Lack of Sleep Is Linked To Psychological Distress

BY DAMIAN McNAMARA

BASED ON A STUDY PUBLISHED IN SLEEP

Young adults who report sleeping fewer hours per night on average than do their counterparts are at elevated risk for persistent or new-onset psychological distress, according to results of a large, prospective cohort study.

Researchers found a linear correlation – a 14% greater risk for higher psychological distress for each hour slept fewer than 8, on average, per night – after they controlled for possible confounders. Sleeping 8-9 hours per night is recommended.

A total of 19,648 Australians (aged 17-24 years) reported their sleep hours for the previous month in a survey of registered drivers.

VITALS

Major Finding: A 14% increased likelihood of high psychological distress was linked with each hour fewer than 8 slept, on average, per night among young adults.

Data Source: Prospective cohort study of responses from 19,648 young adults surveyed at baseline and from 2,937 resurveyed 12-18 months later.

Disclosures: There was no industry support for the study. Dr. Nicholas Glozier is on the Sanofi-Aventis advisory board and is a speaker for CSL Laboratories. Coauthor Dr. Ian Hickie formerly served as CEO and clinical adviser for Beyondblue, the Australian National Depression Initiative, and has led projects funded by drug industry partners. The others reported no conflicts.

Researchers found almost one-third (32.5%) had high baseline levels of psychological distress (defined as a score greater than 21 on the K10 (Kessler Psychological Distress Scale), a 10-item instrument that screens for feeling "tired out for no reason," nervous, hopeless, restless, or depressed during the previous 4 weeks.

Psychological distress was most acute among the fewer than 2% of young adults who reported sleeping an average 5 hours or fewer per night, representing a group that might benefit the most from an intervention to improve their sleep routine.

Another 18% reported sleeping an average 7 hours or fewer per night, and 30% reported sleeping 7-8 hours each night.

The full findings of the study were published in the September issue of the journal Sleep (2010;33:1139-45).

Lead researcher Dr. Nicholas Glozier and his associates also resurveyed a random sample of 2,937 respondents 12-18 months later.

They found that high levels of distress persisted for 32% of the 945 who were initially distressed at baseline.

In addition, 12% of those with no initial elevated distress (239 of 1992 respondents) had new-onset distress 1 year later, reported Dr. Glozier, who is on the psychological medicine faculty at the Brain and Mind Research Institute at the University of Sydney.

Again, a linear association was found between shorter sleep duration and likelihood for onset of psychological distress (relative risk, 1.12). The risk was most pronounced among those who reported an average 5 hours or fewer of sleep (RR, 3.25), compared with the other participants.

This is the first prospective study to link shorter sleep duration in young adults with increased psychological distress, the researchers noted.

Interestingly, there was no increased risk of psychological distress at any time in the study among those who reported sleeping an average 9 hours or more per night.

Based on these findings, clinicians could potentially identify young adults who are at elevated risk for persistent or new-onset psychological distress by asking about sleep duration.

Also, because young adulthood is a time when elevated psychological distress could develop into depression and many other psychiatric conditions, short sleep duration could be an important marker for early intervention, the authors wrote.

The authors acknowledged the difficulty associated with any populationwide effort to improve sleep (such as reducing late-night television viewing, computer gaming, and Internet use).

Instead, they recommend that clinicians identify and focus their efforts on young adults who are at highest risk: those who report current distress or extremely short sleep duration.

Other researchers demonstrated an association between short sleep duration and later bedtimes with depressed mood and suicidal ideation among adolescents (Sleep 2010;33:97-106).

High psychological distress was more common among females (40%, compared with 28% of males). It was also higher among those who reported unemployment (33% vs. 28% of those employed); drug use (45% vs. 32%); harmful alcohol use (38% vs. 32%); high sensation-seeking behavior (44% vs. 22%), and recent deliberate self-harm (70% vs. 31%).

The researchers controlled for these potential confounders in the study.

Predictors of persistent distress included initial symptom severity, older age, and recent attempts at self-harm.

The authors termed presence of elevated distress at baseline and follow-up as "persistent," but said that taking measurements at only two time points is a potential limitation.

