

# Treat the source not the symptoms: why thinking about sleep informs the social determinants of health

Lauren Hale\* and Benjamin Hale

\*Correspondence to: L. Hale. E-mail: lhale@notes.cc.sunysb.edu

*Received on September 25, 2009; accepted on March 12, 2010*

---

## Abstract

**Based on theoretical and empirical work, we argue that autonomy is likely an important underlying source of healthy sleep. The implication is that ‘treatment’ for sleep problems cannot be understood as an individual-level behavioral problem but must instead be addressed in concert with larger scale social factors that may be inhibiting high-quality sufficient sleep in large segments of the population. When sleep is understood as a proxy for health, the implications extend even further. Policies and interventions that facilitate the autonomy of individuals therefore may not only help reduce individual sleep problems but also have broader consequences for ameliorating social disparities in health.**

## Introduction

Numerous studies reveal a strong positive association between both high-quality and sufficient sleep duration and good health [1–6]. Many interpret these findings as carrying straightforward implications: improving population sleep quality ought to be encouraged. Generally speaking, this is sought by advocating ‘sleep hygiene education’ and increasing clinical diagnoses and treatment of sleep disorders [6]. The National Sleep Foundation, for instance, offers a set of sleep hygiene tips for those who suffer from insufficient and low-quality sleep.

In this article, we argue that these approaches tend to focus on quick fixes that may improve sleep (through pharmacological aids or behavioral therapies), but may not address the underlying sources of the sleep problems and may fail to help the most disadvantaged people who lack the resources to implement recommended behavioral sleep hygiene practices, thereby exacerbating disparities in health.

In this article, we contend that an underlying root cause of low-quality sleep is individual autonomy and control over one’s life. Social epidemiologist Sir Michael Marmot has made a similar argument about autonomy as an underlying mechanism of social disparities in health more broadly [7,8], but we find sleep to be an instructive and novel example with which to make this point. Ultimately, the implications for social and health policy are similar.

We approach this issue in the following manner. First, we introduce the concept of autonomy and present evidence to support this hypothesis using current empirical and theoretical work in the epidemiology of sleep. Then, we critically examine the present sleep hygiene recommendations, in light of the fact that they generally fail to address issues of individual autonomy. Further, we point out that individuals with restricted autonomy will be less able to adopt these recommendations than those who are more autonomous. We then discuss a broadened view of opportunities for improving sleep. We conclude by stepping back and showing how this perspective fits into the social determinants of health framework [9,10].

## **Autonomy as an underlying determinant of high-quality sufficient sleep**

---

There is considerable ambiguity and vagueness associated with the term ‘autonomy’, both in the public health literature but more notably in the philosophy literature [11]. Fortunately, there is a burgeoning discussion in public health that draws on the philosophical work to advance positions regarding justice and health. Following Michael Marmot [7,8], we use the term autonomy in this paper to refer loosely to how much control one has over one’s life. Because Marmot sometimes slides between definitions of autonomy as either perceived or actual and is largely dependent upon Amartya Sen’s conception of capabilities in establishing the normative contours of autonomy [12,13], we frame autonomy more conceptually in terms of substantive life projects [14,15]. Namely, we thus understand autonomy as the self-legislative reflective capacity to control one’s life by way of substantive life projects [9,10,16,17]. By substantive life projects, we mean projects that one is, or that one takes oneself to be, committed to; that one incorporates and that one endorses as part of one’s identity. For instance, a person who commits to becoming a good skier or who dedicates substantial time and energy to being a good student has incorporated and endorsed these skiing and studiousness as substantive components of her life. One who ‘simply skis’ or who is ‘merely a student’ has not. As it happens, substantive life projects are strictly speaking not ascertainable by appeal to simple behaviors. Rather, they are implied or indicated by greater or lesser lifetime achievements, like educational, marital, employment or financial status. While not a perfect metric, the various statuses can serve as helpful indicators.

Correspondingly, an emerging literature, herein referred to as the ‘social determinants of sleep’, has observed that the very same social characteristics that are associated with good health (e.g. high levels of education, being married, being employed and being socially engaged) are also positively associated with both higher quality sleep and healthy

sleep durations of between 6.5–8.5 hours per night [18–27]. These same sociodemographic characteristics are also associated with restricted autonomy [7,8]. That is, characteristics linked with restricted autonomy (less education, unemployment, being unmarried and low levels of social integration, for instance) are all positively associated with higher risk sleep quality and sleep durations [18–27]. Other work more directly shows that people with loss of autonomy in their activities of daily living are shown to have more extreme bedtimes and wake times, affecting both quality of sleep and total sleep duration [28]. These empirical findings, as argued in our prior work [14], support the notion that high-quality sufficient sleep can be characterized as a consequence of one’s autonomy or the amount of control one has over one’s life projects.

