

It's Time to Wake Up to the Use of Pharmacologic Sleep Aids by Emergency Physicians



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Circadian disruption and sleep deprivation have been the Achilles heel of emergency medicine since the dawn of the specialty, an inherent stressor long linked to practitioner burnout in the minds of many throughout the medical profession. Whereas 45 years ago relatively little was known about the effects of sleep deprivation and it was easy to brush off the problem as a mere inconvenience, much more is known today. You need to look no further than the *New York Times* or *USA Today* to become aware that sleep deprivation is an important public health issue directly causing or contributing to myriad acute and chronic mental and physical health problems, including depression, suicide, vehicular injury, and heart disease. We have a responsibility to address sleep deprivation among the practitioners of emergency medicine as an important wellness issue for ourselves and our peers.

We have also learned that sleep deprivation negatively affects performance in more profound and insidious ways than we knew in the past. Fatigued individuals have impaired memory, reasoning, and judgment, and are more emotionally labile and irritable. And although few studies of the effect of fatigue have used emergency physicians as subjects, there is no reason we should be the exception to the rule. It was no surprise when Perisco et al¹ demonstrated that emergency physicians, like everyone else, experience a decline in cognitive performance when fatigued. We have a responsibility to address sleep deprivation among the practitioners of emergency medicine as an important quality-of-care issue for our patients.

In this edition of *Annals*, Francis et al² report that 56% of staff emergency physicians practicing in the Calgary region of Alberta, Canada, were taking pharmacologic sleep aids at some frequency. Although the unvalidated survey

instrument, a variety of biases inherent in surveys, and the limited geographic region of the study all make the estimate of the actual number of emergency physicians using sleep aids in Canada and the United States a likely biased and imprecise one, the survey is sufficient to demonstrate that too many emergency physicians are doing so.

Sleep deprivation among emergency physicians is a problem. With the possible exception of melatonin, pharmacologic sleep aid use by well-meaning practitioners is not the solution. The available pharmacologic sleep aids fail to induce the normal sleep stages and their progression that characterizes natural sleep,³ and the sleep induced by pharmacologic sleep aids lacks the full spectrum of psychological and physical restorative properties of natural sleep. Among its many benefits, natural sleep enhances next-day psychomotor function, cognition, and memory retention. Conversely, the pharmacologic sleep aids commonly used by emergency physicians as reported in this study (nonbenzodiazepine hypnotics, of which zolpidem [Ambien] was the most common, alcohol, antihistamines, and benzodiazepines) have next-day residual effects, including impaired memory, cognition, and psychomotor function.⁴ Pharmacologic sleep aids do not even reliably increase the quantity of sleep compared with placebo.⁴⁻⁶

Beyond the fact that pharmacologic sleep aids do not improve the quality or quantity of sleep, there are additional health concerns for users. Repeated use results in physiologic tolerance, discontinuance results in rebound insomnia, and prolonged use may increase the risk of death.⁷ In addition to an increased risk of fatal motor vehicle crashes, evidence links pharmacologic sleep aid use with an increased risk of death from other causes, including infections and cancer. Given the known risks and the lack of significant objective benefit, it is prudent to avoid habitual use of pharmacologic sleep aids.

We should be concerned, too, that survey respondents most commonly obtained prescriptions for their medications from a colleague or a primary care provider. It is unclear how many physicians had consulted a sleep

specialist. Only recently has there been broad dissemination of the limitations of pharmacologic sleep aids and the effectiveness of alternatives such as cognitive behavioral therapy for insomnia beyond the specialist sleep medicine literature.⁸ As a result, it is likely that neither prescribers nor users were fully informed and so may have had an overly positive impression of the risk-benefit ratio of these medications.

Nor should we forget our patients. None of the physicians using pharmacologic sleep aids thought that their use of the medications adversely affected their ability to provide quality patient care. Although such a belief is a prerequisite for the ethical use of pharmacologic sleep aids by physicians, it is unlikely to be true. The adverse cognitive effects of pharmacologic sleep aids linger for hours beyond awakening, resulting in the grogginess and “hangover” well known to users and prescribers alike. This is particularly concerning, given that 47% of individuals using pharmacologic sleep aids reported taking these medications to sleep before a night shift. It is no surprise that physicians who used pharmacologic sleep aids were more likely to use caffeine and other stimulants on a shift. Unfortunately, although stimulants increase alertness, they do little to restore complex cognition.

What is our path forward? First, additional research should be conducted to confirm the results of the work by Francis et al and to better characterize the use of pharmacologic sleep aids by emergency physicians and the effect these medications have on physicians’ performance. Although much is known through work in other disciplines on the negative effects of sleep deprivation and the lack of benefit of the use of pharmacologic sleep aids, we know little about the specific individual characteristics and practice circumstances that drive the use of pharmacologic sleep aids by emergency physicians. The physicians habitually using pharmacologic sleep aids undoubtedly believe the medications enhance their sleep and their performance on subsequent shifts. Given that we now have reason to believe that thousands of emergency physicians are using pharmacologic sleep aids, we should have evidence to support or refute that belief.

Next, we need to shift the paradigm when it comes to fatigue among emergency medicine practitioners. Night shifts are not going away. The sick and injured will continue to present 24 hours a day. We emergency physicians, with our diurnal human physiology, will face challenges in meeting the need. But individually and collectively, we can work toward solutions that are better for ourselves and our patients. Emergency physicians can be educated to better understand the limited utility and risks

of pharmacologic sleep aids and the more promising behavioral alternatives. At a practice level, greater emphasis can be placed on staffing and scheduling practices that ameliorate the toll night shifts take on emergency physicians. Our goal should be to staff emergency departments with physicians who are neither sleep deprived nor have taken pharmacologic sleep aids.

As a specialty, emergency physicians can develop policies and encourage best practices to limit and address sleep deprivation and fatigue. In graduate medical education, emergency medicine led the way in recognizing fatigue as an important issue in medical education and the need for duty-hour limits to safeguard the well-being of our trainees and our patients. While other specialties were still arguing that work weeks exceeding 100 hours were essential and even beneficial in medical education, emergency medicine residents were commonly assigned less than the 60-hour limit imposed by our specialty. That effort addressed an important part of the issue, but more work needs to be done. Emergency physicians are still too tired, tired enough to take pharmacologic sleep aids that don’t really help.

Research, education, and policy can provide better solutions. We owe it to ourselves and our patients to work for change.

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