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The Relationship Between Stress, Premenstrual Syndrome And Anxiety Among Girls In School And College Settings.

Ms. Mehak, Dr. Seema Singh
Student, Assistant Professor-1
Amity Institute of Psychology and Allied Sciences
Amity University, Noida, Uttar Pradesh, India

Abstract

This abstract presents a comprehensive review of the relationship between stress, anxiety, and Premenstrual Syndrome (PMS) symptoms within the context of college and school settings. The study explores the potential impact of stress and anxiety on the manifestation and severity of PMS symptoms among female students, aiming to provide insights into the interplay between these factors. Multiple studies have highlighted the association between stress and PMS, indicating that increased stress levels may exacerbate PMS symptoms. Stress triggers the release of stress hormones, such as cortisol, which can impact the delicate hormonal balance during the menstrual cycle and potentially intensify PMS symptoms. Furthermore, the demands and pressures experienced by students in educational settings may contribute to heightened stress levels, thereby influencing PMS symptomatology. Anxiety, another prevalent psychological condition, has also been linked to PMS symptoms. High levels of anxiety can amplify emotional and psychological aspects of PMS, including irritability, mood swings, and depression. The impact of educational environments on stress and anxiety levels among students is well-documented, making colleges and schools crucial settings for understanding the relationship with PMS symptoms. The competitive nature of academia, academic workload, peer pressure, and social expectations can all contribute to heightened stress and anxiety levels. These factors, combined

with the hormonal fluctuations during the menstrual cycle, may create a complex interaction that warrants further investigation. Understanding the intricate relationship between stress, anxiety, and PMS symptoms among college and school settings is essential for developing effective strategies to support female students. Identifying appropriate interventions to manage stress and anxiety, such as mindfulness practices, counselling services, and educational programs, may alleviate the burden of PMS symptoms and improve overall well-being.

Chapter 1- Introduction

1.1 Premenstrual Syndrome

Premenstrual Syndrome (PMS) is "a clinical condition that presents as physical and emotional symptoms without any underlying organic disease". (American College of Obstetricians and Gynecologists) In the last three menstrual cycles, these symptoms have appeared cyclically in the five days leading up to menstruation. Adolescent girls frequently experience anxiety and Premenstrual Syndrome (PMS). Up to 85% of women will experience PMS at some point in their lives. PMS is a group of behavioural, emotional, and physiological symptoms associated with the menstrual cycle. (Reed, Haugen, & McCann, 2019).

Being a common disorder in teenage girls of reproductive age, PMS is associated with strained family and social ties, work interruptions and absences, higher healthcare costs, and increased healthcare utilization. Personality characteristics are crucial in adolescents' self-perceived health and dealing with a variety of health concerns. How people perceive their daily life situations largely depends on people's personality traits and daily hassles can also be seen as a significant cause of PMS in women who are more susceptible to it. (Ernst et al. 2011)

To be categorised under premenstrual syndrome, a person must report of any five of the following signs in the one week before their cycle - they must have a significant negative impact on their daily life: "a persistent irritability, or an increase in interpersonal conflicts, a markedly depressed mood, feelings of helplessness, feelings of being on edge or anxious, a markedly vulnerable affect, a decrease in interest in routine activities, a subjective feeling of difficulty focusing, lethargy, or ease of fatigue, extreme changes in appetite, overeating, or food cravings, hypersomnia or insomnia". (American Psychiatric Association, 2013)

Progesterone levels begin to rise while estrogen levels remain low during the menstrual phase. Eventually, during the follicular phase, estrogen levels rise. Concerns have been raised about the psychological effects of estrogen hormone during menstruation by researchers and mental health professionals. Studies have demonstrated that the hormone estrogen has a direct effect on brain activities that influence a woman's emotional and cognitive health. (Jessie, K., 2022)

1.2 Anxiety

Anxiety, on the other hand, is a feeling of unease or worry about something with an uncertain outcome. Anxiety is a common human emotion that can manifest in various forms, such as feelings of nervousness, apprehension, or worry.While some degree of mild anxiety may be unavoidable in daily life, excessive or ongoing anxiety can be harmful to one's mental health. (American Psychological Association, n.d.).

