

Heterogeneity of community drivers of social vulnerability across racial groups of men with prostate cancer

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Introduction

Social disadvantage negatively impacts prostate cancer (PCa) treatment outcomes through delays in diagnosis and differences in the type and quality of care received. Yet, implementation strategies remain limited due to their reliance on broad disadvantage measures that lack actionable targets for intervention. The Social Vulnerability Index (SVI) offers greater specificity by allowing for disaggregation into specific, measurable, and potentially actionable targets for intervention. In this study, we aim to characterize patterns of SVI drivers within and across racial groups and identify targets for supportive intervention to improve outcomes for patients with PCa.

Methods

We analyzed men diagnosed with clinically localized prostate cancer (excluding cM+ or cT4) in the CaPSURE registry from 1998 onwards. Racial groups included Asian/Pacific Islander (A/PI), Hispanic, Non-Hispanic Black (NHB), Non-Hispanic White (NHW), and Other/Not Reported (O/NR). Participants' addresses were geocoded, deidentified, and combined with Social Vulnerability Index (SVI) data, defined by census tract-level rankings from 0 to 1 across 15 component factors. For each factor, high community SVI was defined as being ranked 75th percentile or greater nationally and the most prevalent high SVI community factors across racial groups were reported. A p-value <0.05 was considered statistically significant.

Results

In total, 9,023 men were identified: 87 (1%) A/PI, 155 (2%) Hispanic, 903 (10%) NHB, and 7,785 (86%) NHW. Of these, 1,090 (12%) had high overall community SVI which was most prevalent in Hispanic and NHB men (47% for both, p<0.01). Amongst API men, living in communities with high prevalence of limited English proficiency (44%), large minority populations (38%) and high density of multi-unit residences (38%) were the most common high SVI factors. For Hispanic men, communities with limited English proficiency (52%), little to no vehicles (47%), and high minority density (46%) were the most common community factors of high SVI. For NHB men, high minority density (66%), no vehicles (56%), and single-parent households (51%) were the most common high community SVI drivers. For NHW men, households with residents aged 65 years or greater (36%), living in group quarters (26%) or mobile home residences (21%) were the most common high community SVI factors.

Conclusion

This study highlights the variability in the factors driving high community SVI across racial groups. Heterogeneity in the prevalence of these factors and the variations across communities highlight the need for specificity in identification and action to mitigate these drivers of vulnerability. By targeting specific

social vulnerability factors prevalent within and across different racial groups, we can develop a framework for tailored, community-specific interventions to address health disparities and improve PCa treatment outcomes.

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Conflicts of Interest Disclosure Statement

There are no relevant conflicts of interest.