In addition, the pathways through which social factors produce suboptimal sleep outcomes more strongly imply a unidirectional and non-voluntary causality than some other health behaviors [14]. The connection between autonomy and sleep can here be understood as arising functionally, via the appeals of practical reason. Those who undertake to sleep ‘for a reason’—a reason tied to the projects over which one has or appears to have, some autonomous control—are those who exhibit better sleep. People who are more engaged with their own lives and the lives of their families, people who have more control over their lives and their opportunities and people who design and navigate their own life projects have a reason to sleep and have a reason to gain control of both their sleeping and waking practices (and are more able to make adaptive behavioral changes to improve their sleep). We argue that people who have a project-related reason to sleep—say, to succeed at work or with their family or to fulfill in a satisfactory way the projects over which they maintain control—are more capable of higher quality and more sufficient sleep. Their sleep practices are governed ‘by their own autonomous determination’. By contrast, the sleep practices and behaviors of those with unhealthy sleep are often governed by external or heteronomous forces and factors (e.g. these could include a combination of work and family stress,

chronic activation of the hypothalamic–pituitary–adrenal axis and other physiological dysregulation that interfere with sleep [29]).

This ‘autonomy’ interpretation does not appear as readily with other behavioral health concerns such as obesity and smoking (even though it is probably still applicable). Most other health behaviors can be misread as the outcome of bad individual choices, rather than consequences of restricted autonomy. Healthy eating and regular exercise, for instance, can be mischaracterized as rigid choices or tradeoffs. Both may conflict with standing desires and may carry unappealing costs: forgoing a piece of chocolate cake or joining a gym may be too burdensome or expensive, given that there is an appetizing slice of cake immediately at hand. But framing these behaviors as strict choices may also underdetermine the extent to which other factors—like one’s autonomous control over one’s life—play a role. Put another way, one’s eating and exercise habits are (perhaps incorrectly) more easily characterized as choices—tradeoffs between benefits and costs—understandable in terms of what one desires. Actors can be understood to value the shorter term pleasures of eating or lazing about over longer term health.

Because poor sleep cannot easily be described as something one chooses (i.e. it is unlikely, and even implausible, that one would choose to have non-restorative sleep), skeptics cannot argue that people with poor sleep habits simply ‘choose’ to sleep poorly. Compare, for example, the differences between, say, a supposed choice to have non-restorative sleep versus, say, the choice to eat another piece of cake. Eating a rich dessert has both benefits (taste and satisfaction) and costs (additional calories), whereas non-restorative sleep has no identifiable benefits.

Instead, sleep should be viewed as a consequence of something other than choice. We argue that restricted autonomy is one of the fundamental causes of low-quality sleep. That said, we are not arguing that it is the singular source. In addition to possible underlying physiological conditions (e.g. sleep apnea) that may affect sleep quality and quantity, other candidate factors, such as values, beliefs and attitudes about sleep, may also play a role. For

example, recent research shows that maladaptive beliefs about sleep are associated with higher the presence of insomnia [30]. Attitudes about sleep are likely to come early in life, as parenting behaviors surrounding sleep vary widely by culture [31,32].

---

### **Limitations of the sleep hygiene recommendations**

---

Many have taken a clinical or health education approach to improve sleep, such as interventions or educational programs that teach sleep hygiene [6,33]. Sleep hygiene is a term used to refer to a set of sleep-promoting habits. A typical list of sleep hygiene instructions can be found on the National Sleep Foundation website and in books on how Cognitive Behavioral Therapy can be useful in treating insomnia [33] and will include some of the following tips:

1. Get up at the same time each day, 7 days a week.
2. Exercise regularly.
3. Make sure your bedroom is comfortable and free from light and noise.
4. Make sure that your bedroom is at a comfortable temperature during the night.
5. Eat regular meals and do not go to bed hungry.
6. Cut down on all caffeine products.
7. Smoking may disturb sleep.
8. Don’t take your problems to bed.
9. Do not try to fall asleep.
10. Avoid naps.

The first and most natural observation about the above sleep hygiene recommendations is that they may provide a bandage, but they may fail to treat the underlying causes of low-quality sleep. Some of these sleep hygiene tips are themselves less achievable by people with restricted autonomy. For example, tip 8 bluntly states not to ‘take one’s problems to bed.’ Such a suggestion may not be so simple. Similarly, in response to sleep hygiene tips 3 and 4 about control of one’s physical environment, people in positions of reduced autonomy, for example,

are often less able to control their physical environment, especially if they live in shared or cramped housing conditions.

That is, while some individuals may benefit from adopting better sleep hygiene habits, sleep hygiene in itself is likely not enough to address the root cause or causes of the insufficient sleep. In fact, an American Academy of Sleep Medicine Report on the practice parameters concluded there is insufficient evidence to support the effectiveness of sleep hygiene education as the only treatment for chronic insomnia [34].