1.2.1 Types of Anxiety Disorders

There are various types of anxiety disorders, and each has its own unique combination of symptoms and characteristics. These are a few of the most prevalent anxiety disorders. -

GAD: Generalised Anxiety Disorder People who have GAD frequently lack explanations for their excessive worry and fear about commonplace events or activities.

Panic Disorder: An intense period of fear or discomfort that peaks in minutes characterises panic disorder, which is characterised by unforeseen and recurrent panic attacks.

Separation Anxiety Disorder: People with social anxiety disorder (SAD) are afraid of being observed or judged by others, which causes them to avoid social situations.

Obsessive-Compulsive Disorder : " It is characterised by "unwanted thoughts" or obsessions that cause repetitive or compulsive actions, such as excessive cleaning or checking".

Post-Traumatic Stress Disorder (PTSD): PTSD is characterised by intrusive memories, avoidance behaviours, and increased anxiety and arousal. It can develop after a traumatic event.Specific

Phobias: Specific phobias include extreme fear of and avoidance of a particular thing or circumstance, such as flying or spiders. (American Psychiatric Association, 2013)

Certain mental health conditions such as "thyroid", heart problems, "caffeine use" or other substances, can heightened the level of anxiety symptoms. (National Institute of Mental Health, 2021)

1.3 Stress

"Any change that puts pressure on the body, mind, or emotions" is referred to as stress. Stress is the body's response to anything that requires concentration or action. (American Psychiatric Association) Common signs of stress include "changes in mood", "sweaty or clammy palms", "decreased sex desire", "diarrhoea", "trouble sleeping", "digestive problems", "dizziness". (American Psychological Association, n.d.)

1.3.1 Signs and symptoms of stress -

- psychological signs such as "difficulty concentrating", "worry", "anxiety", and "memory loss".
- emotional signs such as "anger", "annoyance", "moodiness", or "frustration".
- "Poor self-care, poor time management, substance abuse , weak coping mechanisms", "high blood pressure, weight changes, recurrent infections or colds, adjustments to the menstrual cycle and libido", and so on are all behavioural indicators. (American Psychological Association, n.d.)

1.3.2 Types of Stress

There are several types of stress that individuals may experience. Here are some common types:**Acute Stress:** The most prevalent type of stress, acute stress, is the immediate, short-term reaction to a particular event or situation. It may be brought on by regular stresses like deadlines, tests, or traffic jams. **Chronic Stress**: Chronic stress is long-term and continuous stress that persists over an extended period. **Episodic Acute Stress:** Some individuals experience frequent episodes of acute stress.This pattern of recurring acute stress can lead to high levels of tension, irritability, and a sense of always being under pressure.**Traumatic Stress:**Traumatic stress is a reaction to a traumatic event, such as a natural disaster, an assault, or a situation in which one's life is in danger.**Occupational Stress:** This type of stress specifically relates to work-related factors. It can arise from excessive workloads, time pressures, lack of control, conflicts with colleagues, or job insecurity. Occupational stress can have negative consequences on job performance, job satisfaction, and overall well-being. **Relationship Stress**: Relationship stress refers to the strain and tension experienced within interpersonal relationships, such as romantic partnerships, family dynamics, or friendships. (HSE, n.d.).

1.3.4 Stress Response Theories

a) Fight or Flight Response

The fight-or-flight response is a "physiological response that occurs automatically in response to a stressful or frightful occurrence". As the threat is sensed, the sympathetic nervous system is activated urging the body to prepare for either confronting or withdrawing from the situation.

