

#HEALTH & FITNESS

Understanding PMS and PMDD: The mental health impact of menstruation

The menstrual cycle is often regarded as a physiological process tied to reproduction. However, its influence on the brain goes much deeper. Research shows that hormonal fluctuations during the cycle reshape brain regions involved in emotions, memory, and behaviour. For many women, this can manifest in emotional and psychological challenges, particularly in the form of premenstrual Syndrome (PMS) or its more severe manifestation, premenstrual dysphoric disorder (PMDD).

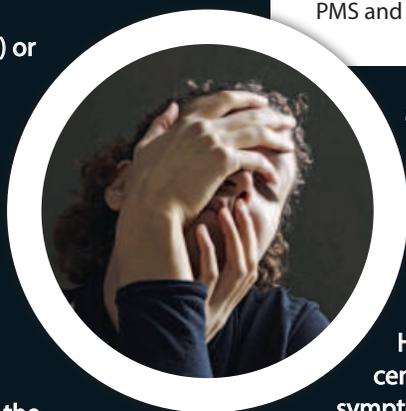
Hormonal rhythms
The menstrual cycle is orchestrated by the rise and fall of hormones, like oestrogen and progesterone. These not only affect the uterus, but also play an important role in brain function. Oestrogen, for example, has been shown to regulate the density of dendritic spines in nerve cells within the hippocampus, a region crucial for memory and learning.

Hormonal rhythms

A study conducted by neuroscientists, Elizabeth Rizor and Viktoriya Babenko, at the University of California, Santa Barbara, tracked 30 women throughout their menstrual cycles. Utilising advanced MRI techniques, the researchers observed that the brain's white matter microstructure and cortical thickness varied in tandem with hormonal changes.

These findings suggest that the menstrual cycle induces brain-wide structural modifications — extending beyond regions traditionally associated with reproductive functions.

The emotional roller coaster
The brain's response to hormonal fluctuations is not purely physical — it comes with emotional and psychological challenges. Premenstrual symptoms (PMS),



according to studies, affect up to 75 per cent of menstruating women and include symptoms like irritability, fatigue, and emotional sensitivity. However, for 3 to 8 per cent of women, these symptoms escalate into premenstrual dysphoric disorder (PMDD).

Recognised in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) premenstrual dysphoric disorder includes both psychological symptoms (such as irritability and difficulty concentrating) and physical ones (like headaches and weight gain).

"PMDD is most certainly related to the body, and I would call it a psychiatric disorder because the symptoms are psychiatric," explains Professor Dr Anwara Syed Haq, a renowned psychiatrist. "We should never overlook PMDD as something trivial, and the patient should be given the treatment she needs."

Treatment of PMDD often involves a combination of approaches, including mood stabilisers, antidepressants, and psychological counselling. In some cases, lifestyle changes like stress management and regular exercise can help alleviate symptoms.

Women with irregular menstrual cycles are advised to consult a gynaecologist to rule out other underlying conditions. This multidisciplinary approach ensures that all potential factors

Hormonal health needs more focus

According to an article published in the leading multidisciplinary science journal, *Nature*, less than 0.5 per cent of brain imaging articles published over the last 25 years consider health factors specific to women.

This gap extends to drug development, where treatments are often tested on male subjects, leading to less effective solutions for women.

Understanding the neurological basis of conditions like PMS and PMDD is a vital step towards closing this gap.

Research into how hormonal fluctuations influence brain function could pave the way for targeted treatments that address women's unique needs.

With increased awareness, better representation in research, and access to effective treatments, women can better navigate the challenges of their menstrual cycles with dignity and support. We must acknowledge that menstrual health is not just a biological issue — it's a matter of mental well-being, societal equity, and compassion.

are considered, providing a holistic treatment plan.

By Ayman Anika
Photo: Collected