We argue that policies and interventions aimed at improving sleep should be considerably more expansive than they currently are. They should, in short, be paired with recommendations to facilitate opportunities for engagement and empowerment and take into account the social conditions that influence sleep quality and constrain individual's abilities to sleep well.

We are not suggesting that sleep hygiene behaviors be abandoned. In fact, sleep hygiene behaviors may play an amplifying role in the development of autonomy. For example, if one gets better sleep by reducing evening caffeine intake, one may perform better in school or in the workplace. The fact that these hygiene recommendations may work to alleviate symptoms and may even work to facilitate autonomy suggests that they ought not to be discarded, but rather viewed as one piece in a larger puzzle. Taken collectively, sleep hygiene tips and the findings of sleep researchers point to strong reasons to seek policies that enlarge opportunities for development and growth. We propose that interventions and policies geared to encourage personal growth and enlarge individual opportunities carry both sleep and health benefits.

---

### **Implications for social determinants of health**

---

In this special issue of 'Health Education Research' on the Social Determinants of Health, we conclude our argument with a discussion on how the findings in the case of sleep reinforce policy arguments in

the social determinants of health literature [7,10]. If it is true that the healthiest sleep stems from high levels of autonomy, then one ought to encourage 'practices' and 'projects' that will then promote optimal sleep. That is, in order to improve population health by enhancing sleep, energy is best focused on ensuring that opportunities for freely willing life projects are distributed as widely as possible. Link and Phelan [35] have made similar arguments stating that health policies, policies and interventions should be more universal and less dependent on individuals having resources to execute a set of instructions.

We have used the case of sleep hygiene tips as an example to show that the domain of the health policy maker and health educator is considerably broader than it might first appear. Rather than being concerned primarily with healthy sleep habits or making changes in other 'voluntary' behaviors, one instead must be concerned with the whole life package. In our example, if sleep tracks autonomy; if the objective is to promote the health of the public and if the public is not as healthy as it could be because it is not sleeping optimally; then, *ceteris paribus*, citizens burdened by other concerns quite independent of their sleeping, but that nevertheless impinge on their sleeping, will be better off health-wise if 'relieved of these concerns'.

The social epidemiology literature shows that neither access nor utilization of medical treatments at the individual level can account for the widely observed disparities in health by socioeconomic status [9,10,36]. In fact, differences in health behaviors at home and in the workplace also cannot explain the different health outcomes [36,37]. Instead, the literature suggests that inequality of opportunity and agent autonomy play an important role in determining the health of given individuals [9,10]. The social determinants of sleep literature reinforce these findings. What it also does is suggests a causal pathway linking autonomy and availability of opportunity to healthy sleep. We have argued elsewhere that this causal pathway is easier to understand for sleep than it is for other health behaviors because depriving oneself of high-quality sufficient sleep is not an enticing choice in the same

way that other health behaviors such as eating ice cream or smoking a cigarette offer a tradeoff [14].

That is, current findings in the epidemiology of sleep suggest that healthy sleep is tied to underlying levels of autonomy, rather than a voluntary choice to sleep well. High-quality sleep is achieved best not through instructing people to select a series of choices about sleep hygiene but rather by improving the circumstances in which one lives.

The implications of this finding are that health providers and educators underdetermine, and consequently under treat, sleep problems if they only offer up recommendations that treat sleep as an active choice. Instead, a broad spectrum of political and social considerations must be brought to bear on the problem of poor sleep and poor health. The health policy implications for the social determinants of sleep and the social determinants of health are synonymous. The way to ameliorate the observed disparities in both sleep and health is to address the underlying sources (i.e. restricted autonomy) of the disparities problem and not focus on treating the symptoms.

---

### Conflict of interest statement

---

None declared.

