

Emotional Sensitivity and Cognitive Focus Across the Menstrual Cycle: A Sensory Analysis-Based Evaluation of Two Functional Supplements

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Abstract

Background: Hormonal fluctuations during the menstrual cycle can significantly influence emotional and cognitive states. Understanding these changes is critical for developing personalized wellness interventions. This study investigates the effect of two different functional supplements on emotional indicators across menstrual phases using a novel Sensory Analyzer device.

Objective: To evaluate the emotional and cognitive impact of two developed products (Product I and Product II) during premenstrual, menstrual, and postmenstrual phases, and among varying levels of PMS severity.

Methods: Twenty-eight female participants were divided into two groups (n=14 each) and monitored daily for emotional responses using a Sensory Analyzer over a two-week period. Emotional metrics included preference (liking), interest, concentration, calmness, and stress levels. Data were analyzed using ANOVA and t-tests across menstrual cycle phases and PMS intensity levels.

Results: Product I showed a significant improvement in concentration during the postmenstrual phase compared to the premenstrual phase ($p = 0.03458$), suggesting that while concentration may be diminished during menstruation, cognitive focus tends to improve after the menstrual phase. Product II showed a trend toward increased positive emotions ("liking") and self-affirmation during the transition from the menstrual to postmenstrual phase, although these changes were not statistically significant. Calmness also exhibited a marginal trend ($p = 0.06605$) in Product I, suggesting a possible effect on emotional regulation.

Conclusion: The findings suggest that functional supplements may help modulate emotional and cognitive states across the menstrual cycle, particularly in enhancing concentration and alleviating stress during PMS. Further studies with larger sample sizes are warranted.

Keywords

Menstrual cycle, emotion regulation, concentration, functional supplement, sensory analysis, PMS.