Inattention, hyperactivity, and symptoms of sleep-disordered breathing.


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OBJECTIVE: Inattention and hyperactivity are frequent among children with sleep-disordered breathing (SDB) and often improve when SDB is treated. However, the frequency of SDB symptoms among inattentive and hyperactive children has received little study. DESIGN: Cross-sectional survey. SETTING: Two university-affiliated but community-based general pediatrics clinics. PATIENTS: Patients consisted of N = 866 children (469 boys), aged 2.0 to 13.9 years (mean: 6.8 plus minus 3.2 years), with clinic appointments. MEASURES: A validated Pediatric Sleep Questionnaire assessed for habitual snoring (1 item), snoring severity (a 4-item subscale), sleepiness (4 items), and overall risk of SDB (16 items). Parents also completed 2 common behavioral measures, an inattention/hyperactivity scale (IHS) derived from the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, and the hyperactivity index (HI, expressed as a t score) of the Conners' Parent Rating Scale. RESULTS: Habitual snoring was reported in 16% (95% confidence interval [CI]: 13, 19) of the participants. High HI scores (>60) were found in 13% (95% CI: 11, 16) of all participants, 22% (95% CI: 15, 29) of habitual snorers, and 12% (95% CI: 9, 14) of nonsnorers. Odds ratios between HI >60 and each of the following were: habitual snoring, 2.2 (95% CI: 1.4, 3.6); 1 additional positive symptom-item on the snoring scale, 1.3 (95% CI: 1.1, 1.5); 1 additional positive item on the sleepiness scale, 1.6 (95% CI: 1.4, 2.0); and a 1-standard deviation increase in the overall SDB score, 1.7 (95% CI: 1.4, 2.0; all odds ratios age- and sex-adjusted). Results were similar for high IHS scores (>1.25). Stratification by age and sex showed that most of the association with snoring (but not sleepiness) derived from boys <8 years old. CONCLUSIONS: Inattention and hyperactivity among general pediatric patients are associated with increased daytime sleepiness and---especially in young boys---snoring and other symptoms of SDB. If sleepiness and SDB do influence daytime behavior, the current results suggest a major public health impact.

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