Letter to the Editor: Comment on ''Acute Impact of Immediate Release Methylphenidate Administered Three Times a Day on Sleep in Children with Attention-deficit/Hyperactivity Disorder''

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The study reported on in the article ''Acute impact of immediate release methylphenidate administered three times a day on sleep in children with attention-deficit/hyperactivity disorder'' (Corkum, Panton, Ironside, Macpherson, & Williams, 2008) found a significant reduction in total sleep time of almost an hour with medication compared to the no medication baseline, using actigraphy; this change was mostly due to an increase in sleep onset latency. In spite of this reduction in sleep, the medication was effective in reducing attention-deficit/hyperactivity disorder (ADHD) symptoms in these children.

The authors characterize this reduction in sleep duration as negative, citing ''recent research that has demonstrated that reduced sleep duration is associated with poorer academic, behavioral, and cognitive performance'' and giving three references. In fact, two of the three references make no such claim (Fallone, Acebo, Arnedt, Seifer, & Carskadon, 2001; Sadeh, Gruber, & Raviv, 2002); while the third reference (Dahl, 1996) is not a research report but a review, which points out, ''from a developmental perspective, there are very few data on sleep deprivation in normal children.''

Corkum and others go on to say ''it has been demonstrated that even a reduction of 1 hr per night can have detrimental effects on daytime functioning.'' The reference cited for this assertion (Sadeh, Gruber, & Raviv, 2003) actually showed an improvement in neurobehavioral functioning when the sleep of children was voluntarily extended by an hour, but there was no worsening compared to a no-change group for the children who decreased their sleep by an hour. Extending sleep worsened sleep latency, but there was a nonsignificant trend for restricting sleep to improve this measure.

While parents of children with ADHD reported more sleep problems, including shortened sleep duration, compared to reports from parents of typically developing children, Corkum et al. note that such reports ''have not been consistently confirmed using objective measures'' such as polysomnography or actigraphy. In fact, an earlier study by the same author (Corkum, Tannock, Moldofsky, Hogg-Johnson, & Humphries, 2001) demonstrated that both parent questionnaires and actigraphy found longer sleep durations in children with ADHD compared to a normal group.

An alternative hypothesis might explain these apparent discrepancies. I suggest that the disturbed sleep found in ADHD children might be caused by attempting to sleep more than needed, either because these children might need less sleep than normals, or because their parents set inappropriately early or variable bedtimes and/or permit late rising times. The additional sleep manifested by ADHD children may include an increased duration of REM sleep (Kirov et al., 2004). Could this excessive sleep, particularly the REM sleep, cause ADHD symptoms? If so, psychostimulants might exert their therapeutic effects by reducing sleep, analogous to the antidepressant effect of sleep deprivation.

Conflicts of interest: None declared.

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