Dark Was the Night:

Sleep Alterations as Proximal Markers for Suicide Risk

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Sleep complaints have emerged as significant and independent predictors of suicide likelihood.[1] Recent studies published in the *Journal of Clinical Psychiatry* have taken a closer look by examining these links in more detail, focusing on the nights leading up to suicidal thoughts or behaviors.[2–6] These investigations are essential for further exploring associative signals or epidemiologic data, which, despite showing robust connections, often do not fully clarify these sleep alterations and their dynamics. Recognizing these sleep changes as early warning signs for potential suicidal behavior is crucial, facilitating immediate and tailored interventions.

As a basic but identifiable marker in clinical settings, changes in habitual total sleep time (TST) emerge as a noteworthy early risk marker. Both shorter habitual TST and longer habitual TST are linked to a higher 12-month incidence of suicide attempts.[7] Recent research investigated the relationship between nightly sleep duration and short-term suicide risk fluctuations, as well as the potential clinical utility of leveraging indices of recent (ie, over the past 3 days) patterns of sleep duration as a marker of acute suicide utilizing ecological momentary assessment (EMA) in a high-risk sample of community-based adults.[5] These studies confirmed earlier findings, which used polysomnography[8] or actigraphy,[9] that individuals who slept less than their own average amount of sleep during a given night experienced more severe suicidal desire and intent the following day. These observations were recently confirmed in another EMA study in high-risk adolescents showing that both a decrease in this TST and an increase in the sleep onset latency are both associated with a "death wish" the following day.[10] These findings are crucial for clinical practice, highlighting the importance of monitoring an individual's recent sleep duration changes, whether nightly or over several nights, as potential short-term markers of suicide risk in individuals at risk.

Prolonged wakefulness during the habitual sleep period appears also as a risk factor of suicide.[11,12] A recent Australian study confirmed this link, showing higher-than-expected suicide rates overnight associated with wakefulness after adjusting for anticipated sleep needs.[2] Whether due to episodic wakefulness, insomnia, or circadian rhythm disorders, nocturnal wakefulness can increase risk by combining circadian processes that promote sleep at night with cognitive deficits induced by sleep deprivation, social isolation, decreased mood, altered risk/reward processing, and altered cognitive functions. This concept has been framed by the "Mind after Midnight" hypothesis suggesting that disrupted sleep can acutely increase the risk for dysregulated behaviors through nocturnal wakefulness.[11,12] Consistent with these previous works, a recent study further indicates that the risk for suicide and homicide is significantly higher at night, a trend especially pronounced among young adults and those under the influence of alcohol. Specifically, after adjusting for demographic factors and population wakefulness, the research revealed a 5-fold increase in suicide risk at 3:00 AM and an 8-fold increase in homicide risk at 2:00 AM.[6] These findings underscore the critical importance of understanding and addressing nocturnal wakefulness and disrupted sleep patterns as key factors in the prevention of suicide and violent behaviors.

Alterations in dream content represent another warning sign. A new study, published in the *Journal of Clinical Psychiatry*, investigated the sequence and evolution of dream content changes before a suicidal crisis in depressed patients admitted to a psychiatric emergency department after a suicide attempt or due to suicidal thoughts with immediate intent.[3] Three different alterations were identified: bad dreams (dysphoric dreams without awakening), nightmares (dysphoric dreams with awakening), and suicidal scenarios in dreams.[3] The study found that 80% of individuals had altered dreams in the months leading up to a suicidal crisis. Furthermore, a timeline and progression of these dream content changes were noted: bad dreams began appearing 4 months before a crisis, followed by nightmares 3 months prior to the crisis, and suicidal scenarios in dreams 1.5 months before it. Therefore, asking about recent changes in dream content both is very simple to perform in clinical practice and represents a meaningful warning signal of the suicidal crisis. "How are you dreaming?" is a simple yet impactful question for health care professionals to ask individuals at risk, aiding in the early detection of suicide risk indicators.[13]

