

# Research reveals link between menstrual cycles, emotions and sleep patterns in women

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Women experience disruptions in their sleep patterns and report heightened feelings of anger in the days leading up to their period, according to new research.

The study, "Interaction of Sleep and Emotion Across the Menstrual Cycle" appearing in *The Journal of Sleep Research*, sheds new light on the intricate relationship between women's menstrual cycles, emotions, and sleep patterns.

Co-author Dr. Jo Bower, of the University of East Anglia's School of Psychology, said, "Our research provides valuable insights into the complex interplay between menstrual cycles, emotions, and sleep and the impact of hormonal fluctuations on women's well-being.

"By understanding how these factors interact, we can better address the unique needs of women in terms of sleep health and emotional well-being."

The study analyzed data from 51 healthy women aged between 18 and 35, who had regular periods and were not taking hormonal contraception.

Utilizing ecological momentary assessment (EMA) methodology, reproductive-aged women completed daily self-reports on their sleep and emotion measures and wore actiwatches (a sleep/wake tracking watch) to track sleep across two menstrual months.

The researchers discovered compelling associations between menstrual phases, emotional states, and sleep quality.

Key findings from the study include:

- Women experience disruptions in their [sleep patterns](#) in the days leading up to and during their period (peri-menstrual phase), spending more time awake at night, with a lower proportion of time spent in bed that is asleep (lower sleep efficiency).
- During the peri-menstrual phase, women report heightened

feelings of anger compared to other phases of their [menstrual cycle](#).

- Sleep disturbances during the peri-menstrual phase correlate with reduced [positive emotions](#) such as calmness, happiness, and enthusiasm.

This contributes to a growing body of evidence suggesting that menstrual cycles may play a significant role in women's vulnerability to insomnia and mental health issues.

Dr. Bower added, "The findings underscore the importance of considering hormonal fluctuations when addressing sleep disorders and emotional distress in women.

"The implications of this research reach further than just the controlled setting, providing potential pathways for interventions and treatments aimed at enhancing sleep quality and emotional resilience in women."

Although the study had unique strengths, such as the use of both objective and subjective prospective data across two menstrual cycles, the researchers said the findings must be interpreted within the context of several limitations.

For example, the data was collected between May 2020 and January 2021, and precisely how the COVID-19 pandemic impacted outcomes cannot be fully known.

Although the researchers did not find strong effects for pandemic stress on outcome variables, they cannot discount the fact that the pandemic likely impacted participants' emotional experiences and sleep-wake behaviors.

The research was led by Dr. Jessica Meers at the Center for Innovations

in Quality, Effectiveness and Safety, which is a collaboration between the Michael E. DeBakey VA Medical Center and the Baylor College of Medicine, which are both based in Houston, Texas. The University of East Anglia and the University of Houston were also partners in the research.

**More information:** Interaction of Sleep and Emotion Across the Menstrual Cycle', *Journal of Sleep Research* (2024). [DOI: 10.1111/jsr.14185](https://doi.org/10.1111/jsr.14185)

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