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Visualizing racialized discriminatory mortgage loan denial, poor mental health, and their association in the U.S. using the "Housing-Health-Disparities Visualizer"

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We will introduce a digital tool, "Housing-Health-Disparities Visualizer (HHDV)". This tool, among other functionalities, visualizes the association between poor mental health and discriminatory loan application denials at the county level in the U.S. HHDV's primary goal is to highlight the impact of racial segregation, driven primarily by the discriminatory denial of housing on health disparity. Created using ArcGIS Experience Builder, HHDV offers an informational platform that simplifies complex data through interactive web visualizations, making patterns of disparities accessible to a broader audience and research community. HHDV draws insights from our current study which aims to first, identify the spatial pattern of racialized discriminatory mortgage loan-denial for Black and White populations, and second, investigate the association between loan-denial and adults reporting poor mental health. We measured the odds ratio of loan-denial between the two races and racial segregation in a variety of ways. Cluster analysis identified poor mental health in the Appalachian, parts of the Rust Belt, and a few southern states. The odds of loan-denials amongst Black applicants are significantly higher than the White applicants in the predominantly Black counties and parts of the Appalachian. A geographically weighted random forest regression revealed that the odds of loan denial is a significant factor in explaining the poor mental health in counties with predominantly Black majority with persistent poverty in the southeastern states and emerging racially-diverse metro counties in Florida for Black applicants. For White applicants, loan-denial was a significant factor in parts of Appalachia, the Rust Belt, and upstate New York.

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