Sleep, Behavioral Problems Often Linked in Teens

Study found increased cortisol near sleep onset and REM density were predictive of future depression.

BY PATRICE WENDLING
Chicago Bureau

PITTSBURGH — Adolescence is physically the healthiest period of the life span, but early adolescence appears to be a time of developmental vulnerability in relation to sleep, arousal, and emotional regulation, Dr. Ronald E. Dahl said at the International Congress of Neuroendocrinology.

This key phase of development has broad relevance to adolescent behavioral and emotional health, and should be viewed as a time of opportunity for early intervention.

Dr. Dahl and his colleagues at Western Psychiatric Institute and Clinic in Pittsburgh carried out a series of studies in children and adolescents, aged 8-16, with affective disorders that included several measures of sleep and hypothalamic-pituitary-adrenal (HPA) axis regulation.

The subjects included 128 children studied during an episode of depression, 102 children with anxiety disorders, and 102 age-matched controls who were medically and psychiatrically healthy and had negative family histories for depression.

Despite extensive subjective sleep complaints in depressed children and adolescents, younger prepubertal adolescents showed little or no objective evidence of sleep and cortisol dysregulation.

But midpubertal and older adolescents with major depressive disorder revealed evidence of EEG sleep and cortisol changes associated with adult depression, including increased sleep latency, decreased REM-latency, increased REM-density, and cortisol and growth hormone changes near sleep onset.

Increased cortisol near sleep onset and REM density were predictive of future episodes of depression, said Dr. Dahl, also the Staunton Professor of Psychiatry and Pediatrics at the University of Pittsburgh.

In contrast, children with anxiety disorders showed evidence of earlier EEG sleep and cortisol changes. The anxiety group took significantly longer to fall asleep, had less total sleep time, less slow-wave sleep, and higher levels of cortisol at bedtime, compared with the healthy controls and with children with depression.

Some changes in sleep regulation are biologic and linked to puberty; others are linked to social habits and environmental influences. Puberty is marked by increased daytime sleepiness, while changes in biologic timing systems related to the circadian system push adolescents toward more owl-like tendencies to stay up late and sleep in late.

At the same time, an increasing number of adolescents have access to stimulating activities in their bedrooms, such as MP3 players, electronic or video games, and cell phones. In addition, more are drinking caffeinated beverages. "Spiraling interactions between these domains can lead to vulnerability and spiral into serious clinical problems," Dr. Dahl said at the meeting, sponsored by the University of Pittsburgh and the American Neuroendocrine Society.

Preliminary data from a study of inadequate sleep in substance-abusing teens are provocative.

DR. DAHL

According to a National Science Foundation national sleep poll, 45% of adolescents and 62% of 9th-12th grade adolescents get an insufficient amount of sleep on school nights, averaging about 6.9 hours in the 12th grade. More than 10% of U.S. high school seniors must get up before 5:30 a.m. to catch buses.

Sleepiness and tiredness are well-known consequences of this school-sleep squeeze, he said. But sleep-deprived adolescents also suffer irritability, emotional lability, difficulties with affect regulation and cognitive-emotional integration, and deleterious direct effects on learning and memory consolidation.

A recently published study in incarcerated male juvenile and young offenders found that aggression was related to both quantity and quality of sleep (J. Adolesc. Health 2006;38:649-55).

Preliminary data from a second study indicate that inadequate sleep in substance-abusing adolescents may contribute to their experiencing aggressive thoughts and actions (Sleep 2006;29:512-20). Dr. Dahl called these results provocative not only because of the correlation between sleep and aggression but also because the study demonstrated that a 6-week integrative behavioral sleep intervention could decrease the frequency of reported aggressive thoughts and actions.

Such research raises compelling questions about specific mechanisms of sleep and affective changes, with the long-term goal of informing early intervention in high-risk populations at key points in development, Dr. Dahl said. ■

Parental Control, Overprotection Associated With Anxiety in Children

BY DAMIAN McNAMARA
Miami Bureau

MIAMI — Overprotection may be the mechanism through which parental anxiety and mood disorders lead to such disorders in their children, according to a poster presentation at the annual conference of the Anxiety Disorders Association of America.

