

Geographic and Racial Differences of Persons Living with HIV in the Southern United States

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Abstract

African Americans are disproportionately affected by HIV in the southern United States. In addition, socioeconomic indicators such as income, education attained, and employment status, have been linked to HIV prevalence. This study sought to quantify the contribution of race and socioeconomic determinants to the overall presence of HIV in the southern United States. We collected 2010 U.S. Census data including non-hispanic white proportion, non-hispanic black proportion, Hispanic proportion, education attainment level, poverty level, urban status, income, and unemployment rate for 1,422 counties in the 16 states represented in the U.S. South. We then performed three types of regression modeling (multiple linear, conditional autoregressive, Bayesian Poisson hierarchical model), non-metric multidimensional scaling, and two types of cluster analysis (K-Means, Besag-Newell). The K-Means cluster analysis was used to cluster counties without using any geographic information, while the Besag-Newell considers the geographic layout of the counties.