The "defence cascade" is their more complex model of physiologic, psychological, and behavioural reactions to threat. They include "freeze, flight, fight, fright, flag, and faint" among the possible reactions of people who are threatened or might have experienced trauma.. (Schauer and Elbert's, 2010)

b) General Adaptation Syndrome (GAS Model)

General adaptation syndrome (GAS) describes "the physiological changes your body goes through in response to stress. These changes occur in three stages: the alarm response, also referred to as the "fight-or-flight" response, the resistance phase, when your body heals, and the exhaustion stage". (Cunanan AJ, 2018)

Alarm Stage: When someone encounters a stressor—which could be a psychological or physical danger—it occurs. The "fight-or-flight" response is triggered during this period of high alert in the body. “The sympathetic nervous system is stimulated, which results in the “release of stress hormones like cortisol and adrenaline”. These hormones increase heart rate, blood pressure, and breathing as they prepare the body to deal with the stressor.

Resistance Stage: The body enters the resistance stage if the stressor continues after the alarm stage. The body attempts to adjust to the ongoing stressor and maintain physiological equilibrium during this phase. . The body continues to release cortisol in order to maintain the high energy levels and handle the stressor. However, the body's resources are now mobilised and focused on managing the stress. If the stressor is successfully dealt with, the body returns to its equilibrium state.

Exhaustion Stage: If the stressor persists for a long time or if the body is unable to adapt during the resistance stage, the exhaustion stage starts. Stress hormones are constantly being released by the body, which leads to both physical and emotional exhaustion. The individual may display symptoms of "fatigue", "burnout", "lowered immunity", and "increased susceptibility to illness".

1.4 Recognizing adolescence

In terms of development and health, adolescence is a stage of life with particular requirements and rights. Additionally, “this is a time for developing knowledge and abilities, interpersonal skills, and other qualities and abilities necessary for enjoying adolescence and performing adult roles” (Erikson, 1963) . During adolescence, a child makes the transition from being “dependent on their parents to independence, autonomy, and maturity. Belonging to a circle of friends takes on more significance as an adolescent starts to “transition from the family group serving as their primary social structure to the family playing a smaller role”. The teenager will eventually become an independent adult as a result of this. Independence increases along with freedom, yet freedom also entails obligations. (Kroger, J.,2003)

Biological Challenges

“ Puberty, the first distinct maturation event, marks the start of adolescence ”. The modifications brought on by the release of the sexual hormones that influence emotions are categorised as biological difficulties. “Increased mood swings can affect relationships with family members at home, in social situations, or at school”. (Erikson 1968)

Cognitive Challenges

Teenagers go through a cognitive transition from "concrete operations" to "formal operations", according to Piaget's theory of social development. As a result, they are capable of handling concepts, ideas, and abstract theories. They may use poor judgement when using these recently acquired skills, and confidence must gradually grow. Adolescents face a challenge in their learning process because it requires them to take lessons from both successes and failures. (Berger,K.S. , 2014)

Psychological Challenges

As the adolescent makes the transition from childhood to adulthood, they encounter psychological challenges. The rules will change and possibly more demands will be made of him or her as a result of the emergence of a new personality, demanding the maintenance of a certain code of conduct. Parental and judicial expectations of accountability are rising. Adolescents must continually "adapt to both new experiences and the various biological and social changes that are occurring to them as they continue on their path to self-discovery". (Berger,K.S. , 2014)

According to various studies, PMS affects 20% to 50% of adolescent girls. According to one study, 38% of adolescent girls in India experience PMS symptoms. On the other hand, anxiety disorders, with a prevalence rate of 10% to 20%, are the most prevalent mental health disorders among adolescents. According to one study, anxiety affects 19% of adolescent Indians. (Katijukua & Simon, 2020) Young girls may find it challenging to concentrate in class as a result of the physical symptoms of PMS, which include headaches, cramps, and fatigue. On the other hand, anxiety results in emotional distress that impairs cognitive function. These effects are exacerbated by the strain of long school days.

