

Sleep-Disordered Breathing in a Population-Based Cohort: Behavioral Outcomes at 4 and 7 Years

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Abstract

OBJECTIVES: Examine statistical effects of sleep-disordered breathing (SDB) symptom trajectories from 6 months to 7 years on subsequent behavior.

METHODS: Parents in the Avon Longitudinal Study of Parents and Children reported on children's snoring, mouth breathing, and witnessed apnea at ≥ 2 surveys at 6, 18, 30, 42, 57, and 69 months, and completed the Strengths and Difficulties Questionnaire at 4 ($n = 9140$) and 7 ($n = 8098$) years. Cluster analysis produced 5 "Early" (6–42 months) and "Later" (6–69 months) symptom trajectories ("clusters"). Adverse behavioral outcomes were defined by top 10th percentiles on Strengths and Difficulties Questionnaire total and subscales, at 4 and 7 years, in multivariable logistic regression models.

RESULTS: The SDB clusters predicted $\approx 20\%$ to 100% increased odds of problematic behavior, controlling for 15 potential confounders. Early trajectories predicted problematic behavior at 7 years equally well as at 4 years. In Later trajectories, the "Worst Case" cluster, with peak symptoms at 30 months that abated thereafter, nonetheless at 7 years predicted hyperactivity (1.85 [1.30–2.63]), and conduct (1.60 [1.18–2.16]) and peer difficulties (1.37 [1.04–1.80]), whereas a "Later Symptom" cluster predicted emotional difficulties (1.65 [1.21–2.07]) and hyperactivity (1.88 [1.42–2.49]). The 2 clusters with peak symptoms before 18 months that resolve thereafter still predicted 40% to 50% increased odds of behavior problems at 7 years.

CONCLUSIONS: In this large, population-based, longitudinal study, early-life SDB symptoms had strong, persistent statistical effects on subsequent behavior in childhood. Findings suggest that SDB symptoms may require attention as early as the first year of life.

Key Words:

- [sleep-disordered breathing](#)
- [behavior](#)
- [longitudinal](#)

☐ Abbreviations:

ALSPAC — Avon Longitudinal Study of Parents and Children

CI — confidence interval

HOME — Home Observation for Measurement of the Environment

OR — odds ratio

SDB — sleep-disordered breathing

SDQ —Strengths and Difficulties Questionnaire

SES — socioeconomic status

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