Sleep Disturbances and Suicide Risk

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KEYWORDS

• Suicide • Psychiatric illness • Nightmares • Sleep disorders • Sleep interventions

KEY POINTS

- Suicide is a preventable public health problem that occurs in the context of psychiatric illness.
- Accounting for the presence and severity of psychopathology as a confounding variable is essential to clarifying whether disturbed sleep presents independent risk for suicidal behaviors.
- Preliminary research suggests that subjective sleep disturbances may serve as a stand-alone risk factor for suicidal ideation, attempts, and death by suicide.
- Sleep interventions appear to predict improvements in depression, and possibly suicidal ideation specifically.
- Additional research is needed to delineate poor sleep as a suicide risk factor and intervention tool for suicidal behaviors.

Suicide constitutes a global disease burden, accounting for over 1 million deaths annually. In the United States, suicide is responsible for over 30,000 fatalities every year, with an estimated 25 attempts occurring for every death by suicide.[1,2] Suicide is a complex, but preventable public health problem, with far-reaching personal and social consequences. Improvements in the identification of risk factors for suicide ultimately enhance the ability to intervene and prevent death by suicide.

Past research has identified biological, psychological, and social factors that confer elevated risk for suicide. Evidence suggests that disturbances in sleep are one such risk factor, predicting increased risk for suicidal behaviors. Both sleep disorders and general sleep complaints are linked to greater levels of suicidal ideation and depression, as well as both attempted and completed suicide.[3–6] Sleep problems are listed among the top 10 warning signs of suicide from the Substance Abuse and Mental Health Services Administration,[7] and preliminary evidence suggests that improvements in sleep may therapeutically impact depression and suicide risk.[8,9]

A REVIEW OF THE LITERATURE: IMPORTANT METHODOLOGICAL CONSIDERATIONS

Numerous investigations have evaluated sleep disturbances, such as insomnia symptoms, poor sleep quality, and nightmares, in relation to suicidal behaviors. Two methodological issues should be considered in reviewing this literature. The first issue involves the quality of methods, instruments, and measures used to assess sleep disturbance and suicidal symptoms. Early studies in this area often evaluated the relationship using only a single item to assess both sleep disturbance and suicidal symptoms, in many cases, drawn retrospectively from a brief depression inventory; yet rigorous, state-of-the-art assessment techniques exist for sleep difficulties (ie, objective sleep measures and validated symptom inventories) and suicide risk (ie, empirically based clinician-administered

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scales and multidimensional symptom severity instruments). The second issue involves the tendency not to adjust for the presence of psychopathology. The presence and severity of psychopathology are important potential confounders in this relationship. Suicide occurs in the presence of psychiatric illness, and over 90% of suicide decedents will have a mental disorder at the time of death.[10] In addition, both sleep disturbances and suicidal symptoms are diagnostic features of major depression.[11] Prospective investigations that utilize validated symptom measures and adjust for existing psychopathology best clarify whether poor sleep is an independent risk factor for suicide outcomes, or a mere correlate of greater psychopathology. In this article, articles have been selected and reviewed with these criteria in mind. It is organized by reports examining subjectively measured versus objectively measured sleep disturbance, and reviewed according to the type of suicidal risk evaluated (suicide ideation, suicide attempts, and suicide death).

INSOMNIA SYMPTOMS, NIGHTMARES, AND SLEEP BREATHING DISTURBANCES

Risk for Suicidal Ideation

Several investigations have examined the relationship between sleep disturbances and risk for suicidal ideation. Cukrowicz and colleagues[12] examined nightmare symptoms and suicidal ideation among a nonclinical sample of 220 undergraduate students. Insomnia and nightmare symptoms were associated with suicidal ideation, but after controlling for depression severity, only nightmares were independently associated with elevated suicidal ideation. Bernert and colleagues[13] examined self-reported sleep complaints and suicidality in a cross-sectional study of 176 psychiatric outpatients. After controlling for the influence of depression severity and other demographic factors, the association between nightmares and suicidal ideation remained significant, whereas the link between other sleep complaints (ie, insomnia and sleep-disordered breathing symptoms) and suicidality did not. Nadorff and colleagues[14] built upon this finding by evaluating insomnia and nightmares using the same self-reported symptom inventories among a nonclinical sample of 583 undergraduate students. Results again revealed that only nightmares were associated with suicidal ideation independent of symptoms of depression, anxiety, and post-traumatic stress disorder (PTSD). These findings converge somewhat with adolescent investigations. A study by Roberts and colleagues showed that, unlike the previously mentioned reports, insomnia was a significant predictor of elevated suicidal ideation with depression as a covariate.[15] A large (N = 1362) school-based survey study in China revealed that only nightmares were significantly associated with suicidal ideation after controlling for depressive symptoms.[16] Taken together, these data suggest convergence with regard to nightmares as a unique predictor of suicidal ideation. The link between insomnia and suicidal ideation remains inconsistent.

Only 1 investigation has evaluated potential sleep breathing disorders in this relationship. Krakow and colleagues[3] examined subjective sleep disturbances in 153 female sexual assault survivors with PTSD. Each woman completed various questionnaires of sleep breathing disturbances, depressive symptoms, and suicidal ideation. Participants were originally recruited for a nightmare treatment program, which may have inflated the prevalence of other co-occurring sleep complaints. Nonetheless, results indicated that women who experienced a potential sleep breathing disorder also suffered significantly greater levels of depression and suicidal ideation. Unfortunately, this study did not control for the severity of depression in this relationship to evaluate independent effects of such sleep breathing disturbances on suicide risk.

Risk for Suicide Attempts

Insomnia and nightmare symptoms also appear to serve as risk factors for overt suicidal behavior. Hall, Platt, and Hall[17] retrospectively examined the sleep of 100 consecutive patients who made suicide attempts, finding that 64% self-reported sleep onset, sleep maintenance, and terminal insomnia, and 92% reported having at least one of the three. These rates of insomnia appear disproportionately high compared with those in the general population, suggesting that complaints of insomnia may be more prevalent in those who attempt suicide than in the general public. This study did not, however, adjust for covariates to determine whether greater insomnia symptoms were explained by higher depression severity among those with a suicide attempt history.

Using a similar study design, Sjostrom and colleagues[18] retrospectively evaluated nightmares among those with a past history of suicide attempts. Results revealed that participants with nightmares had significantly higher scores on a measure of suicide risk than those without nightmares. In a subsequent study conducted by the same group, this sample was followed prospectively for 2 years.[19] Results revealed that the presence of persistent nightmares significantly predicted risk for future suicide attempts across the 2-year timeline. Even after accounting for effects of *Diagnostic and Statistical*