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Editorial

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Sociocultural context of sleep health: modeling change over time

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Sleep patterns change over the life course as the dynamics of our everyday lives shift due to individual contexts and environmental surroundings. Previous research investigating self-reported sleep duration and socioeconomic status (SES) has shown that US populations that are socioeconomically disadvantaged are more likely to experience very low short sleep duration [1]. Recent research has shed light on the nuances that exist within the association of SES and sleep health. For example, previous work by Grandner et al. and Jackson et al. has shown that after statistical adjustment, higher income can also be associated with worse sleep health [2], especially among black/African American adults [3].

In the current issue of *SLEEP*, Nyarko et al. found that SES components, such as low household income and educational attainment, were associated with suboptimal long-term sleep trajectories by relating long-term sleep measures to baseline sociodemographic data [4]. Their results also highlighted meaningful racial differences, such as the finding that household income and neighborhood SES are more important for the healthier long-term sleep trajectories of white individuals than black individuals [4]. The work of Nyarko et al. emphasizes the need for future sleep health research that focuses on systemic, socioeconomic inequities and the ways in which they shape the way that sleep health is experienced by different American populations, such as black populations of the American South, and other communities that are racially and ethnically minoritized. In fact, they provide the opportunity for a greater discussion on strategies to improve longitudinal sleep and socioeconomic studies to better understand this association and their mediating factors.

The study by Nyarko et al. used data from a sample of 45 035 individuals of the Southern Community Cohort study. Long-term sleep trajectories were generated using sleep duration measures taken at baseline and at a 10-year follow-up period. These were then related to sociodemographic data taken at baseline. The long-term sleep trajectories that were created are as follows: short-short (SS), short-normal (SN), short-long (SL), normal-short (NS), normal-normal (NN), normal-long (NL), long-short (LS), long-normal (LN), and long-long (LL) [4]. These long-term sleep trajectories were then put into five groups: stable healthy, stable unhealthy, unstable unhealthy, improving, and deteriorating [4]. Normal-normal was used as the reference for stable, healthy long-term sleep. Lower education was associated with increased odds of suboptimal sleep trajectories for white and black participants (SS, SL, LS, NS and LL, SL, LS, NS, respectively) [4]. Interestingly, household income and neighborhood SES were more strongly associated with higher odds of suboptimal long-term sleep trajectories for white individuals than black individuals [4]. Overall, reporting lower socioeconomic characteristics at baseline were associated with suboptimal long-term sleep trajectories among both white and black participants [4].

The finding that lower socioeconomic characteristics were associated with less healthy sleep trajectories in general is important. Many previous studies have documented that there is an overlap between sleep health and socioeconomic disadvantage [5]. What has been less clear, though, is the degree to which these relationships might be cross-sectional or longitudinal. For example, people with lower SES are more likely to live in environments that preclude optimal sleep. However, previous studies have generally been unable to model such long-term trajectories. Although Tomfohr et al. previously showed that childhood SES predicts adult sleep architecture [6], real-world implications of their findings and similar relationships are poorly understood. This work opens the door for additional efforts to consider temporal dynamics in the relationships between socioeconomic factors and sleep health.

Another important finding in this study was that the relationship between socioeconomics and sleep health trajectory was stronger among white participants (from these Southern regions). This is consistent with previous work that showed that socioeconomic disadvantage may disproportionately impact the sleep health of white adults [7] and that relative socioeconomic advantage may provide less of a benefit to the sleep health of black adults [3]. Future work is needed to better understand this complex relationship. After all, it is well-documented that American black adults are more likely to experience worse sleep health than their white counterparts [1–5], and recent work shows that this disparity seems to be widening [8]. Perhaps there are cultural or other protective factors at play that may reduce the impact of SES on sleep health. Perhaps other

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influences, such as discrimination and systemic inequities, already exert influence on sleep health in overlapping ways so that other influences have less of an impact. Perhaps this finding suggests that the pathways linking social–environmental factors to sleep health are varied and may not be universally experienced. In any case, future work is needed in order to better understand the many pathways linking sleep health disparities, risk factors such as socioeconomic disadvantage, and adverse health outcomes [9].

Another important implication of this work is that other aspects of sleep health need to be better examined in longitudinal contexts. Sleep duration is only one aspect of sleep health [10]. There is still a lack of population-level sleep health data across several dimensions, including duration, quality, and timing, as well as daytime functioning and the presence or absence of sleep disorders and associated symptoms. Simply examining sleep duration alone is becoming increasingly recognized as an insufficient strategy for capturing population-level sleep health. Although the findings presented by Nyarko et al. make several important contributions, they highlight the need for well-designed studies to advance knowledge in this important research area. We need better examinations of sleep health, from multiple dimensions, in multiple populations, across multiple timepoints.

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