

## Comparison of Sexual Hormone Secretion, Executive Brain Functions, and Changes in General Health in Women with and without Premenstrual Syndrome


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## 1. Round 1

### 1.1. Reviewer 1

Reviewer:

The statement "These symptoms can significantly impact women's quality of life" should be expanded to include specific references to studies that quantify the impact of PMS on various aspects of life, such as work productivity and mental health.

The sentence "Sex hormones such as estrogen and progesterone play a significant role in the manifestation of PMS symptoms" would benefit from more detailed information about the specific physiological mechanisms through which these hormones affect PMS symptoms.

The explanation of the PMS questionnaire lacks clarity on how the scores are interpreted in relation to the severity of PMS. It would be helpful to include a description of what constitutes mild, moderate, and severe PMS based on the questionnaire scores.

While the Wisconsin Card Sorting Test is well-known, the paragraph should include a brief discussion of why this test is particularly suitable for assessing executive functions in women with PMS, possibly comparing it to other cognitive assessments.

The results of the MANOVA are presented, but the interpretation of the Pillai's Trace, Wilks' Lambda, Hotelling's Trace, and Roy's Largest Root statistics is missing. Providing a brief explanation of what these statistics indicate about the data would enhance the clarity of the results.

The ANOVA results show significant differences in executive functions and general health but not in hormone levels. The text should discuss possible reasons for the lack of significant differences in estrogen and progesterone levels, such as the timing of blood sample collection relative to the menstrual cycle.

The claim "normal women had better executive brain functions compared to women with PMS" should be contextualized within the broader literature, comparing these findings with those of similar studies and discussing possible reasons for any discrepancies.

The lack of significant differences in hormone levels is noted but not fully explained. A deeper exploration of the role of hormone sensitivity and receptor dynamics, rather than hormone concentration alone, would provide a more comprehensive understanding of the findings.

Authors revised the manuscript and uploaded the document.

### 1.2. Reviewer 2

Reviewer:

The claim "few studies have systematically and comprehensively examined the differences in executive functions between women with PMS and normal women" should be supported by a literature review that highlights the gaps in existing research, specifying what aspects have been under-explored.

The description of the sampling method ("selected using convenience sampling") raises concerns about the representativeness of the sample. A discussion of the potential biases introduced by this method and their implications for the generalizability of the results is necessary.

The document mentions the use of both independent t-tests and MANOVA but does not explain why these specific statistical methods were chosen. A brief justification for the selection of these methods, including their advantages and limitations, would strengthen the methodology section.

The table presents the means and standard deviations for various measures, but there is no mention of the potential impact of outliers on these results. An analysis or discussion of outliers, if any, should be included to validate the robustness of these findings.

The explanation for the differences in executive functions ("related to brain chemical changes during the premenstrual period") is somewhat vague. It would benefit from more specific details about the neurotransmitters involved and the relevant neurobiological pathways.

The statement "women with PMS had lower general health compared to normal women" should be expanded to discuss which specific aspects of general health (e.g., mental health, physical health) were most affected and how these findings align with previous research.

Authors revised the manuscript and uploaded the document.

## 2. Revised

Editor's decision: Accepted.

Editor in Chief's decision: Accepted.