

Undiagnosed STIs can increase negative PMS symptoms

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Women that have undiagnosed sexually transmitted infections may be at greater risk of experiencing negative premenstrual symptoms (PMS), according to new Oxford University research.

The study was conducted as part of a long term partnership with the female [health](#), fertility and period-tracking app, CLUE. The findings, published in *Evolution Medicine & Public Health*, suggest that the presence of an undiagnosed STI might aggravate the negative premenstrual experience.

Despite being known to have an anti-social effect on women's lives, altering their moods, energy levels, eating habits and even sex drive, periods are not recognised as a scientific factor in the study of female health. However, since some STI infections are asymptomatic, for instance 70% of people diagnosed with Chlamydia are unaware of it, and can lead to fertility issues, the study authors caution that these results are significant, and that [reproductive health](#) needs to be taken more seriously by both the scientific community and women in general.

Dr. Alexandra Alvergne, lead-author and Associate Professor of Anthropology at Oxford University, said: 'Even now, when I write a research application on PMS, I still think 'will this be taken seriously?' that needs to change. Not understanding or even acknowledging that PMS is more than "women's raging hormones" but rather, the by-product of cyclical immunity makes it harder to identify diseases and can even delay diagnosis of infections such as STIs, which can affect women's fertility.'

The digital health study used data from 865 CLUE app users, who were asked whether they had ever been diagnosed with an STI, and if they answered yes, when they were first diagnosed and given treatment. This information was combined with data that they had logged on their menstrual bleeding patterns, experience of pain and emotional impacts and whether or not they used hormonal contraceptives.

Before diagnosis, the presence of an infection such as Chlamydia, Herpes or HPV doubled the likelihood of the woman reporting negative

PMS effects including headaches, cramps and sadness towards the end of their cycle, and generally feeling highly sensitive throughout.

The findings from this work will also be used to improve the CLUE app, and shape additional questions that would make the overall data captured more robust and useful.

Dr. Alvergne said: 'Our research shows that by better understanding their period and [menstrual cycle](#), women could potentially improve their health. If you know that severe PMS could be an indicator of an underlying STI, you are more likely to listen to your body.'

In addition to better understanding the relationship between women's sexual and menstrual health, the team's review of academic research published to date on PMS has revealed a direct link between menstrual cycling and women's overall physical health and wellbeing.

The accumulative review, published in *Trends & Ecology & Evolution*, reveals that the severity of chronic inflammatory diseases or the risk of infection depends on the phase of the menstrual cycle women are experiencing.

It asserts that the menstrual cycle modulates the immune system so that to select viable embryos, so is itself a cycle of immunity.

Dr. Alvergne said: 'The whole function of the menstrual cycle is to produce cyclical patterns of immunity, so actually we would be better to think of female health as cyclical. To truly understand women's health we need to better understand reproductive health, as the two go hand in hand.'

Previous studies have suggested a link between inflammation and depression and the Oxford research reinforces this view.

'Inflammation has a physiological cost on your body, and uses up a lot of energy that would otherwise support other functions. If a woman is experiencing a particularly strong inflammatory state as her periods approaches (menstruation is understood as an acute inflammatory event), it is likely that she will have less energy to produce serotonin—an emotional leveller. So understandably, she could well be feeling in quite a negative mind-set, and more prone to depression than at other times,' says Dr. Alvergne.

She is keen to build on the STI study by looking at the impact of additional factors, such as social status and living environment on menstruation, and whether non-[sexually transmitted infections](#) have a similar impact on reproductive health.

More information: Alexandra Alvergne et al. Do sexually transmitted infections exacerbate negative premenstrual symptoms? Insights from digital health, *Evolution, Medicine, and Public Health* (2018). [DOI: 10.1093/emph/eoy018](#)

Provided by University of Oxford

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