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Premenstrual syndrome, stress and self-esteem among Young Adults

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Abstract

The research investigates the relationship between premenstrual syndrome stress and self-esteem among young adults. A sample of 200 young adults were selected for the study. Data was collected through standardized measures and analyzed using statistical techniques, including correlation. The results indicate that PMS, stress, and self-esteem show weak and non-significant relationships in this sample. Specifically, the correlation between PMS and stress is minimal, with a Spearman's rho of 0.040 and a p-value of 0.572, suggesting no meaningful association between PMS and stress. Similarly, the relationship between PMS and self-esteem is weak (Spearman's rho = 0.025) and statistically non-significant (p = 0.725), indicating that PMS does not substantially influence self-esteem. Additionally, there is a weak negative correlation between stress and self-esteem (Spearman's rho = -0.104) that also lacks statistical significance (p = 0.144), suggesting that higher stress does not significantly impact self-esteem in this sample. Overall, these findings imply that PMS, stress, and self-esteem do not exhibit strong or significant associations, suggesting that they function independently of one another in this context.

Keywords: Premenstrual Syndrome Stress; Self Esteem; Menstrual cycle; Health

1. Introduction

1.1. Premenstrual syndrome

The menstrual cycle serves as a crucial marker of reproductive health in women. However, menstrual patterns vary significantly within the initial years following menarche. Menarche represents a key milestone of puberty and, as such, is a major life event for a young girl. Research indicates that as a society's health, nutrition, and economic standards improve, the age of menarche tends to decrease. Most girls experience menarche between the ages of 10 and 16, though this age range can vary widely. The standard length of ovulatory cycles is between 21 and 35 days. Although menstrual periods typically last from 3 to 5 days, normal menstrual flow duration can range from 2 to 7 days. In the years immediately after menarche, it is common for cycles to be irregular and longer.

Menstrual disorders are frequently observed by late young adults; approximately 75% of adolescent girls report issues related to menstruation, such as delayed cycles, irregularity, painful periods, and heavy menstrual bleeding, which are among the most common reasons adolescents seek medical consultations. Numerous individual and environmental factors also influence menstrual patterns. Characteristics of menstruation, including cycle irregularity, premenstrual pain and discomfort, pain or discomfort during menstruation, and heavy menstrual bleeding, may impact a woman's overall and reproductive health.

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1.2. Stress

Stress is defined as the people's response to events that threaten or challenge them. Whether it is a paper or an exam deadline, a family problem, or even the ongoing threat of a terrorist attack, life is full of circumstances and events known as stressors that produce threats to our well-being. Even pleasant events—such as planning a party or beginning a sought-after job— can produce stress, although negative events result in greater detrimental consequences than positive ones. All of us face stress in our lives. Some health psychologists believe that daily life actually involves a series of repeated sequences of perceiving a threat, considering ways to cope with it, and ultimately adapting to the threat with greater or lesser success. Although adaptation is often minor and occurs without our awareness, adaptation requires a major effort when stress is more severe or long lasting. Ultimately, our attempts to overcome stress may produce biological and psychological responses that result in health problems.

Stress is a very personal thing. Although certain kinds of events, such as the death of a loved one or participation in military combat, are universally stressful, other situations may or may not be stressful to a specific person. Consider, for instance, bungee jumping. Some people would find jumping off a bridge while attached to a slender rubber tether extremely stressful. However, there are individuals who see such an activity as challenging and fulfilled. Whether bungee jumping is stressful depends in part, then, on a person's perception of the activity. For people to consider an event stressful, they must perceive it as threatening or challenging and must lack all the resources to deal with it effectively.

1.3. Self-esteem

Positive and negative attitude toward oneself and one's evaluation of one's own thoughts and feelings overall in relation to oneself can be defined as self-esteem. By self, we generally mean the conscious reflection of one's own being or identity, as an object separate from other or from the environment. There are a variety of ways to think about the self. Two of the most widely used terms are self-concept and Self-esteem. Self-concept is the cognitive or thinking aspect of self (related to one's self-image) and generally refers to "the totality of a complex, organized, and dynamic system of learned beliefs, attitudes and opinions that each person holds to be true about his or her personal existence.