A maternal anxiety disorder significantly predicted anxiety disorders in children in one report (J. Abnorm. Child Psychol. 2001;29:1-10). This study found that parental overprotection did not mediate the child's anxiety, although other research suggests it does. For example, parental control was specifically associated with symptoms of general anxiety disorder in children in a study showing that the more the children perceived parental behavior as anxious and controlling, the higher their reported anxiety levels were (Pers. Individ. Dif. 1998;25:1199-206).

To further elucidate the possible mediating effect of parental overprotection, Jacquelyn Doxie and associates assessed 63 children and adolescents from 7 to 16 years old. Children had to have three diagnoses—for example, phobia, social anxiety, and a mood disorder—to participate in the study. The current analysis is part of a larger study of how parental behavior might affect specific phobias in children.

The primary caregiver for each child completed the Anxiety Disorders Interview Schedule (ADIS)-Client Interview, the ADIS-Parent, and the Parental Bonding Instrument. Researchers administered the ADIS-Child to the participants to determine the number of childhood anxiety diagnoses. The investigators used two-step hierarchical regression analyses to determine if overprotection was indeed a mechanism to explain the relationship between parental and childhood anxiety.

"We found that if the parent has anxiety, then the child is more likely to," said Ms. Doxie, who is a research assistant for the child and adolescent phobia project at Virginia Polytechnic Institute and State University, Blacksburg.

Parent mood and anxiety disorder diagnoses significantly predicted the number of child diagnoses in the first step of the analysis. In the second step, researchers added overprotection to the regression analysis and found the relationship between parental psychopathology and child anxiety disorder was no longer significant. However, Ms. Doxie said overprotection was significant, "affirming the mediational role of overprotection in predicting childhood diagnoses."

In a separate presentation at the Anxiety Disorders Association meeting, Aureen Pinto Wagner, Ph.D., said parents might unwittingly fuel anxiety in their children. "Studies have shown that parents of anxious children are often overprotective."

However, she added, "Not all parents of anxious children are overprotective." The anxious child might elicit the parental behavior.

In addition, parents may deal differently with their nonanxious children. "Ask parents about how they interact with their other children," suggested Dr. Pinto Wagner, professor of neurology at the University of Rochester (New York).

The take-home message for clinicians from the current study, Ms. Doxie said, is this: "If you do see a parent who is overprotective, you might have to treat the whole family." ■

Physical Stress Often Precedes Daily Headache

BY BEN ABRAMOFF
Contributing Writer

LOS ANGELES — New daily persistent headache in children and adolescents appeared to be most often caused by a physical stress, viral illness, or minor head trauma, according to study findings reported by Dr. Kenneth Mack at the annual meeting of the American Headache Society.

Illnesses preceded the onset of new daily persistent headache (NDPH) in 43% of the 40 patients studied (range 12-18 years). Most common was infection with the Epstein Barr virus, accounting for more than half of those illnesses, said Dr. Mack, a neurologist at the Mayo Clinic, Rochester, Minn.

Minor head trauma accounted for 23%, while head surgery and idiopathic intracranial hypertension each was associated with 10% of the cases.

The onset of NDPH followed an appendectomy in one patient and high altitude climbing in another. Five patients had no identifiable inciting events.

Dr. Mack compared his results from this study with a follow-up study of 94 children (aged 7-18 years) who had a history of episodic migraines that evolved into transformed migraines.

He found that the transformed migraines that were abruptly triggered followed an illness 46% of the time and were triggered by minor head trauma 18% of the time, while individual cases were triggered by idiopathic intracranial hypertension or developed after surgery. In 25% of cases there were no identifiable preceding events.

Other etiologies that have been proposed for the onset of daily headache include analgesic overuse, psychological stress, caffeine, alcohol, and hypothyroidism, but Dr. Mack found no evidence of these in his study.

Dr. Mack noted that the onset of symptoms of NDPH and transformed migraines are very similar, as are the comorbid symptoms. He proposed that this may indicate that NDPH may be one of the first signs of transformed migraine in some patients. ■