In addition to anxiety, mood disorders, eating disorders, substance use disorders, and sleep disorders have all been linked to PMS (Rapkin & Winer, 2019). PMS symptoms can also make mood disorders like depression or bipolar disorder worse. The onset or worsening of eating disorders like binge eating disorder or bulimia can be brought on by changes in appetite, food cravings, and weight gain that occur during PMS

In addition to lowering quality of life, these psychiatric disorders have been linked to "criminal activity", "educational failure", "early sexual experience", "adult depression", "low self-confidence" and its repercussions, and finally, “work, family, and social dysfunction"(Wilmer MT, Anderson K, 2021)

In India, the standard working hours for school is approximately 6 hours whereas universities and colleges have a more flexible schedule, as they offer a variety of courses and programs. Classes can be scheduled from morning to evening, and it often depends on the availability of faculty and facilities. Long college hours can significantly affect students' stress and anxiety levels, including female students. Stress can worsen pre-existing mental health conditions or start new ones. An excessive workload and time demands can contribute to this. Girls' physical and emotional health, including premenstrual syndrome symptoms, may be impacted by stress when it comes to their menstrual cycle.

While the exact nature of this relationship is still being investigated, my goal in conducting this study is to determine whether there is a connection between PMS symptoms, stress, and anxiety in college- and school-going girls. In order to help young people manage the impact of these factors on their “mental and physical

well-being", it is crucial for "educators", "parents", and "healthcare professionals" to be considerate of these potential connections.

Chapter 2: Review of Literature

Chau and Chang (2000) conducted research to determine whether a premenstrual syndrome education program was successful in increasing awareness and reducing the severity of PMS symptoms. 94 schoolgirls, ages 14 to 18, from four secondary schools in Hong Kong served as the sample and were divided into the "experimental" and "control groups". Following the educational program, "the experimental group of schoolgirls significantly increased their Premenstrual Syndrome Knowledge Questionnaire knowledge scores.Schoolgirls in the experimental group reported a significant drop in their total PMS ratings, per data from a translated version of Abraham's Menstrual Symptom Questionnaire.

Mohamadirizi (2011) using a two-step random sampling procedure, conducted a "cross-sectional study with 407 high school girls in Mashhad". During each of the three phases of their cycle, the students provided information on their demographics, menstruation, the Depression, Anxiety, and Stress Scale (DASS-21), and menstrual signs. 74 percent of the participants reported premenstrual symptoms, 94 percent reported symptoms during bleeding, and 40.8% reported symptoms after their period, according to the findings. About 44.3%, 45.5%, and 47.2% of the participants reported experiencing anxiety, depression, or stress, respectively. Menstrual symptoms and stress, anxiety, and depression were significantly positively correlated, according to the Pearson correlation coefficient test.

Viner (2006) found that school-related stress, including long school hours and homework, was associated with increased menstrual symptoms in adolescent girls. The study suggests that stress may disrupt the hypothalamic-pituitary-gonadal (HPG) axis, which regulates the menstrual cycle, and contribute to the development of PMS.

Katjiukua (2020), conducted a study to "evaluate the occurrence and understanding of premenstrual syndrome among teenagers and how well educational tools work to increase their understanding of PMS." A total of 874 articles were initially identified from PubMed, with 18 articles from the years 2008-2019 being reviewed. The findings from these articles revealed that in each study, more than 50% of adolescent girls experience PMS, and the findings showed that girls lacked awareness of PMS. However, the implementation of interventions aimed at educating the girls resulted in improved knowledge about PMS, demonstrating the effectiveness of educational programs in increasing knowledge about PMS. The prevalence of PMS among female students is high, and every adolescent girl should be aware of PMS and its effects, , as well as methods for managing it. In order to lessen the prevalence of these issues, secondary school curricula should include health education lessons on PMS and menstrual problems.

