

# Homecare Classroom on Sleep Apnea

## ISSUE 5

### Sleep-disordered Breathing and Continuous Positive Airway Pressure Compliance in a Group of Commercial Bus Drivers in Hong Kong

Obstructive sleep apnoea syndrome (OSAS) is a common form of sleep-disordered breathing (SDB) causing sleep fragmentation, disabling daytime sleepiness, impaired cognitive function and poor quality of life. Patients with SDB have an increased risk for road traffic accidents compared with the general driving population and there is also a high rate of fatality of sleep-related accidents due to reduced vigilance and slower reaction time.

Last year, The Chinese University of Hong Kong published a study on the prevalence of SDB and continuous positive airway pressure (CPAP) compliance in a group of commercial bus drivers in Hong Kong. A sleep questionnaire survey was conducted at a bus depot followed by random selection of bus drivers for simple home sleep study. Bus drivers with a respiratory disturbance index (RDI) at least 5 times /hour during home sleep study were invited to have hospital-based sleep study for confirmation followed by nasal CPAP treatment.

Among the 1016 bus drivers interviewed, the following findings were noted :

- 60.9% reported sleepiness at work of varying degree;
- 8.5% experienced sleepiness at least twice per week;
- 24% admitted to have fallen asleep during driving a least once despite a self-reported mean sleep duration of 7.0 hours per night over the previous 3 months.



The study has further shown that body mass index (BMI), snoring intensity, and neck circumference had positive and independent association with the RDI (i.e. the frequency of upper airway obstruction). Nevertheless, neither self-reported sleepiness nor the ESS (a questionnaire in which the subjects were asked to score the likelihood of falling asleep in eight different situations) had any significant correlation with the RDI. Patient symptom perception documented by self-rating may fail to detect unacknowledged sleepiness or that resisted through personality, situation or motivation.

The study has pointed out that even though currently there is no agreed-upon test of driving safety for sleepy patients, it has been shown that drivers with road traffic accidents had significantly more sleepiness on objective testing and slower reaction times. A meta-analysis has shown that OSAS contributes to a significant proportion of road traffic accidents and related costs and deaths but most of these events can be prevented by CPAP treatment. **Treatment of OSAS is cost-effective and benefits both the patient and the public.**

**Conclusions: The prevalence rates of sleep-disordered breathing and obstructive sleep apnoea syndrome among the bus drivers were 8.4% and 5.4% respectively. Drivers who had proceeded to home CPAP treatment for sleep apnoea showed significant improvement of subjective sleepiness and cognitive function.**

Reference: David S.C.Hui, Fanny W.S.Ko, Joseph K.W.Chan, Kin W.To, Joan P.C.Fok, Jenny C.Ngai, Michael C.H.Chan, Alvin Tung, Doris P.Chan, Catherine W.Ho and Christopher K.W.Lai; Department of Medicine & Therapeutics, The Chinese University of Hong Kong.

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