Study is first to show that highly variable sleep schedules predict elevated suicide risk

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Highly variable sleep schedules predict an elevated risk for suicide independent of depression in actively suicidal young adults, according to a research abstract that will be presented Tuesday, June 8, 2010, in San Antonio, Texas, at SLEEP 2010, the 24th annual meeting of the Associated Professional Sleep Societies.

Results indicate that a sample of actively suicidal undergraduate students had a delayed mean bedtime of 2:08 a.m.; restricted total sleep time of 6.3 hours; and highly variable sleep schedules, with time of mean sleep onset varying by three hours and time of sleep offset varying by 2.8 hours. However, accounting for baseline depression severity, sleep variability was the only sleep measurement to individually predict increases in suicidal risk at one week and three weeks. Sleep irregularity also was the only sleep-related variable to predict greater mood lability, which in turn predicted elevated suicidal symptoms.

"To our knowledge, this is the first study to evaluate the unique association between sleep and suicide risk using an objective assessment of sleep and a prospective study design," said principal investigator Rebecca Bernert, PhD, Fellow in the Department of Psychiatry and Behavioral Sciences at Stanford University. "We found that a high degree of irregularity in sleep predicted increases in suicidal symptoms, conferring risk above and beyond the influence of depression. Given that the relationship between sleep disturbances and suicide appears to exist independent of depressed mood, we propose that sleep disturbances may instead confer risk via impaired mood regulation and increased mood

lability."

The three-week study was conducted at the Florida State University Laboratory for the Study of the Psychology and Neurobiology of Mood Disorders, Suicide, and Related Conditions. Bernert and laboratory director Thomas Joiner, PhD, studied 49 actively suicidal undergraduate students between the ages of 19 and 23 years; 71 percent were female.

Symptom severity was assessed at baseline, one week and three weeks using the Beck Depression Inventory and Beck Scale for Suicide. Sleep data were obtained by wrist actigraphy for one week, and sleep variability was calculated as the standard deviation of sleep onsets and offsets, summed. Mood lability was evaluated across the same timeframe using daily visual analogue scale mood ratings.

According to Bernert, identifying sleep irregularity as a stand-alone risk factor for suicidal ideation could have important clinical implications.

"Compared to other suicide risk factors such as a past suicide attempt, disturbed sleep is modifiable, often visible and amenable to treatment," she said. "In this way, the study of sleep may inform suicide risk assessment and represent a clinically unique opportunity for intervention."

In 2007 Bernert and Joiner published a review of the literature on sleep disturbances and suicide risk in the journal Neuropsychiatric Disease and Treatment. Among several theories, underlying neurobiological factors such as serotonergic neurotransmission were proposed to play a role in the relationship between sleep and suicide, although this has yet to be tested.

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