pii: sp-00680-14 http://dx.doi.org/10.5665/sleep.4228

EDITORIAL

Inadequate Sleep Duration as a Public Health and Social Justice Problem: Can We Truly Trade Off Our Daily Activities for More Sleep?

Commentary on Basner et al. Sociodemographic characteristics and waking activities and their role in the timing and duration of sleep. SLEEP 2014;37:1889-1906.

Lauren Hale, PhD

Program in Public Health, State University of New York, Stony Brook, New York

In this issue of *SLEEP*, Basner and colleagues present an impressively thorough, data-driven inquiry into sleep duration and sleep timing among American adults between 2003 and 2011 (n = 124,517).[1] The publicly available American Time Use Survey, collected by the United States Bureau of Labor Statistics, allows an unparalleled analysis of the sociology of everyday life over a recent decade and the time-use "trade-offs" that Americans make with sleep duration.

The nationally generalizable results of Basner et al.[1] confirm those of numerous prior studies on the social patterning of sleep.[2-7] The sociodemographic results, for example, indicate that younger adults get more sleep and go to bed later than their older counterparts. Those with lower levels of education are more likely to sleep both short and long sleep durations, compared to those with higher levels of education. Additionally, Blacks have increased odds of both short and long sleeping relative to Whites, with Hispanics and Asians also reporting increased odds of long sleeping compared to Whites. When taken as a whole, the patterns show that those with lower levels of social status are more likely to sleep either too little or too much, categories which are associated with higher risks of mortality among a host of other adverse outcomes.[6,8-10] Thus, this study presents another opportunity to raise concerns about sleep patterns as both an unmet public health and a social justice problem. That is, not only are too many Americans not getting enough sleep, but the distribution of sufficient restorative sleep across the population favors those with more social and economic advantages.[9,11]

The study also confirms the results from prior studies about how sleep duration is associated with time taken for other activities.[5,7,12,13] Specifically, shorter sleep durations are more common among those who spend more time: doing paid work, commuting, working multiple jobs, doing personal activities in the morning and evening, and watching television. It further reports an abundance of interesting detailed findings, such as: for each additional hour later that work starts is associated with about 20 minutes of additional sleep; self-employed respondents get more sleep than private-sector employees; and, during the economic recession years, average sleep duration was longer.[1]

Follow-up studies and/or qualitative inquiries might help us better understand the mechanisms underlying some of the more novel observations reported by Basner et al. Thus, their results provide a valuable beginning for numerous future studies about: who are sleeping more than others and why; who might be targeted in sleep interventions; and possibly what types of interventions might be effective. In addition, the results might foster meaningful conversations about the best use of our mornings and evenings, as well as possible avenues by which time for sleep could be increased in those sleeping less.

The results of Basner et al.[1] have several significant limitations. First, the data are cross-sectional, and we cannot ascertain whether the alleged time-use "trade-offs" are causal or confounded by numerous other factors. For instance, early work schedules are treated as a cause of short sleep duration, but it could also be that those who are short sleepers intentionally select jobs with earlier schedules (or those who prioritize long sleep do not consider jobs with earlier, more rigid schedules). Similarly, it may not be that people who spend a lot of time grooming in the morning sacrifice their sleep to do so; they may just wake up earlier than the longer sleepers and choose to spend that extra time enjoying their morning routine. Further, due to the over-reports of physiological sleep time that result from 24-hour time-use diaries, we should be somewhat concerned about the consequences of measurement error in attenuating some of the results. Finally, given the study design's focus on time-use, the multivariable results do not include numerous behavioral and environmental factors that we know influence sleep duration, like alcohol consumption, caffeine consumption, sleep disorders, medication use, psychological well-being, room temperature, and light exposure. These omissions strongly limit our ability to draw conclusions about the potential success of behavioral and policy interventions. Thus, despite the thorough analyses and large sample size, we must evaluate the results with some caution.

