| A4 | Intrinsic dynamics of brain functional connectivity in relation to women's menstrual cyclic phases and its impact on their stress, life satisfaction, and emotional support |

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Research has reported that the fluctuations of sex hormones like estrogen and progesterone lead to neurological changes in the different brain regions across the menstrual cycle and its phases: menses, follicular, and luteal. Although some psychological changes have also been reported for women across their menstrual cycle, not enough studies have approached this topic from a neuropsychological perspective. For this reason, I am investigating brain connectivity fluctuations across a 32-day menstruation cycle and its impact on women's life satisfaction (LS), perceived stress (PS), and emotional support (ES). For this study, I am using the data (n=406) that has been collected by the Human Connectome Project. I am using an experimental research methodology looking at correlations (connectivity) between brain regions and associated variables of menstrual cycle phases (menses, follicular, and luteal) across a 32-day menstrual cycle, and what this tells us about the participants' LS, PS, and ES total scores. In neuroscience, artificial intelligence (AI) techniques are applied to understand complex brain functions, brain and behaviour relationships, and shows potential to diagnose neurological disorders and interventions. AI, and elastic net regression, which is a type of statistical technique for neuroimaging data, will be used to analyse the brain activity relationships that I am investigating. In my presentation, I aim to discuss whether functional connectivity in brain regions is linked to women's LS, PS, and ES, and the implications of this for menstrual health. This pilot study, by using a big data set of relatively healthy participants to further our understanding of this topic, will help to open doors for future research with similar investigating aims for more impactful menstrual related health conditions like Premenstrual Syndrome and Premenstrual Dysphoric Disorder.

Keywords
Neuropsychology; women's health; menstruation; functional connectivity