diets
- We sought to investigate how income and food insecurity influence stone burden

Materials and Methods

- Review of prospectively collected data from the UCSF ReSKU (Registry of Stones of the Kidney and Ureter) database
- Inclusion criteria: patients who underwent one or more interventions for a single stone episode with preoperative imaging prior to surgical intervention.
- Patient data was linked to publicly available USDA census tract food insecurity and income data.
- Food insecure areas: census tracts >1 mile from a supermarket in urban communities, >10 miles in rural communities.

Results

- 332 patients had imaging and USDA data available for review
- Lower census tract median family income as a linear variable was a significant predictor of increased stone burden at presentation
- Patients from food insecure areas (37mm vs 47mm, $p = 0.066$), low income areas (37mm vs 42mm $p = 0.190$), and areas that were both food insecure and low income (38mm vs 61mm, $p = 0.103$) all had higher stone burden at presentation

Association of Stone Burden and Median Family Income

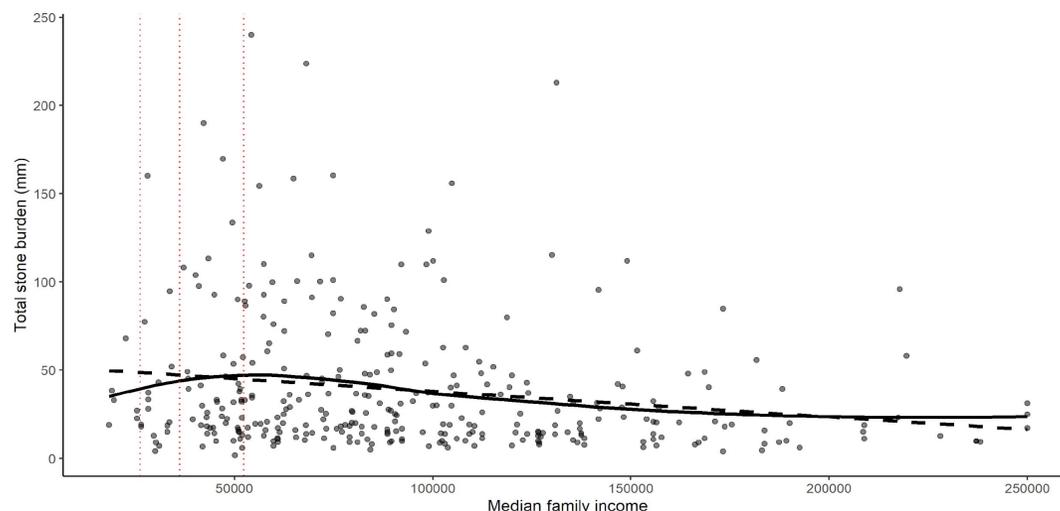


Figure 1. Patients with median family income of 100%, 138%, and 200% of federal poverty line (dashed red lines) had highest stone burden compared to patients of higher median family income. A linear regression model (dashed black line) showed stone burden decreased by up to 1.4 mm for every \$10,000 increase in median family income ($p = 0.0007$)

Discussion

- These data confirm previous findings that lower household income predicts stone burden at presentation
- Patients from low access and low income areas had greater stone burden compared to patients not from these areas, although these differences were not statistically significant

Conclusions

- Household income may have a greater impact on stone burden than neighborhood food security
- Future research with larger cohorts is needed to better elucidate the relationship between income, food security, and stone burden