Golub S (1981), aimed to investigate the relationship between menstrual distress, anxiety, and depression in a group of adolescent girls. The study involved 158 female subjects aged 15 to 16 who completed the Menstrual Distress Questionnaire. Additionally, the participants provided information about the timing of their subsequent two periods. The study also included male classmates of the female students who completed the Depression Adjective Check List and the State-Trait Anxiety Inventory twice, with a two-week interval, in a separate classroom. The researchers evaluated the levels of anxiety and depression in 29 adolescents tested within four days of the start of menstruation and 23 adolescents tested during the first four days of menstruation. The researchers compared the test outcomes from the premenstrual, menstrual, and intermenstrual phases of the menstrual cycle. They found no noticeable differences in mood that could be attributed to the specific phase of the cycle. A control group of males also showed no observable differences in mood. The study indicated that teenage girls and women exhibit different patterns of anxiety and depression during the premenstrual stage of the menstrual cycle compared to women over the age of 30.

Dennerstein, L. (1984) examined that many women do exhibit cyclical changes in affect, according to evidence from both retrospective and prospective studies. The premenstrual and menstrual phases are when negative changes like irritability, headaches, tension, anxiety, disturbed sleep, and depression are more common. In the follicular or mid-cycle phases, "positive changes, pleasantness, increased vigor, and elation are more frequently reported". Many theories have been put forth to account for these changes. These cover biological, sociological, and psychodynamic explanations. Although each theory is partially supported by evidence, no firm conclusions can be drawn regarding the etiology of the majority of affective changes. The numerous methodological issues outlined have a limit on how studies that attempt to link hormonal and affective fluctuations should be interpreted.

Chapter 3: Methodology

3.1 Hypothesis:

H1: Increased PMS symptoms are positively associated with higher levels of anxiety, resulting in elevated stress levels.

H2: College-going girls will report higher levels of stress and anxiety compared to school-going girls

3.2 Sample:

The sample for this study will consist of college and school-going girls within a specific geographical region. The participants will be recruited using a combination of convenience sampling and random sampling techniques.

- **Inclusion Criteria:**

- Female students aged between 14 and 25 years.
- Enrolled in colleges or schools within the specified region.

- Regular menstrual cycles (21-35 days) for the past six months.

- **Exclusion Criteria:**

- Girls with known medical conditions or taking medications that may affect PMS symptoms.
- Girls currently undergoing hormonal treatments or contraceptives that may alter menstrual cycles or PMS symptoms.

3.3 Data Collection:

Data will be collected using surveys. The surveys will include validated measures of PMS symptoms and anxiety levels and stress level. The individuals were asked to participate in self-report measures such as the "Premenstrual Symptoms Screening Tool (PSST)" and "Beck Anxiety Inventory (BAI)" and "Perceived Stress Scale (PSS)" . The data collected will be used to find the impact of stress and anxiety on PMS symptoms amongst college and school going girls.

In order to account for any potential confounding factors, the questionnaire will also collect demographic information such as "age", "gender", and "educational level".

Utilising quantitative methods, the information gathered through the interview and questionnaires will be analyzed. Statistical methods like correlation, multiple regression analysis, and t-tests will be used to analyze the questionnaire's quantitative data.

3.4 Ethics

Before taking part, participants will receive complete information about the study and give their informed consent. Throughout the study, confidentiality and anonymity will be upheld, and all data will be securely stored and only available to the research team.

3.5 Research Instruments

Beck Anxiety Inventory:

The 21 multiple-choice questions The Aaron T. Beck 's Beck Anxiety Inventory (BAI) is a tool used to measure anxiety in adolescents and adults aged 17 and older. Throughout the "past week (including the day you take the test)", the subject was asked about common anxiety symptoms like tingling and numbness, sweating that isn't related to heat, and fear of the worst. The Beck Anxiety Inventory (BAI) comprises 21 questions, graded on a scale from "0" (not at all) to "3" (very severely). Higher total scores on the inventory suggest more pronounced anxiety symptoms. The following are the standard thresholds: "0-7: Minimal", "8-15: Mild", "16-25: Moderate", and "26-63: Severe".

Internal consistency for the BAI = "(Cronbach's a=0.92)", indicating reliability. Test-retest reliability for the BAI = "0.75" after one week.

