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"Social Determinants of Health and Non-Traumatic Lower Limb Amputations: The Role of the Area Deprivation Index"

Introduction: Non-traumatic lower limb amputations, often associated with diabetes and peripheral vascular disease, are a major source of morbidity and mortality in the United States. These amputations appear to unevenly affect communities with a higher level of socioeconomic disadvantage. The Area Deprivation Index (ADI) is a method for assessing socioeconomic disadvantage at the neighborhood level and can be used to examine how areas with high deprivation are affected by wounds that may progress to lower extremity amputation. This is especially applicable in Southern regions, where diabetes and related comorbidities are disproportionately high. To develop solutions that target vulnerable populations, the relationship between socioeconomic status and wounds that lead to limb loss must be explored. Therefore, this study aims to investigate whether higher ADI scores are associated with increased rates of wounds that result in non-traumatic amputation of the lower extremities.

Methods: A retrospective cohort study of adult patients who underwent lower extremity amputation was conducted. Patients were identified in the electronic medical record and manual chart abstraction was conducted to collect patient demographics and treatment courses. The patient address was used to determine ADI The Neighborhood Atlas® (https://www.neighborhoodatlas.medicine.wisc.edu/). ADI was reported as state decile and national percentile. Logistic regression tested for associations with non-traumatic indications for amputation versus traumatic etiologies.

Results: Preliminary data were analyzed for 26 subjects where a majority were male (82%) with a mean age of 50.3±13.7 years of age. The mean state decile ADI was 5.9±2.4 (range 1-10) The mean national percentile ADI was 73.4±19.7 (range 23-98). In this preliminary sample, no associations were identified with ADI and underlying indication for amputation.

Conclusion: Data collection are ongoing in order to appropriately test for associations adjusting for demographics. It is notable in our patient sample that social deprivation is high in the mid range for the state but in 73% national percentile for composite measurement of deprivation.