Self-esteem is believed to be influenced by various factors like genetics, personality, life experiences, age, health, thoughts, social circumstances, the reactions of others and comparing the self to others. Self-esteem is a term used in psychology to reflect a person's overall evaluation or appraisal of his or her own worth. Self-esteem is an attractive psychological construct because it predicts certain outcomes, such as academic achievement, happiness, satisfaction in marriage and relationships, and criminal behavior.Self-esteem can apply to a specific attribute or globally. Psychologists usually regard self-esteem as an enduring personality characteristic (trait self-esteem), though normal, short-term variations (state self-esteem) also exist. Self-esteem has long been considered an essential component of good mental health and has drawn many researchers' attention in recent years. Self-esteem is composed of person's self assessment and a combination of his/her self- concept of characteristics and abilities. Our self-esteem develops and evolves throughout our lives as we build an image of ourselves through our experiences with different people and activities.

1.4. Theoretical framework

The Biopsychosocial Model (Engel, 1977) provides a comprehensive framework for understanding Premenstrual Syndrome (PMS) by considering biological, psychological, and social factors. Biologically, hormonal fluctuations, particularly in estrogen and progesterone levels, contribute to PMS symptoms, including mood swings and physical discomfort. Psychologically, emotional distress and cognitive changes related to PMS may exacerbate stress levels and impact self-esteem. Socially, cultural beliefs and societal expectations surrounding menstruation can shape how individuals perceive and cope with PMS, influencing their overall well-being. This model highlights the interconnectedness of these factors in shaping the experiences of women with PMS.

The Stress Vulnerability Model (Zubin & Spring, 1977) explains that individuals have varying degrees of susceptibility to stress, influenced by biological and psychological predispositions. PMS can increase a woman's vulnerability to stress due to hormonal changes that affect emotional regulation. Women experiencing severe PMS symptoms may struggle to manage stress effectively, leading to emotional distress and potential declines in self-esteem. This model suggests that those with preexisting stressors or lower psychological resilience may be more severely affected by PMS-related stress.

The Cognitive Theory of Stress and Coping (Lazarus & Folkman, 1984) emphasizes the role of cognitive appraisal in determining how individuals respond to stress. PMS symptoms may be perceived as a significant stressor, and a woman's coping strategies influence how well she manages its effects. Those with adaptive coping mechanisms, such as problem-focused coping or emotional regulation, may experience less psychological distress, whereas those who

perceive PMS as overwhelming may struggle with heightened stress and reduced self-esteem. This theory underscores the importance of psychological interventions that promote effective coping strategies to mitigate PMS-related distress.

The Self-Discrepancy Theory (Higgins, 1987) suggests that self-esteem is influenced by the perceived gap between an individual's actual self and their ideal or ought self. Women experiencing PMS may feel that their emotional instability, fatigue, or irritability create a discrepancy between how they see themselves and how they aspire to be. This perceived gap can contribute to feelings of frustration, dissatisfaction, and lower self-esteem, particularly if PMS symptoms interfere with their daily responsibilities and interpersonal relationships.

The Learned Helplessness Theory (Seligman, 1975) posits that individuals who experience repeated uncontrollable negative events may develop a sense of helplessness. Women with severe PMS symptoms who feel that they cannot control or alleviate their discomfort may develop a learned helplessness response, leading to increased stress and a diminished sense of self-worth. This theory suggests that chronic experiences of distress linked to PMS could result in lower motivation to seek coping strategies, further reinforcing negative emotional states and reduced self-esteem.

Objectives of the study

To assess whether there is no significant relationship between premenstrual syndrome (PMS), stress, and self-esteem among young adults.

- To assess the impact of premenstrual syndrome (PMS) on stress among young adults.
- To assess the impact of premenstrual syndrome (PMS) on self-esteem among young adults.
- To explore the relationship between premenstrual syndrome (PMS) stress and self-esteem among young adults.

1.4.1. Research Hypotheses

- H0: There is no significant relationship between premenstrual syndrome (PMS) stress and self-esteem among young adults.
- H1: There is significant relationship between premenstrual syndrome and stress among young adults.
- H2: There is significant relationship between premenstrual syndrome and self-esteem among young adults.
- H3: There is significant relationship between premenstrual syndrome (PMS) stress and self-esteem among young adults.

1.5. Significance of the study

Premenstrual Syndrome (PMS) significantly impacts many young women's daily lives, affecting their academic, work, and social performance. Investigating the link between PMS and stress is crucial, as stress can exacerbate PMS symptoms, creating a cycle that harms mental health. Moreover, PMS and high stress levels can negatively affect self-esteem, particularly during young adulthood, a critical period for identity formation. This study aims to provide a comprehensive understanding by integrating psychological, and mental health perspectives. The findings will inform the development of effective interventions, healthcare policies, and tailored programs in educational settings, ultimately enhancing young adults' well-being. By identifying risk factors and targeted interventions, this research seeks to empower and support this demographic through improved knowledge and resources.