If we don't know whether the associations are causal, then we cannot be sure that any change in time-use behavior, much less through an untested intervention, would result in more time sleeping. Yet we can't help but ask: what types of interventions might work to reduce work hours or commute times? And would changes really translate into more sleep? Perhaps an extra hour in one's day will lead to more time eating potato chips on the couch rather than sleeping more? Will improving our transportation infrastructure or having people live closer to the workplace actually impact sleep duration? Is telecommuting a credible solution? And what are the unintended consequences of these proposals? Let's consider telecommuting: With more people telecommuting, perhaps sleep duration will increase for those who have the luxury of more flexible jobs; but how

Submitted for publication October, 2014
Accepted for publication October, 2014
Address correspondence to: Lauren Hale, PhD, Program in Public Health, State University of New York, Stony Brook, NY 11794-8338; E-mail: lauren.hale@stonybrook.edu

will that affect other behaviors and outcomes, including economic productivity and workplace culture? And since not all employees have the option of flexible work schedules, will telecommuting interventions exacerbate existing social disparities in sleep patterns?

The results presented by Basner et al.[1] primarily focus on time-use behaviors that are plausibly modifiable—e.g., hours in paid work, commute time, television watching, and possibly grooming activities. Yet it remains an open question how modifiable the many time-use behaviors categorized in their study actually are. Given the constraints of modern life, we must respect the reality that many time-use allocation decisions are not factors over which people have total control, due to both structural and psychological barriers.[11] This is especially true among those who have limited or lower levels of social status—whether measured by employment, race/ethnicity, or family income. While it is tempting to attribute sleep duration and timing patterns to active choices that can be altered through well-meaning targeted interventions, we must think deeply about the underlying structural and psychological factors that determine sleep patterns.

CITATION

Hale L. Inadequate sleep duration as a public health and social justice problem: can we truly trade off our daily activities for more sleep? *SLEEP* 2014;37(12):1879-1880.

DISCLOSURE STATEMENT

Dr. Hale has indicated no financial conflicts of interest.

REFERENCES

1. Basner M, Spaeth AM, Dinges DF. Sociodemographic characteristics and waking activities and their role in the timing and duration of sleep. Sleep 2014;37:1889-906.
2. Hale L, Do DP. Racial differences in self-report of sleep duration in a population-based study. Sleep 2007;30:1092-9.
3. Krueger PM, Friedman EM. Sleep duration in the United States: a cross-sectional population-based study. Am J Epidemiol 2009;169:1052-63.
4. Nunes J, Jean-Louis G, Zizi F, et al. Sleep duration among black and white Americans: results of the National Health Interview Survey. J Natl Med Assoc 2008;100:317-22.
5. Basner M, Fomberstein KM, Razavi FM, et al. American time use survey: sleep time and its relationship to waking activities. Sleep 2007;30:1085-95.
6. Whinnery J, Jackson N, Rattanaumpawan P, Grandner MA. Short and long sleep duration associated with race/ethnicity, sociodemographics, and socioeconomic position. Sleep 2014;37:601-11.
7. Knutson KL, Van Cauter E, Rathouz PJ, DeLeire T, Lauderdale DS. Trends in the prevalence of short sleepers in the USA: 1975-2006. Sleep 2010;33:37-45.
8. Gallicchio L, Kalesan B. Sleep duration and mortality: a systematic review and meta-analysis. J Sleep Res 2009;18:148-58.
9. Colten HR, Altevogt BM, Institute of Medicine (U.S.). Committee on Sleep Medicine and Research. Sleep disorders and sleep deprivation: an unmet public health problem. Washington, DC: Institute of Medicine, National Academies Press, 2006.
10. Knutson KL. Sociodemographic and cultural determinants of sleep deficiency: implications for cardiometabolic disease risk. Soc Sci Med 2013;79:7-15.
11. Hale L, Hale B. Treat the source not the symptoms: why thinking about sleep informs the social determinants of health. Health Educ Res 2010;25:395-400.
12. Biddle JE, Hamermesh DS. Sleep and the allocation of time. J Polit Econ 1990;98:922-43.
13. Hale L. Who has time to sleep? J Public Health (Oxf) 2005;27:205-11.