---

### References

---

- Kripke DF, Garfinkel L, Wingard DL *et al.* Mortality associated with sleep duration and insomnia. *Arch Gen Psychiatry* 2002; **59**: 131–6.
- Leger D, Pandi-Perumal SR. (eds). *Sleep Disorders: Their Impact on Public Health*. Oxford, UK: Informa Health Care, 2007.
- Ayas NT, White DP, Manson JE *et al.* A prospective study of sleep duration and coronary heart disease in women. *Arch Intern Med* 2003; **163**: 205–9.
- Leger D. Public health and insomnia: economic impact. *Sleep* 2000; **23**(Suppl. 3):S69–76.
- Tamakoshi A, Ohno Y. Self-reported sleep duration as a predictor of all-cause mortality: results from the JACC study, Japan. *Sleep* 2004; **27**: 51–4.
- 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.
- Marmot MG. Status syndrome: a challenge to medicine. *JAMA* 2006; **295**: 1304–7.
- Marmot MG. *The Status Syndrome: How Social Standing Affects Our Health and Longevity*. New York, NY: Times Books/Henry Holt, 2004.
- Daniels N. Justice, health, and healthcare. *Am J Bioeth* 2001; **1**: 2–16.
- Daniels N, Kennedy BP, Kawachi I. Why justice is good for our health: the social determinants of health inequalities. *Daedalus* 1999; **128**: 215–51.
- Arpaly N. *Unprincipled Virtue: An Inquiry into Moral Agency*. Oxford, UK: Oxford University Press, 2003.
- Sen A. *Development as Freedom*. New York, NY: Knopf, 1999.
- Courtwright A. Health disparities and autonomy. *Bioethics* 2008; **22**: 431–9.
- Hale B, Hale L. Is justice good for your sleep? (And therefore, good for your health?). *Soc Theory Health* 2009; **7**: 354–70.
- Hale B, Hale L. Choosing to sleep. In: Dawson A, (ed.). *The Philosophy of Public Health*. Surrey, UK: Ashgate, 2009.
- Rawls J. *A Theory of Justice*. Cambridge, MA: Belknap Press of Harvard University Press, 1971.
- Korsgaard CM. *Self-Constitution: Agency, Identity, and Integrity*. Oxford, NY: Oxford University Press, 2009.
- Hale L. Who has time to sleep? *J Public Health (Oxf)* 2005; **27**: 205–11.
- Adams J. Socioeconomic position and sleep quantity in UK adults. *J Epidemiol Community Health* 2006; **60**: 267–9.
- Hale L, Peppard PE, Young T. Does the demography of sleep contribute to health disparities? In: Leger D, Pandi-Perumal SR (eds). *Sleep Disorders: Their Impact on Public Health*. Oxford, UK: Informa Healthcare, 2007.
- Hale L, Do DP. Racial differences in self-report of sleep duration in a population-based study. *Sleep* 2007; **30**: 1092–9.
- Moore PJ, Adler NE, Williams DR *et al.* Socioeconomic status and health: the role of sleep. *Psychosom Med* 2002; **64**: 337–44.
- Lauderdale DS, Knutson KL, Yan LL *et al.* Objectively measured sleep characteristics among early-middle-aged adults: the CARDIA study. *Am J Epidemiol* 2006; **164**: 5–16.
- Krueger PM, Friedman EM. Sleep duration in the United States: a cross-sectional population-based study. *Am J Epidemiol* 2009; **169**: 1052–63.
- Nasermoaddeli A, Sekine M, Kumari M *et al.* Association of sleep quality and free time leisure activities in Japanese and British civil servants. *J Occup Health* 2005; **47**: 384–90.
- Gellis LA, Lichstein KL, Scarinci IC *et al.* Socioeconomic status and insomnia. *J Abnorm Psychol* 2005; **114**: 111–8.
- Hill TD, Burdette AM, Hale L. Neighborhood disorder, sleep quality, and psychological distress: testing a model of structural amplification. *Health Place* 2009; **15**: 1006–13.
- Ohayon MM, Vecchierini MF. Normative sleep data, cognitive function and daily living activities in older adults in the community. *Sleep* 2005; **28**: 981–9.
- Van Reeth O, Weibel L, Spiegel K *et al.* Interactions between stress and sleep: from basic research to clinical situations. *Sleep Med Rev* 2000; **4**: 201–19.
- Carney CE, Edinger JD, Morin CM *et al.* Examining maladaptive beliefs about sleep across insomnia patient groups. *J Psychosom Res* 68: 57–65.

31. Jenni OG, O'Connor BB. Children's sleep: an interplay between culture and biology. *Pediatrics* 2005; **115**: 204–16.
32. Giannotti F, Cortesi F. Family and cultural influences on sleep development. *Child Adolesc Psychiatr Clin N Am* 2009; **18**: 849–61.
33. Perlis ML, Jungquist C, Smith MT *et al*. *Cognitive Behavioral Treatment of Insomnia: A Session-by-Session Guide*. New York, NY: Springer, 2005.
34. Chesson AL, Jr, Anderson WM, Littner M *et al*. Practice parameters for the nonpharmacologic treatment of chronic insomnia. An American Academy of Sleep Medicine report. Standards of Practice Committee of the American Academy of Sleep Medicine. *Sleep* 1999; **22**: 1128–33.
35. Link BG, Phelan J. Social conditions as fundamental causes of disease. *J health Soc Behav* 1995; **5**: Spec No 80–94.
36. Berkman LF, Kawachi IO. *Social Epidemiology*. New York, NY: Oxford University Press, 2000.
37. Adler NE, Marmot M, McEwen BS *et al*. *Socioeconomic Status and Health in Industrial Nations: Social, Psychological, and Biological Pathways*. New York, NY: Annals of the New York Academy of Sciences, 1999.