ARE SLEEP DEPRIVATION AND FATIGUE AMONG PHYSICIANS UNAVOIDABLE?

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Column Editor

Our clinical experience as physicians has taught us that we have the capacity to care for patients despite serious fatigue induced by acute or chronic sleep deprivation. But critics charge that sleep-deprived clinicians are potentially dangerous — even though no study has documented the link between physician fatigue and patient harm — and they urge us to recognize that getting sufficient sleep should be seen as part of our professional responsibility to ensure patient safety. The call for more sleep begs 2 questions: How good is the care we provide when we are seriously fatigued, and how necessary is the sleep deprivation that is entrenched in medical training and readily accepted in clinical practice?

The question about the necessity of sleep deprivation is increasingly relevant due to recent requirements that house officers should work no more than 80 hours per week.1 Trainees are believed to be particularly vulnerable to the effects of sleep deprivation, which can manifest as fatigue-related depression, anger, irritability, and strained family relationships.2,3 Exhausted trainees are also at risk when driving: one study found that one half of house officers surveyed had fallen asleep at the wheel.4 The potential personal cost of fatigue is reason enough to reevaluate the assumed necessity of sleep deprivation in medical training and practice.

Some authors draw a provocative analogy between the cognitive dysfunctions of sleep deprivation and alcohol intoxication and regret that only the latter is met with social disapproval.5,6 They argue that we would not tolerate an inebriated colleague at work, but we too easily accept (perhaps even admire) a colleague whose professional exertion leads to exhaustion. Although tests of cognitive performance in artificial settings may justify this comparison, the actual circumstances of clinical work limit the analogy. Arousal influences can minimize the impact of sleep deprivation: activity, posture, interest, and motivation are presumably some of the factors that explain why a physician can focus on patient care in spite of exhaustion.6 The absence of arousal factors explains why that same physician may pose a lethal risk to self and others when undertaking the monotonous task of driving home.

Caffeine use is another factor that influences the effects of sleep deprivation. The positive effects of moderate caffeine intake by physicians may help to maintain efficiency and safety in the clinical care setting. Most people successfully regulate their consumption of caffeine to maximize its benefits and minimize its adverse effects. The adverse effects of habitual moderate caffeine use are presumed to be minimal but may negatively affect public health (eg, by raising the average population blood pressure by 2-4 mm Hg).8 Although caffeine consumption is a socially acceptable method of decreasing the effects of sleep deprivation, its success as an occupational stimulant may suggest the use of more potent agents.

Modafinil is a relatively new drug that is approved for the treatment of excessive daytime sleepiness associated with narcolepsy. It has been cited (not recommended) for possible use by fatigued physicians.9 Permission is being sought to expand the approved uses of modafinil to include the treatment of sleepiness in night-shift workers.10 If the indications for modafinil are expanded, physicians may find the prospect of a once-a-day pill for alertness an alluring possibility for their hardworking patients and themselves. Some physicians may already be engaged in off-label prescribing of this drug to help those who need (or want) to do more and sleep less. Unlike caffeine, however, modafinil is a schedule IV controlled substance that produces psychoactive and euphoric effects typical of other stimulants, and it may be abused, especially by patients with a history of drug or stimulant abuse.11

Although we may not think twice about strategic reliance on caffeine to increase alertness, the prospect of adopting a more deliberate and potent pharmaceutical approach to the problem of sleep deprivation in medicine disturbs those who see sleep as the solution to sleepiness.2 Prescribing a drug to counteract fatigue caused by sleep deprivation also raises questions about the role of sleep in human health. Studies of total sleep deprivation in humans have not revealed adverse effects that define a clear physiological function of sleep, but the belief that the need to sleep is a biological imperative is generally accepted.4 Even if drugs like modafinil prove to be safe, the effects of long-term pharmacologically extended wakefulness have not been determined.

If we are unable or unwilling to use pharmacotherapy to reduce fatigue caused by lack of sleep, we must convince ourselves that the potential harms of sleep deprivation can be justified by benefits to patients. Does good patient care make sleep deprivation unavoidable? The answer to this question depends on how we understand disease and its human impact. Illness does not respect circadian rhythms or optimal schedules. If we agree that there are not enough phys-

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Off-Label Product Discussion: The author has disclosed that his article references the following off-label/unapproved use of drugs or products: modafinil for fatigue.
Clinicians in the United States to staff all care settings via rotating shifts, then many (if not most) practicing physicians must serve at times and for durations that meet considerable circadian resistance. Learning to work through that resistance is therefore a critical part of medical training. A profession with intrinsically rigorous demands requires equally rigorous preparation.

Complex institutional and economic factors bear heavily on the hours worked by physicians, especially trainees. These realities cannot be ignored. Residency training may also be viewed too much as an initiation ritual, albeit one that shapes professional identity in preparation for powerful social roles. It is a tragic irony that the pressures of residency have the potential to breed attitudes that denature patients into units of work to be avoided. Providing adequate supervision and nurturing support is essential to ensure that the rigor of training does not turn toxic.

Some degree of sleep deprivation among many physicians is unavoidable, given the nature of illness and the limited number of physicians. The impact of this deprivation may be blunted by caffeine consumption and schedules that reflect circadian rhythms, but accepting the responsibility to care for the sick requires a commitment to respond to human needs, regardless of the hour or degree of inconvenience. Granted, we also have limits that should be allowed to constrain our readiness to respond when to do so would threaten our emotional or physical health. And perhaps some of us also need to consider the plausibility of the claim that serious exhaustion in a physician may be more a sign of risk than of dedication.

References