

## Sleep Disorders: Sleepless in Singapore

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Sleep disorders are common afflictions in both the paediatric and adult populations, increasingly recognised as major public health concerns. Recently, the Institute of Medicine (USA) convened an ad hoc committee of experts in public health, academic and medical administration, and health sciences research to address sleep health issues, including the impact of sleep loss and sleep disorders on public health. In its 2006 report “*Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem*”, 50 to 70 million Americans were estimated to suffer chronically from sleep disorders which adversely affect their health and mortality.<sup>1</sup>

Sleep disorders are associated with a wide range of health problems, including an increased risk of hypertension, diabetes, obesity, depression, myocardial infarction, and stroke. Collectively, therefore, they represent a large and generally under-recognised public health burden.

Sleep Medicine has evolved rapidly in the last 50 years as a multidisciplinary field, encompassing the specialties of dentistry, neurology, otorhinolaryngology, paediatrics, psychiatry, psychology, and pulmonary medicine. The growing body of knowledge in this field is reflected in the recently revised and updated *International Classification of Sleep Disorders*, 2<sup>nd</sup> ed (2005), which lists over 80 distinct sleep disorders in 8 categories, including the insomnias, sleep-related breathing disorders, hypersomnias of central origin, circadian rhythm sleep disorders, parasomnias and sleep-related movement disorders.<sup>2</sup> Polysomnography (PSG) (sleep studies), the recording of multiple physiological parameters during sleep, including electroencephalography (EEG), electromyography (EMG), electro-oculography (EOG), electrocardiography (ECG) and respiration, is used in the diagnosis and treatment of sleep disorders. The technical standards for sleep studies were recently revised in *The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology, and Technical Specifications* (2007).<sup>3</sup>

In Singapore, the first Sleep Laboratory was set up at the Singapore General Hospital in 1987 by a neurologist, Dr K

Puvanendran. A local pioneer in Sleep Medicine, he led a multidisciplinary team of doctors, with initial sleep recordings made on improvised EEG machines. There are a handful of Sleep Laboratories in the restructured hospitals in Singapore equipped to perform comprehensive sleep studies, and several commercial vendors which provide partial home sleep study services. Such unattended home sleep studies have recently been approved in a new set of guidelines, from the American Academy of Sleep Medicine (AASM), for the diagnosis of obstructive sleep apnoea (OSA) in selected adults aged 18 to 65 years, who have a high pretest probability of moderate to severe OSA and no concomitant medical conditions.<sup>4</sup> Paediatric sleep services are still a limited commodity in Singapore, available only in the 2 major public paediatric centres (KK Women’s and Children’s Hospital and National University Hospital).

Extrapolating from the American data and our own local anecdotal impression, it is likely that sleep disorders represent a significant, and probably overlooked, health problem in the local population. One of the most common sleep-related disorders in adults is chronic insomnia, reflected in prescription sleeping-pill abuse, which has been the subject of intense media scrutiny, and the focus of revised guidelines on the use of sedative-hypnotics, soon to be published by the Ministry of Health Singapore. Our practice experience suggests that chronic partial sleep deprivation is common, and that insomnia and sleep apnoea are the major sleep problems. Both insomnia and sleep apnoea are associated with increased morbidity, e.g. depression, hypertension, heart disease and stroke. Even our youths today appear to have little sleep, perhaps because of the ever-demanding school system, and distractions such as the Internet. Snoring and obstructive sleep apnoea-hypopnoea syndrome (OSAHS) are the most commonly seen sleep problems in our young patients.

There is a pressing need to raise awareness of sleep health issues in this country, and to reduce the large burden of undiagnosed and untreated sleep disorders. This can be achieved through both lay education programmes such as

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public health forums, and professional continuing medical education (CME) events for general practitioners and specialists in training. Such events may be organised by healthcare organisations and professional groups such as the Singapore Sleep Society.

Formal teaching in Sleep Medicine is also needed in our medical schools, for general practitioners and in both basic and advanced specialty training programmes, in specialties to which this knowledge is particularly relevant, such as neurology, otorhinolaryngology, paediatrics, psychiatry and pulmonary medicine.

Besides teaching clinicians evidence-based Sleep Medicine, it is also important to develop programmes for the training of future sleep researchers in existing academic health centres. Locally, sleep laboratories need to keep abreast of the rapidly evolving technical standards in PSG, and should ideally be run in accordance with international accreditation standards. Sleep technologists and sleep physicians alike, should ideally seek appropriate training in accredited programmes and achieve proper credentialing with recognised professional qualifications or commensurate clinical experience in Sleep Medicine.

We hope that this special issue, highlighting *Sleep and Its Disorders*, will encourage greater interest in this fascinating and rapidly evolving field, with a view to raising the standards of Sleep Medicine practice locally and, ultimately, improving overall sleep health for everyone.

#### REFERENCES

1. Colten HR, Altevogt BM, editors. *Sleep Disorders and Sleep Deprivation: An Unmet Public Health Problem*. Committee on Sleep Medicine and Research of the Board on Health Sciences Policy. Institute of Medicine of the National Academies. Washington, DC: National Academies Press, 2006.
2. American Academy of Sleep Medicine. *International Classification of Sleep Disorders*. 2<sup>nd</sup> ed. Diagnostic & Coding Manual. Westchester, Illinois (USA): American Academy of Sleep Medicine, 2005.
3. Iber C, Ancoli-Israel S, Chesson AL, Quan SF. *The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology, and Technical Specifications*. Westchester, Illinois (US): American Academy of Sleep Medicine, 2007.
4. Collop NA, Anderson WM, Boehlecke B, Claman D, Goldberg R, Gottlieb DJ, et al. Portable Monitoring Task Force of the American Academy of Sleep Medicine. Clinical guidelines for the use of unattended portable monitors in the diagnosis of obstructive sleep apnea in adult patients. Portable Monitoring Task Force of the American Academy of Sleep Medicine. *J Clin Sleep Med* 2007;3:737-47.