

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 (≤ 4 h), short (5-6h), normal (7-8h), and long (≥ 9 h). 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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