

EDITORIAL

Childhood Sleep Problems: Education is the First Issue

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In medicine, the data and hence information has accumulated at a high speed. 2.6 million biomedical articles were published in English in the '90s. Not surprisingly, there is always demand from different concerned groups to increase exposure to different branches of medicine, be it molecular biology or proteomics or biostatistics, etc, in the undergraduate or postgraduate curriculum. Given that time is finite, it is important to justify any additional exposure to any particular branch of medicine with strong evidence. In the current issue of the Journal, Bruni and colleagues highlight another gap in medical education, i.e. pediatric sleep medicine (1). In a postal survey of Italian pediatricians and child neuropsychiatrists with rather low return of around 8%, they found that sleep problems affected around 20% of young children seeking consultation from the respondents, who were quite senior with the mean year of graduation in 1974 to 1976. Assuming these senior pediatricians and child neuropsychiatrist are leaders of their respective fields and are seeing cases that are referred by others less experienced in this area, one could well conclude that sleep-related problems are indeed important in secondary or tertiary settings. Indeed, growing numbers of research findings suggested that sleep problems are very common in children and adolescents.

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Young et al summarized all the epidemiological studies of obstructive sleep apnea syndrome (OSAS) in children and showed that the estimated global prevalence of OSAS in children is 1% to 10% (2). Current evidence suggests that OSAS is associated with cardiovascular abnormalities. Two studies by Marcus et al. (3) and Amin et al. (4) found that childhood OSAS was associated with elevated blood pressure and left ventricular hypertrophy. Habitual snoring in children was reported to occur in 10 to 14% in children 6-year of age or younger from different studies from Europe and the United States (2). Habitual snoring is an important sign of OSAS in children as OSAS occurred in 10% to 20% of children who snore habitually (2). Even in children with primary snoring, i.e. snoring without OSAS, we found that they had a significantly higher blood pressure and significantly lower arterial distensibility compared with normal control (5). Other sleep problems are also prevalent in children and adolescents. 78% of children between age 3- and 13-year experienced at least one episode of childhood parasomnias (including sleepwalking, night terror, sleeptalking, leg restlessness, enuresis, sleep bruxism and body rocking) (6). Liu et al. reported that the prevalence of insomnia in Chinese adolescents was 16.9% (7). The same group of researchers conducted another study on daytime sleepiness in adolescence (8). They found that daytime sleepiness occurred in 5.8% of Chinese adolescents. These sleep problems and OSAS (9) lead to impaired daytime performance of children in the long term (10,11).

Bruni et al. found the Italian pediatricians and child neurophysiologists to have a less than satisfactory scores in the sleep knowledge questionnaire and they attribute this to the inadequate sleep education in medical schools and residency program in Italy. This inadequate education is most likely not confined to Italy nor is it confined to medical practitioners. A study done in Australia primary care settings by Blunden et al. (12) showed that sleep problems of children attending general practice were frequently ignored by both parents and general practitioners. Over 90% of parents of sick children attending general practice did not raise child's sleep problems at consultation. General practitioners discussed sleep problems with parents of sick children in less than 8% of the cases. Even in children at risk of sleep disorders, as indicated by higher sleep disturbance scale for children (SDSC), the report rate by parents only increased from 8% to 15%.

By now, one could appreciate that sleep-related problems occur commonly in children and some problems, like OSAS, are associated with cardiovascular morbidities. Unfortunately, these sleep problems are often ignored by parents and even if the issues are brought up with the attending medical practitioners, they are probably not educated enough to deal with the problems correctly as shown by Bruni et al. (1) The problem is further complicated by the long waiting time (2 to 60 months) for the diagnostic test, namely polysomnography, all over the world (13). The waiting time for children is probably even longer (14).

In conclusion, sleep-related problems are too important to be ignored. Hence, it is imperative for doctors involved in sleep medicine to take the lead in educating the medical students, fellow doctors, the general public as well as to devise new methods to shorten the long waiting time for diagnosis of sleep problems.

REFERENCES

1. Bruni O, Violani C, Luchetti A, et al. The Sleep Knowledge of Pediatricians and Child Psychiatrists. *Sleep and Hypnosis* 2004;3:130-138.
2. Young T, Peppard PE, Gottlieb DJ. Epidemiology of Obstructive Sleep Apnea – A Population Health Perspective. *Am J Respir Crit Care Med* 2002;165:1237-1239.
3. Marcus CL, Greene MG, Caroll JL. Blood pressure in children with obstructive sleep apnea. *Am J Respir Crit Care Med* 1998;157:1098-1103.
4. Amin RS, Kimball TR, Bean JA, et al. Left ventricular and abnormal ventricular geometry in children and adolescents with obstructive sleep apnea. *Am J Respir Crit Care Med* 2002;165:1395-1399.
5. Kwok KL, Ng DKK, Cheung YF. BP and arterial distensibility in children with primary snoring. *Chest* 2003;123:1561-1566.
6. Laberge L, Tremblay RE, Vitaro F, Montplaisir J. Development of parasomnias from childhood to early adolescence. *Pediatrics* 2000;106:67-74.
7. Liu X, Zhou H. Sleep duration, insomnia and behavioral problems among Chinese adolescents. *Psychiatry Res* 2002;111:75-85.
8. Liu X, Sun Z, Uchiyama M, Shibui K, Kim K, Okawa M. Prevalence and correlates of sleep problems in Chinese schoolchildren. *Sleep* 2000;23:1053-1062.
9. Gozal D, Pope DW Jr. Snoring during early childhood and academic performance at ages thirteen to fourteen years. *Pediatrics* 2001;107:1394-1399.
10. Agargun MY, Cilli As, Sener S, et al. The prevalence of parasomnias in preadolescent school-aged children: a Turkish sample. *Sleep* 2004;27:701-705.
11. Carskadon MA, Acebo C, Jenni OG. Regulation of Adolescent Sleep: Implications for Behavior. *Ann NY Acad Sci* 2004;1021:276-291.
12. Blunden S, Lushington K, Lorenzen B, Ooi T, Fung F, Kennedy D. Are sleep problems under-recognised in general practice? *Arch Dis Child* 2004;89:708-12.
13. Flemon WW, Douglas NJ, Kuna ST, Rodenstein DO, Wheatley J. Access to diagnosis and treatment of patients with suspected sleep apnea. *Am J Respir Crit Care Med* 2004;169:668-72.
14. Ng DK, Kwok KL, Chow PY, Cheung MY. Diagnostic Access for Sleep Apnea in Hong Kong. *Am J Respir Crit Care Med* 2004;170:196.