

Abstract

Resource Allocation and Social Determinants of Health (SDOH): the Utility of the Social Deprivation Index (SDI)

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Background: Social determinants of health (SDOH) play a major role in shaping people's health. To advance data-driven resource allocation, advancements in the measurement of SDOH are needed. Specifically, decision-makers need ways to compare SDOH between different small geographic areas and assess changes over time.

Objective(s): We sought to validate the Social Deprivation Index (SDI)—a social determinants of health assessment tool— as a longitudinal measure and assess changes over time.

Methods: We used data from the American Community Survey (5-year estimates: 2015 [2011–2015] and 2020 [2016–2020]). We operationalized the 7 SDOH items within the SDI as proportions, using census tracts as the unit of analysis (n=73,117 for 2015). We validated the SDI with Kaiser-Meyer-Olkin testing (KMO) and factor analyses. We assessed change over time with 0.5 standard deviation thresholds.

Results: The SDI demonstrates longitudinal consistency among each component and as a summary measure. Overall KMO dropped from 0.74 (2015) to 0.70 (2020). A single-factor model explains 45% of the total variance in 2015 compared to 38% in 2020. Overall, 1 in 6 census tracts experienced substantial change over the 5-year interval: 13.3% improved while 2.5% declined. Worsening SDOH are disproportionately affecting Louisiana, West Virginia, and Puerto Rico.

Conclusions: The SDI holds promise as a longitudinal small-area index, allowing decision-makers to both compare SDOH among jurisdictions and monitor changes over time. The publicly available and granular data underlying the SDI makes it a go-to resource for entities committed to monitoring the effects of resource allocations and SDOH over time.

