The Uneven Distribution of Socioeconomic Stress as a Possible Driver of Racial Smoking Disparities: An NHANES Analysis

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While racial smoking disparities are well-documented, traditional socioeconomic models often overlook the discordance between educational attainment and income. This study investigates ‘status inconsistency’–socioeconomic stress occurring when earnings do not align with educational investment–as a potential driver of smoking behaviors. It was hypothesized that this mismatch correlates with smoking prevalence and is unevenly distributed across racial groups. A cross-sectional analysis was conducted using the National Health and Nutrition Examination Survey (2017-March 2020, N=7,825). A 16-cell matrix crossed four educational levels with four income-to-poverty ratios to quantify inconsistency along a gradient (1=low education/high income; 7=high education/low income). Logistic regression models using complex survey weights evaluated the association between inconsistency scores and current smoking status, adjusting for age and gender. Results identified a significant association between socioeconomic tension and smoking (OR 1.23; 95% CI 1.10-1.37; P<0.001). This association strengthened after adjusting for education level (OR 1.60; 95% CI 1.45-1.77; P<0.001). Scores were dichotomized into low (2-4) and high (5-7) stress categories. Minority racial groups were significantly more likely to experience high-stress mismatch compared to Non-Hispanic Whites; Non-Hispanic Blacks showed the greatest disproportion (OR 2.43; 95% CI 2.09-2.83; P<0.001). These findings suggest that racial smoking disparities are driven by the unequal distribution of socioeconomic mismatch, highlighting a need for public health interventions addressing the structural roots of health behaviors.

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