Validity: The BAI had a mildly positive correlation with the Hamilton Depression Rating Scale (.25) and a moderately negative correlation with the Hamilton Anxiety Rating Scale (.51).

The Premenstrual Symptoms Screening Tool (PSST)

Premenstrual symptoms screening test is a diagnostic tool designed to assess and evaluate the presence and severity of symptoms associated with premenstrual syndrome (PMS) or premenstrual dysphoric disorder (PMDD). The test typically consists of a series of questions or statements related to various symptoms commonly experienced during the premenstrual phase. Individuals are asked to rate the frequency and severity of their symptoms based on a predetermined scale. The screening test aims to provide insights into the presence and intensity of premenstrual symptoms, aiding in the diagnosis and management of PMS or PMDD.

Perceived Stress Scale

Self-report questionnaire the "14-item Perceived Stress Scale (PSS; Cohen et al., 1983) is frequently used to gauge how stressful one perceives particular circumstances in one's life". The PSS items assess how much people believe their lives are "unpredictable, uncontrollable, and overloading" in order to gauge overall stress. They are general in nature rather than event-specific. Respondents rate how often they have felt and thought about things that have happened in their lives over the past month on a five-point scale that ranges from "(0) Never to (4) Very Often". A final score generated by the PSS reflects the overall level of perceived stress.

3.6 Statistical Analysis

To find the relationship between Stress, Premenstrual syndrome symptoms and Anxiety among girls in school and college going settings , Correlation and t-test has been employed using SPSS version 26.0.

Chapter 4: Result

The present study aims "to investigate the relationship between stress, premenstrual syndrome (PMS) symptoms, and anxiety among girls in both school and college settings" . A sample of participants was recruited from various educational institutions, and they were assessed using standardised measures of stress, Premenstrual Syndrome symptoms, and anxiety.

The correlation analysis was conducted to examine the relationship. The results revealed significant correlations among the variables.

Table 1

Correlation between anxiety, stress and premenstrual syndrome

Correlation			
	Anxiety	**Stress**	**PMS**
Anxiety	1	.358**	.474**
Stress	.358**	1	.466**
PMS	.474**	.466**	1
**Correlation is significant at the 0.01 level (2-tailed).			

The results suggest that there is a positive relationship between Anxiety, Stress, and PMS symptoms. This may have important implications for understanding the complex interactions between psychological and physical health. Below is the analysis of Table 1.

- ➔ Stress and anxiety have a significant positive correlation (r =.358, p .01). This shows that stress levels tend to rise along with anxiety levels.
- ➔ PMS and anxiety have a significant positive correlation (r =.474, p .01). This suggests a correlation between higher levels of anxiety and PMS symptoms.
- ➔ Stress and PMS have a statistically significant positive correlation (r =.466, p .01). This suggests that PMS symptoms increase along with stress levels.

Table 2

T-Test

School/College		**N**	**Mean**	**Std.Deviation**	**Std.Error Mean**
Anxiety	**College**	60	64.35	7.107	.917
	School	60	54.38	6.793	.877
Stress	**College**	60	34.37	4.186	.540
	School	60	27.95	6.698	.865
PMS	**College**	60	82.42	5.846	.755
	School	60	69.75	4.894	.632

1. **Anxiety:**
    - College group: The average anxiety score for college students is 64.35, with a 7.107 standard deviation and a 0.917 standard error mean.
    - School group: With a mean anxiety score of 54.38, a standard deviation of 6.793, and a standard error mean of 0.877, the school group has a moderate level of anxiety.

2. **Stress**:
    - College group: The college group's mean stress score is 34.37, with a standard deviation of 4.186 and a mean standard error of 0.540.
    - School group: With a mean stress score of 27.95, a standard deviation of 6.698, and an error mean of 0.865, the school group has a mean stress score.

