The Relationship Between Race/Ethnicity and Sleep Duration Depends on Geographic Location

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INTRODUCTION: Sleep duration is associated with health, and this may disproportionately affect minority groups. It is plausible that changing social-environmental factors (e.g., geographic region) would alter these relationships.

METHODS: Data from respondents age ≥18 from the 2012 Behavioral Risk Factor Surveillance System were used from Alaska (n=4,092), Kansas (n=5,646), Nevada (n=4,429), and Oregon (n=4,810). Self-reported sleep duration was assessed as total sleep within a typical 24-hour period. Responses were categorized as very short (≤4h), short (5-6h), normal (7-8h), and long (≥9h). Race/Ethnicity was categorized as White, Black/African-American, Hispanic/Latino, Asian-American, Native-American/Alaskan-Native, or Other. Population-weighted multinomial regression analyses examined the relationships between race/ethnicity and sleep duration category, relative to 7-8h. Analyses were adjusted for age, sex, education, income, body mass index, and smoking.

RESULTS: Across-state results were consistent with previous epidemiological studies, with very short sleep more likely among Black/African-American (OR=2.56, 95%CI[1.34,4.89], p=0.005) and Other (2.16[1.35,3.43], p=0.001) adults, short sleep more likely among Black/African-American (1.89[1.36,2.62], p=0.0001) and Other (1.63[1.29,2.0], p<0.0001) adults, and long sleep less likely among Asian-American (0.54[0.29,0.99], p=0.048) and more likely among Other (1.42[1.10,2.10], p=0.012) adults, versus White. A significant race*state interaction was found (p<0.0001). Analyses were then stratified by state. In Alaska, short sleep was more likely among Blacks/African-Americans (2.67[1.09,6.55], p=0.033) and long sleep was more likely among Asian-Americans (2.95[1.28,6.80], p=0.011) versus Whites. In Kansas, very short sleep was more likely among Others (3.55[1.21,10.39], p=0.021), short sleep was more common among Native-Americans/Alaskan-Natives (3.52[1.47,8.45], p=0.005) and Others (2.56[1.30,4.76], p=0.006), and long sleep was more likely among Others (3.61[1.48,8.80], p=0.005). In Nevada, Hispanics/Latinos were less likely to be very short sleepers (0.41[0.19,0.87], p=0.020), short sleep was more likely among Blacks/African-Americans (1.89[1.18,3.03], p=0.008) and Others (2.21[1.35,3.62], p=0.002), and long sleep was less likely among Hispanics/Latinos (0.60[0.37,0.97], p=0.036) and Asian-Americans (0.24[0.07,0.86], p=0.029). In Oregon, very short sleep was more likely among Blacks/African-Americans (9.00[2.26,35.85], p=0.002), Asian-Americans (5.87[1.07,32.14], p=0.041), and Others (2.82[1.31,6.09], p=0.008), short sleep was less likely among Hispanics/Latinos (0.51[0.30,0.85], p=0.010) and more likely among Others (1.51[1.05,2.18], p=0.026), and long sleep was more likely among Others (1.74[1.07,2.83], p=0.026).

CONCLUSIONS: Results demonstrated profound differences in the relationship between sleep duration and race/ethnicity, depending on state. This may be due to regional differences in social-environmental factors.

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