**Racial Sleep Duration Disparities: Exploring urban environmental and health differences in sleep durations for Blacks and Whites**

**BACKGROUND**

- Sleep durations of 6 hours or less per night are associated with multiple adverse health outcomes (i.e., coronary artery disease, stroke, hypertension, diabetes, obesity, inflammation, depression, and anxiety; King et al., 2000; Goldblatt et al., 2000; Van Cauter et al., 2008; Patel & Hu, 2009; Prou, 2004; Pimlott et al., 2009; Taylor et al., 2005).
- Blacks tend to report shorter and longer sleep durations than whites (Hale & Do, 2007; National Sleep Foundation, 2010; Durmer & Lyketsos, 2006).
- Blacks are more likely to reside in urban and highly populated environments, which may explain previous reports of racial sleep duration disparities (Hale & Do, 2007).
- Individuals residing in urban and/or heavily populated communities may be at an increased risk for short sleep durations due in part to stressful environmental conditions (i.e., crime, noise, and discrimination; Hale & Do, 2007).
- Limited research has explored differences in sleep duration between blacks and whites residing in similar urban environments.

**SPECIFIC AIMS**

- Examine differences in racial sleep durations between blacks and whites.
- Examine whether sleep duration differences in socio-demographic and health indices are consistent between blacks and whites.

**PARTICIPANTS**

- 2127 Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS) participants.
- Mean sample baseline age of 47 (SD = 8.74, range 30-64).
- Mean sample education of 12.77 (SD = 3.18, range 1-21).
- 715 Females, 402 Males.
- 608 Whites, 592 Blacks.

**MEASURES & PROCEDURES**

**Sleep Duration** - self-report of how many hours on average a participant slept in past month; responses ranged from 0 (>7 hours) to 2 (<6 hours).

**Socio-Demographics**
- Age, Sex, Race, and Education.
- Poverty Status - categorized as 0 (family income <125% or 1 family income <125%) as defined by the Federal poverty threshold.
- Perceived Neighborhood Disorder (Simcha-Fagan and Schwartz, 1986) - self-report of neighborhood characteristics (i.e., graffiti, litter, abandoned cars, and crime); item response range from 1 (very rare) to 5 (very common).
- Trust of People in Neighborhood - self-report of feeling of people in neighborhood can be trusted; item response range from 1 (strongly agree) to 5 (strongly disagree).
- Discrimination (Williams et al., 1997) - self-report of the frequency of day-to-day experiences (i.e., being treated with less courtesy, respect, and being harassed); item response range from 1 (almost everyday) to 5 (never).

**Mental Health Status**
- Vigilance-Taylor & Stearn, 1988) - 4-item subscale of the Multiscale Measure of Reflective Response; total score ranges from 1 (low vigilance) to 40 (high vigilance).
- Depression (Radloff, 1977) - Center for Epidemiological Studies-Depression (CES-D); total score ranges from 0 (no depressive symptoms) to 60 (high depressive symptoms).
- Perceived Stress (Cohen et al., 1983) - 4-item scale regarding feelings and thoughts within the past month; total score (% from 1 to 25) (very stressed).

**Physical Health Status**
- Coronary Artery Disease (CAD), Diabetes (self-report history of diabetes, fasting glucose >125, and/or use of hypoglycemic agents), Body Mass Index (BMI), Blood Pressure, and Inflammation (i.e., hsCRP).

**Procedure**
- Analysis of Variance (ANOVA) was used to explore racial differences in sleep duration.
- Chi-square test was used to explore sleep duration differences in socio-demographic and health status separately for whites and blacks.
- ANOVA and chi-square tests were used to explore sleep duration differences.

**RESULTS**

**Specific Aim 1:** No significant differences in sleep duration observed between whites and blacks.

**Specific Aim 2:** In Whites, inadequate sleep is associated with poverty, lower levels of education, perceived neighborhood disorder, less trust of people in neighborhood, reduced vigilance, depressive symptoms, coronary artery disease, and greater body mass index.

**Specific Aim 2:** In Blacks, inadequate sleep is associated with depressive symptoms and inflammation.

**CONCLUSIONS**

- Almost a quarter of whites and blacks report less than 6 hours of sleep, considerably below the 7-8 hours sleep duration recommended by the American Academy of Sleep Medicine (AASM).
- Racial disparities in sleep duration as previously observed appear to be minimized between blacks and whites residing in an urban environment, in that black and white HANDLS participants showed no significant differences in sleep durations.
- However, potential racial differences in neighborhood perception, discrimination, stress, and limited resources may explain racial differences in the associations between inadequate sleep and health outcomes.
- Elucidating the mechanisms that explain the social determinants of sleep quantity and quality has the potential to broaden our understanding of health disparities and suggest new avenues for intervention programs.