2. Material and Methods

2.1. Research design

Quantitative research method is adopted. The sample consists of 200 young adults (18 - 25 year). Non probability: convenience sampling method will be used to collect the data.

Research design: correlational research design.

2.2. Participants

A total of 200 young adults (18-25) was taken for the study.

2.3. Inclusion Criteria

- Female participants aged 18-25 years.
- Regular menstrual cycles.
- Absence of chronic medical conditions and severe psychological disorders.

2.4. Exclusion Criteria

- Current pregnancy or planning pregnancy during the study period.
- Use of medications that could influence menstrual cycle.
- Current substance abuse or dependence.

2.5. Tools

2.5.1. Premenstrual syndrome scale

It was first developed in (Ms. P. Padmavathi1, Dr. Raja Sankar et al.,2006), to measure the severity of PMS symptoms The Premenstrual syndrome scale is one of the most extensively studied symptoms assessment instruments, although the majority of studies focused on validity rather than reliability.Each of the symptoms below, circle the number that most closely describes the intensity of your premenstrual symptoms during your last cycle. These are symptoms that would occur during the premenstrual phase of your cycle. This phase begins about seven days prior to menstrual bleeding (or seven days before your period) and ends about the time bleeding starts. It has 40 items in total and the participants are asked to respond them by selecting any one option from number one to five. Here, 1 means 'Not at All', 2 means 'Rarely', 3 means 'Occasionally', 4 means 'Often' and 5 means 'Always'.

Validity and reliability: The ability of the Premenstrual syndrome Scale to predict the development of Pus (predictive validity) has been tested extensively. Inter-rater reliability between .81 and .97 is reported.The tool has been shown to be equally reliable with adolescent girls. Sensitivity ranges from 83-100% and specificity 64-90% depending on the cut-off score used for predicting PU risk.

2.6. Perceived stress scale

It was developed by SheldonChohen (1983). The Perceived Stress Scale (PSS) is the most widely used psychological instrument for measuring the perception of stress. It is a measure of the degree to which situations in one's life are appraised as stressful. Items were designed to tap how unpredictable, uncontrollable, and overloaded respondents find their lives. The scale also includes a number of direct queries about current levels of experienced stress. The items are easy to understand, and the response alternatives are simple to grasp. Moreover, the questions are the questions in the PSS ask about feelings and thoughts during the last month. In each case, respondents are asked how often they felt a certain way.It consists of over all 10 items.

Validity and reliability: Validity was determined with extensive normative data on 2,387 respondents. Correlations of .76 and .65 were found between the PSS-10 and depressive symptoms (Cohen et al, 1983). More recent studies have indicated and validated the potential associations of perceived stress as measured by the PSS-10 and several outcomes such as stress measures, health behavior measures, self-reported health and health services, smoking status and help seeking behavior (Cohen et al, 1988; Koopman, et al., 2000). The PSS-10 was normed on both college and community samples. Internal reliability (Cronbach's alpha) for the PSS-10 was determined in three separate tests using three samples, two college students' samples and one sample including a heterogeneous group in a smoking cessation class, and Cronbach's alpha reliability coefficients ranged from .84 to .86.

2.6.1. Rosenberg self-esteem scale

The self-esteem scale was developed by Morris Rosenberg in 1965. The Rosenberg Self-Esteem Scale (RSES) is one of the most comprehensively used tools to evaluate global self-esteem perceived as an overall estimation of worthiness. The RSES is a short, ten-item measure which contains five positively (e.g., "I take a positive attitude toward myself") and five negatively (e.g., "All in all, I am inclined to feel that I am a failure") worded statements. This is a widely used self-report instrument for evaluating individual's self-esteem. The scale is a ten item Likert scale with items answered on a four-point scale- from strongly agree to strongly disagree. The respondents are asked to denote on a scale from 1 to 4 how strongly they agree (1) or disagree (4) with each assertion. The negative items are reverse scored.

Reliability & validity: Reliability and internal consistency for the scale range from 0.77-0.88. Test-retest reliability for Rosenberg's scale range from 0.82 – 0.85.