In addition, the cohort was derived from driving registration records and might not be representative of the entire population of 17- to 24-year-olds. ■

Sleep Disturbances May Be Target in PTSD Treatment

BY DIANA MAHONEY

ANALYSIS FROM THE MASSACHUSETTS GENERAL HOSPITAL PSYCHIATRY ACADEMY'S CONFERENCE ON COMPLEXITIES AND CHALLENGES OF PTSD AND TBI

BOSTON – Sleep disturbances may be an important target for treating posttraumatic stress disorder, according to Dr. R. Bruce Lydiard of the Medical University of South Carolina in Charleston.

Persistent, severe posttraumatic nightmares, REM sleep fragmentation, insomnia, excessive nocturnal periodic limb movements, and sleep-disordered breathing are frequently experienced by individuals with PTSD, Dr. Lydiard said. Although these sleep problems are often viewed as secondary symptoms of PTSD, "the evidence suggests that after a traumatic event, sleep disruption appears before the onset of PTSD and may be a risk factor for it," he proposed.

In one study, PTSD patients randomized to receive a nightly dose of prazosin reported significant improvements in sleep quality and significant reductions in trauma nightmares.

Polysomnographic data from 21 individuals with traumatic injuries showed that the number of REM periods and the (shorter) duration of REM periods within 1 month after the traumatic event were predictive of PTSD symptom severity 6 weeks later (Am. J. Psychiatry. 2002;159:1696-701).

Neurobiologically, the association makes sense, Dr. Lydiard said. "Sleep is regulated in part by brain areas in which PTSD-related changes occur," which suggests that the stress response in PTSD and sleep dysfunction may be biologically linked.

Imaging studies suggest that exposure to trauma-related stimuli leads to hyperactivation in the amygdala and decreased activation in the medial prefrontal cortex/anterior cingulate cortex and hippocampus, with the magnitude of the activation correlating with the clinical severity of PTSD symptoms.

Polysomnographic investigations in patients with PTSD and sleep disturbances have revealed increased REM density, reduced REM duration, and increased motor activity, Dr. Lydiard said.

Together with clinical reports, "these data provide the basis for REM sleep dysregulation as a core feature in PTSD," whereby increased activity in the amygdala and decreased inhibitory input from the medial prefrontal cortex lead to a persistently overactive noradrenergic system. "As a result, the usual rhythm of REM-NREM sleep is disrupted, and REM sleep is fragmented," he said.

Based on this model, investigators have hypothesized that targeting noradrenergic signaling during or near REM episodes may normalize REM sleep, which in turn might improve PTSD sleep disturbances and, potentially, other PTSD symptoms, Dr. Lydiard said.

The alpha adrenergic antagonist prazosin has shown promise in multiple case and chart reviews, open-label trials, and placebo-controlled studies.

In one trial of 40 veterans with PTSD sleep disturbance, patients who were randomized to receive a nightly dose of prazosin – originally marketed as an antihypertensive agent – reported significant improvements in sleep quality and significant reductions in trauma nightmares, as well a better overall sense of well-being and improved daily functioning (Biol. Psychiatry 2007;61:928-34).

In another study, investigators evaluated the effect of prazosin vs. placebo on objective sleep parameters in 13 outpatients with chronic civilian trauma PTSD, frequent nightmares, and sleep disturbance. The prazosin group experienced significantly increased total sleep time as well as increased REM sleep time and mean REM period duration (Biol. Psychiatry 2008;63:629-32).

In the various studies, the therapeutic benefit of prazosin was achieved within 1-2 weeks "with doses as low as 1 mg nightly," Dr. Lydiard said.

In addition to improving sleep measures, prazosin may be useful for other trauma-related symptoms. In a small study of PTSD subjects whose nightmares were well controlled with the drug, the addition of small daytime doses lessened patients' reactivity to trauma cues during the day, he said (Biol. Psychiatry 2006;59:577-81). This finding "adds to the growing body of evidence that targeting sleep in PTSD is clinically relevant."

Although some evidence exists to support the use of other antiadrenergic agents such as clonidine and guanfacine—as well as the anticonvulsant gabapentin—in PTSD, "large, randomized controlled trials are needed to clarify the role" of all of these agents, Dr. Lydiard said.

Additional studies also are warranted, he said, to investigate nonpharmacologic approaches to improving PTSD sleep disturbance, such as the use of imagery rehearsal therapy, which has demonstrated efficacy in small studies (J. Trauma. Stress 2009;22:236-9).

Dr. Lydiard disclosed receiving honoraria from Reed Medical Education, the logistics collaborator for the Massachusetts General Hospital Psychiatry Academy. ■