Lastly, hypnotics can sometimes act as precipitating factors, albeit primarily serving as protective agents. In the management of acute insomnia, particularly within the context of

severe depressive episodes with suicidal ideation, the use of hypnotics such as Z-drugs (eg, zolpidem, zopiclone, and eszopiclone) and dual orexin receptor antagonists (DORAs) (eg, suvorexant, daridorexant, and lemborexant) is common practice. These medications have been shown to improve sleep onset and duration, indirectly relieving depressive symptoms and suicidal thoughts.[14,15] However, there is evidence suggesting that, in some instances, these medications may paradoxically increase suicidal thoughts and behaviors.[4] A recent work published in the *Journal of Clinical Psychiatry*, which reviewed the WHO pharmacovigilance database (VigiBase) for terms related to "suicide/self-injury," distinguished between ideation and behavior (completed or attempted suicide) to differentiate potential adverse effects of hypnotic intake from cases in which hypnotics were used to commit suicide.[16] DORAs and Z-drugs were found to have a comparable risk of reported suicidal ideation, approximately twice as high as expected, with no significant difference between the medications.[16] For these 2 classes of hypnotics, a positive dechallenge occurred in one-third of the reported cases, associated with improvements in approximately two-thirds of cases related to both types of hypnotics. Suicidal behavior was reported 1.3 times more frequently than expected with DORAs, 4.7 times more frequently with Z-drugs, and 3.8 times with acetaminophen (which served as a positive control), indicating that both Z-drugs and acetaminophen are used as means for suicide.[16] Therefore, while hypnotics play a crucial role in the clinical management of acute insomnia, particularly in patients with severe depressive episodes and suicidal ideation, their potential to both alleviate and, in some cases, paradoxically exacerbate suicidal thoughts and behaviors necessitates careful monitoring and personalized assessment to ensure their safe and effective use.

In conclusion, these insightful studies highlight that various sleep alterations can serve as early markers of potential short-term suicidal thoughts or behaviors: changes in habitual TST (especially shorter durations), nocturnal wakefulness (aligned with the Mind after Midnight hypothesis), alterations in dream content (including bad dreams, nightmares, and suicidal scenarios), and, in some instances, the iatrogenic effects of hypnotics (though they are predominantly protective). These proximal markers of suicide risk can be complemented by other sleep disturbances that may also contribute, such as circadian rhythm alterations (sleep phase delay, social jetlag, evening chronotype, etc), other sleep disorders (insomnia, sleep apnea, restless legs syndrome, etc), and additional precipitating factors. These works shed light on the importance of recognizing and addressing these sleep-related issues as part of a comprehensive approach to suicide prevention and intervention. By understanding the complex interplay between sleep alterations and suicidal thoughts or behaviors, health care professionals can develop more effective screening and intervention strategies. These strategies may include personalized sleep management plans, targeted psychotherapy, and careful monitoring and adjustment of pharmacologic treatments. Ultimately, integrating sleep health into suicide prevention efforts can enhance patient care and potentially save lives, underscoring the need for ongoing research and clinical vigilance in this area.

Article Information

Published Online: June 3, 2024.
https://doi.org/10.4088/JCP.24com15359

J Clin Psychiatry 2024;85(2):24com15359
Submitted: March 25, 2024; accepted April 10, 2024.

To Cite: Geoffroy PA. Dark was the night: sleep alterations as proximal markers for suicide risk. *J Clin Psychiatry*. 2024;85(2):24com15359.

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Relevant Financial Relationships: Dr Geoffroy has received speaker honoraria from Biocodex, Bioprojet, Idorsia, Isis Medical, Janssen-Cilag, Jazz Pharmaceuticals, Lundbeck, MySommeil, and Withings; has received fees for consulting from Apneal, Biocodex, Dayvia, Di&Care, Idorsia, Janssen-Cilag, Jazz Pharmaceuticals, Myndblue, Posos, ResilEyes, and Withings; and is a member of the advisory boards of Apneal, Di&Care, Idorsia, Myndblue, and MySommeil.

Funding/Support: None.

Use of AI-Assisted Technologies: In the writing of this manuscript, the author used ChatGPT 4.0 for English editing, as they are not a native English speaker. The author has reviewed the content and takes full responsibility for the content of the publication.

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