2.7. Data analysis

In this research the relationship among the variables was identified using correlational test. A correlation test examines the strength and direction of the relationship between two or more variables, without implying causality. The most common type is the Pearson correlation, which measures the linear relationship between two continuous variables, producing a correlation coefficient (r) between -1 and +1. A positive value indicates a direct relationship, while a negative value suggests an inverse relationship. A coefficient of 0 means no linear relationship.The Spearman rank correlation is a non-parametric measure used to assess the strength of a monotonic relationship, typically with non-normally distributed or ordinal data. Unlike Pearson's correlation, it ranks the values and measures how well the ranks correspond. The Spearman coefficient (ρ or rs) also ranges from -1 to +1, where +1 indicates a perfect positive monotonic relationship, -1 a perfect negative one, and 0 indicates no relationship.

3. Results and Discussion

This study aimed to examine the relationship between premenstrual syndrome stress and self-esteem among young adults. The total number of populations was taken as 200 and the questionnaires was distributed to all the participants attached to a Google form. All responses were collected through online mode.

Table 1 Spearman's Correlation Matrix for Premenstrual Syndrome, Stress and Self Esteem

Variables		PMS	Stress	Self esteem
PMS	Spearman's rho	—	0.040	0.040
	p-value	—	0.572	0.572
Stress	Spearman's rho	0.040	—	-0.104
	p-value	0.572	—	0.144
Self esteem	Spearman's rho	0.025	-0.104	—
	p-value	0.725	0.144	—

This study explored the relationships between premenstrual syndrome (PMS), stress, and self-esteem among young adults, finding weak and non-significant correlations. The correlation between PMS and stress was minimal (rho = 0.040, p = 0.572), indicating a lack of association between these variables. Similarly, the correlation between PMS and self-esteem (rho = 0.040, p = 0.572) was also weak and non-significant, suggesting that PMS does not appear to substantially affect self-esteem within this sample. A weak negative correlation was observed between stress and self-esteem (rho = -0.104, p = 0.144), pointing to a slight inverse relationship, but this was not statistically significant. This indicates that stress may not play a prominent role in influencing self-esteem among young adults in this study.

These findings diverge from previous research, which often reports stronger associations between PMS and psychological outcomes like increased stress and decreased self-esteem. One possible explanation for these non-significant findings could be the diversity in how young adults experience and manage PMS symptoms. It is plausible that many young adults in this study have developed effective coping mechanisms or possess resilience factors—such as social support or healthy lifestyle habits—that mitigate the impact of PMS on stress and self-esteem. Another potential explanation could be the variation in PMS severity among participants; if most experienced only mild symptoms, this could account for the weak relationships observed.

Despite the lack of significant associations, this study provides valuable insights into the nuanced relationships between PMS, stress, and self-esteem in young adults. It suggests that while PMS is often associated with mental health challenges, its impact on stress and self-esteem may be more complex and less direct, particularly within this demographic. Further research is warranted to determine whether specific subgroups, such as young adults with more severe PMS, might be more susceptible to experiencing heightened stress and lower self-esteem due to PMS.

4. Conclusion

In conclusion, this study aimed to explore the relationships between PMS, stress, and self-esteem among young adults. The findings indicate that there is no significant relationship between these variables, as evidenced by the statistical results which show no correlations of importance. Despite initial hypotheses suggesting a potential link, the analysis

revealed that PMS, stress, and self-esteem do not exhibit meaningful connections within the sample studied. This suggests that other factors may be influencing these psychological aspects, or that the relationships between these variables might be more complex than initially anticipated.

While the study did not find significant results, it contributes to the broader understanding of PMS and its impact on mental health. The lack of significant findings calls for further research to explore alternative variables or methodologies that could shed light on the underlying mechanisms at play. Future studies could examine additional factors such as coping strategies, social support, or lifestyle habits, which may better explain the psychological effects of PMS. Ultimately, the study underscores the need for continued investigation into the complex relationship between hormonal changes and psychological well-being, particularly in young adults.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that there is no conflict of interest.

Statement of ethical approval

Ethical considerations were rigorously adhered to in this study. Participants provided online informed consent before their involvement, ensuring they were fully informed about the study's purpose, procedures, and their rights, including voluntary participation and withdrawal without consequences. Measures were implemented to safeguard participants' privacy and confidentiality, with all data de-identified and securely stored. These ethical practices ensured the integrity of the research and the protection of participants' rights and well-being.

Statement of informed consent

Participants provided online informed consent before their involvement, acknowledging their awareness of the study's purpose, procedures, and voluntary participation rights.

This version maintains clarity, professionalism, and adherence to ethical standards.

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