Disparities in Time for Sleep Across Race and Gender: An Application of the Intersectionality Approach

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Introduction

A swath of demographic and epidemiological studies have all consistently shown that racial/ethnic minorities experience poorer sleep than whites, both in terms of quality of sleep and duration (e.g. Adenekan et al. 2013; Hicken et al. 2013; Petrov and Lichstein 2016). With regards to gender differences in sleep behavior, women tend to exhibit longer sleep duration and better quality than their male counterparts (Burgard and Ailshire 2012; Knutson 2013). Duration and quality of sleep are important outcomes to consider given their link to health outcomes such as cardiovascular and metabolic disease (Curtis et al. 2016). The documented disparities in sleep duration are all informed by examination of the main effects of race and/or gender. Consequently, what remains to be examined is whether or not racial/ethnic disparities in sleep duration are conditional on gender. No study to my knowledge has applied the intersectionality perspective to the examination of sleep disparities within the U.S. population. In this study, I will draw on data from the American Time Use Survey and use the intersectionality perspective to further highlight the patterns of sleep across race and gender categories.

Primer on Intersectionality Theory

McCall (2005) referred to intersectionality theory as one of the most important contributions of feminist theory and methodology in modern times and notes that it has spread across the social and the behavioral sciences. Though formally coined in 1989 by legal scholar Kimberle Crenshaw, intersectionality theory's central tenet—that an individual's social locations such as race, gender, and class are too inseparable to be teased apart and examined separately—has its roots in the century-long struggle of black women's attempts to reconcile the competing goals of anti-racist and feminist movements (Brah and Phoenix 2004; Crenshaw 1991).

Such rapid spread of this theoretical framework across disciplines has given to some questions as whether or not intersectionality is simply a 'buzzword,' or if it is indeed a powerful and useful theoretical for understanding such as health aging (Davis 2008). In the context of health disparities, additive models have been referred to as "multiple jeopardy" models (King 1988), reflecting the added risk associated with belonging to several disadvantaged groups. Essentially these models view race, gender, and class as distinct categories and assume that disadvantaged social locations add up and can be examined separately from each other. This additive modeling strategy has provided useful insight into the social patterning of sleep duration across the U.S. population (e.g. Hale and Do 2007), but ignores the potential multiplicative effects of race, gender, class, and other social locations. A multiplicative approach allows for the consideration of the efforts of gender, race, and class within the 'context' of one another (Richardson and Brown 2016;

Spelman 1988). Such a consideration of the multiplicative approach is key to the quantitative application of intersectionality theory and can be useful for understanding health outcomes (e.g. Warner and Brown 2011). In sum, application of the intersectionality perspective will greatly enhance our understanding of the race/gender disparities in time for sleep.

Proposed Data and Methods

For this study, I will draw on data from the pooled 2014-2017 waves of the nationally representative, repeated cross-sectional American Time Use Survey (ATUS). ATUS is conducted annually by the Bureau of Labor Statistics, and interviews respondents age 15 years and older two to five months after completing their final Current Population Survey. Respondents report the time that they engage in various activities using an innovative time diary method, in which all activities between 4:00am on the designated dairy day to 3:59am of the following day are recorded. I will limit the analysis to respondents age 18-64. Moreover, to mediate the effect of outliers, I will top code all time use variables at the 95th percentile of the variables' distribution. Said top-coding strategy has been used by previous researchers employing the ATUS (Mattingly and Bianchi 2003; Burgard an Ailshire 2012).

Proposed Dependent Variable

Minutes of time for sleep serves as the dependent variable for this study, and it is coded as the total number of minutes respondents engaged in sleeping, sleeplessness while in bed, and sleeping activities not classified.

Proposed Independent Variables

Race/ethnicity, *gender*, and *intersections between race/ethnicity and gender* will all serve as the focal independent variables in the analysis. *Race/ethnicity* will differentiate between blacks, whites, and Hispanics (any race). *Gender* will differentiate between men (coded 0) and women (coded 1), and the *intersections between race/ethnicity and gender* will be represented by various interaction terms (racial/ethnic group will be multiplied by gender). Other important covariates will include *time engaged in exercise, time engaged in paid work, and time engaged in leisure* (all time use variables that may have an impact on sleep duration), *years od education, age* (centered), *squared age* (to address the curvilinear relationship between age and sleep), *parental status*, *marital status*, *year of the survey*, and *weekday interview* (to account for differences between weekend and weekday sleep).

Proposed Analytic Strategy

First, I will estimate a bivariate model to assess gaps in time for sleep by race/ethnicity and by gender. Next, I will estimate a series of multivariate OLS regression models to ascertain the mechanisms underlying the racial/ethnic and gendered pattern of time for sleep. In the first model, I will assess racial/ethnic and gender differences in time for sleep while also controlling for sociodemographic and time use controls. In the second model, I will include the interaction terms. Significant interaction terms would suggest that racial/ethnic groups experience sleep duration differently across gender. If I identify significant interactions, I will then plot them to provide a visual representation of the patterns of time for sleep across the intersections of these two social locations. All analyses will be conducted using Stata/SE 15. I will also use the survey weights provided by ATUS.

Expected Results

In bivariate analyses, I expect for results to be consistent with previous research. Specifically, I expect racial/ethnic minorities to report less time for sleep than their white counterparts. Conversely, I expect women to report more time for sleep than their male counterparts.

After accounting for various sociodemographic and time use variables, I expect that the racial/ethnic and gender gap in time for sleep will be slightly attenuated, but still present.

Lastly, I expect for significant interactions showing that racial/ethnic differences in time for sleep are conditional on gender such that white women are the most advantaged in terms of sleep duration, while black men and women are more likely to report less time for sleep. In sum, I expect the results to provide additional support to the importance of the intersectionality approach when examining health behaviors such as sleep.

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