

Environmental tobacco smoke exposure disturbs sleep in children: a cross-sectional study

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Abstract

Background: Environmental tobacco smoke (ETS) exposure and sleep associated problems can lead to serious health problems in children. We aimed to evaluate association between ETS and sleep disturbance in children. Methods: We enrolled 209 children without chronic health problems or acute infections aged 4 to 12 years between June 2019 and March 2020 to this cross-sectional study. Parents' smoking habits and ETS exposure of children were questioned and Children's Sleep Habits Questionnaire (CSHQ) was administered to screen for the most common sleep problems in children. "Sleep disturbance" was defined as a score ≥ 41 in CSHQ. Plasma cotinine levels were measured in all subjects enrolled and levels ≥ 3 ng/mL were defined as ETS exposure. Results: Total 115 children (55 %) were in the "sleep disturbance" group according to CSHQ, and 66 (57.3%) of them were exposed to ETS according to parental report. The children with parent reported ETS exposure had increased risk of sleep disturbance (adjusted OR: 1.3). All 209 children had plasma cotinine levels ≥ 3 ng/ml, with a mean (SD) 50.55 (13.78) ng/ml, revealing that all of them were exposed to ETS although only 105 of them were parent reported. Multivariable analysis of risk factors for sleep disturbance revealed that parent reported ETS exposure was associated with increased risks of sleep disturbance ($p=0.023$, adjusted OR: 1.9 and 95%CI: 1.09-3.3) Conclusions: Parent reported ETS exposure is associated with sleep disturbance in their children however parental reports about smoking habits may not be compatible with plasma cotinine levels of the children.

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