This indicates that, on average, the college group reports higher levels of stress (34.37) compared to the school group (27.95). The standard deviation and standard error mean provide information about the variability and precision of the mean scores within each group.

3. **PMS (Premenstrual Syndrome):**
    - College group: With a mean PMS score of 82.42, a standard deviation of 5.846 and a standard error mean of 0.755, the college group has a mean PMS score.
    - Group at school: The mean PMS score for the group at school is 69.75, with a 4.894 standard deviation and a 0.632 standard error mean.

The results of the independent sample t-tests indicate significant difference between the two groups in terms of the variables measured. The t-values for Anxiety (7.853), Stress (6.293), PMS (12.868). For the variable "Anxiety," the p-value is (.000). For the variable "Stress," the p-value is (.000) , for the variable "PMS" (Premenstrual Syndrome), the p-value is (.000) . These p-values indicate that the observed differences in means for all three variables (Anxiety, Stress, and PMS) are statistically significant, as the p-values are less than the conventional significance level of .05.

This suggests that, on average, the college group reports higher levels of PMS symptoms (82.42) compared to the school group (69.75). The standard deviation and standard error mean provide insights into the variability and precision of the mean scores within each group.

In conclusion, the results suggest that the two groups significantly differed in terms of anxiety and stress levels.Therefore, College-going girls report higher levels of stress and anxiety compared to school-going girls.

Chapter 5: Discussion & Conclusion

The present study aimed to investigate the relationship between stress, premenstrual syndrome (PMS) symptoms, and anxiety among girls in both school and college settings. A sample of participants was recruited from various educational institutions, and they were assessed using standardised measures of stress, Premenstrual Syndrome symptoms, and anxiety.

The study involved the use of questionnaires. The sample size comprised 120 students from private and government schools and universities in Delhi and NCR, in the age group of 14-25 years. "Beck Anxiety Inventory, Premenstrual syndrome screening test and Perceived Stress Scale was used to collect data". "Descriptive and inferential statistics" were used to analyze the data, and statistical tools like correlation analysis and t-tests were used to determine how the variables of interest related to one another and how they differed from one another.

Hypothesis 1 stated that "Increased PMS symptoms are positively associated with higher levels of anxiety, resulting in elevated stress levels." The correlation analysis showed that there was a significant positive relationship between Anxiety, Stress, and Premenstrual Syndrome. Higher levels of Anxiety were associated with Stress ($r = .358$, $p < .01$) and higher levels of Anxiety were associated with PMS symptoms ($r = .474$, $p < .01$) and lastly higher level of stress was associated with severe PMS symptoms ($r = .466$, $p < .01$). These findings demonstrate that anxiety, stress and premenstrual syndrome are related constructs.

Hypothesis 2 stated that "*College-going girls will report higher levels of stress and anxiety compared to school-going girls".* The mean scores of the two groups for each variable were compared using the independent samples t-tests to see if there were any significant differences. According to the findings, there were significant differences between the two groups' levels of stress and anxiety. As a result, compared to school-going girls, college-bound girls report higher levels of stress and anxiety. These findings highlight the importance of addressing anxiety and stress in the targeted group to promote their psychological well-being.

The dissertation explored the relationship between stress, premenstrual syndrome (PMS) symptoms, and anxiety among girls in both school and college settings. The findings revealed valuable insights into the complex interactions between these variables.

This finding highlights the interconnected nature of these two psychological constructs and underscores the importance of considering their mutual influence when addressing the well-being of girls in educational settings.

Additionally, there was a strong positive correlation between PMS symptoms and anxiety. This suggests that increased anxiety is linked to PMS symptoms that are more severe.

Understanding this relationship is crucial as it sheds light on the potential influence of psychological factors on the experience of PMS symptoms among girls. It also suggests that interventions targeting anxiety management may have the potential to alleviate PMS symptoms.

Recognizing this association is essential for developing comprehensive support strategies that address the interplay between stress and the experience of PMS symptoms in girls.

