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"Racial Disparities and Risk Factors of E-Cigarette Use"

Background: Previous studies have found that different racial groups have different prevalence of e-cigarette use, and that socioeconomic factors may explain these differences. However, there is a lack of systematic research examining risk factors that may contribute to these racial differences.

Objective: This study sought to identify racial disparities in e-cigarette use and to determine risk factors that help to explain these differences. This research can provide information to guide smoking cessation efforts.

Method: We used the Wave 5 Adult Population Assessment of Tobacco and Health (PATH) Study. We categorized race-ethnicity into non-Hispanic White (NHW), non-Hispanic Black (NHB), non-Hispanic other (NHO), and Hispanic, seeking to identify racial disparities in e-cigarette use. Potential risk factors considered were income, education, mental health, perception of e-cigarette harm, social influences, former smoking, and reception of e-cigarette discounts or coupons. First, we conducted descriptive statistics of e-smoking across our risk factor variables, and chi-square tests to determine the significance of these factors in explaining e-cigarette use. Next, we used multiple logistic regression to check the risk effects adjusting all covariates. Finally, we conducted mediation analysis to determine whether identified factors showed evidence of influencing the association between race and e-cigarette use.

Results: We found that compared with NHW, both the NHB and the Hispanic populations were significantly less likely to use e-cigarettes. There is no significant difference in e-cigarette use between NHW and NHO populations. Mediation analysis found risk factors that significantly (p-value < 0.05) help explain differences in the e-cig use between NHB and NHW populations and between Hispanic and NHW populations include former cigarette smoking, receiving e-cigarette advertising, and perception of e-cigarette harm. Between Hispanic and NHW populations, our potential risk factors collectively explain 17.5% of racial difference, former cigarette smoking explains 7.6%, receiving e-cigarette advertising 2.6%, and perception of e-cigarette harm explains 27.8% of the racial difference. Between NHB and NHW populations, former cigarette smoking, receiving e-cigarette advertising, and perception of e-cigarette harm explain 5.2%,1.8%, and 6.8% of the racial difference respectively.

Conclusion: E-cigarette use is most prevalent in the NHW population compared to NHB and Hispanic populations, which may be explained by former cigarette smoking, receiving e-cigarette advertising, and e-cigarette harm perception. These findings suggest that racial differences in e-cigarette use may be reduced by increasing knowledge of dangers associated with e-cigarette use and reducing exposure to e-cigarette advertisement.