Overall, these results contribute to a better comprehension of the dynamic interplay between stress, PMS symptoms, and anxiety in girls within school and college settings. The results highlight the importance of considering the psychological well-being of girls, particularly during times of increased stress and PMS symptomatology.

The implications of this study extend to educational institutions, healthcare providers, and policy-makers. Recognizing the impact of stress, PMS symptoms, and anxiety on the well-being of girls can guide the development of targeted interventions, support programs, and policies that aim to improve mental health outcomes. By addressing these interconnected factors, educational institutions and healthcare providers can create nurturing environments that promote the psychological well-being of girls, optimise academic performance, and foster overall holistic development.

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Appendix A

Beck Anxiety Inventory (BAI)

Below is a list of common symptoms of anxiety. Please carefully read each item in the list. Indicate how much you have been bothered by that symptom during the past month, including today, by circling the number in the corresponding space in the column next to each symptom.

	Not at all	**Mildly, but it didn't bother me much**	**Moderately – it wasn't pleasant at times**	**Severely – it bothered me a lot**
Numbness or tingling	**0**	**1**	**2**	**3**
Feeling hot	**0**	**1**	**2**	**3**
Wobbliness in legs	**0**	**1**	**2**	**3**
Unable to relax	**0**	**1**	**2**	**3**
Fear of worst happening	**0**	**1**	**2**	**3**
Dizzy or lightheaded	**0**	**1**	**2**	**3**
Heart Pounding/ racing	**0**	**1**	**2**	**3**
Unsteady	**0**	**1**	**2**	**3**
Terrified or	**0**	**1**	**2**	**3**

afraid				
Nervous	**0**	**1**	**2**	**3**
Feeling of choking	**0**	**1**	**2**	**3**
Hands Trembling	**0**	**1**	**2**	**3**
Shaky/unsteady	**0**	**1**	**2**	**3**
Fear of losing control	**0**	**1**	**2**	**3**
Difficulty in breathing	**0**	**1**	**2**	**3**
Fear of dying	**0**	**1**	**2**	**3**
Scared	**0**	**1**	**2**	**3**
Indigestion	**0**	**1**	**2**	**3**
Faint / lightheaded	**0**	**1**	**2**	**3**
Face Flushed	**0**	**1**	**2**	**3**
Hot/ cold sweats	**0**	**1**	**2**	**3**

Appendix B

Perceived Stress Questionnaire (PSQ)

For each sentence, circle the number that describes how often it applies to you in general, during the last year or two.

	Almost	**Sometimes**	**Often**	**Usually**
You feel rested	1	2	3	4
You feel that too many demands are being made on you	1	2	3	4
You are irritable or grouchy	1	2	3	4

You have too many things to do	1	2	3	4
You feel lonely or isolated	1	2	3	4
You find yourself in situations of conflict	1	2	3	4
You feel you're doing things you really like	1	2	3	4
You feel tired	1	2	3	4
You fear you may not manage to attain your goals	1	2	3	4
You feel calm	1	2	3	4
You have too many decisions to make	1	2	3	4
You feel frustrated	1	2	3	4
You are full of energy	1	2	3	4
You feel tense	1	2	3	4
Your problems seem to be piling up	1	2	3	4
You feel you're in a hurry	1	2	3	4
You feel safe and protected	1	2	3	4
You have many worries	1	2	3	4
You are under pressure from other people	1	2	3	4
You feel discouraged	1	2	3	4
You enjoy yourself	1	2	3	4

You are afraid of the future	1	2	3	4
You feel you're doing things because you have to not because you want to	1	2	3	4
You feel criticized or judged	1	2	3	4
You are lighthearted	1	2	3	4
You feel mentally exhausted	1	2	3	4
You have trouble relaxing	1	2	3	4
You feel mentally exhausted	1	2	3	4
You feel loaded down with responsibility	1	2	3	4
You have enough time for yourself	1	2	3	4
You feel under pressure from deadlines	1	2	3	4

Appendix C

Premenstrual Symptom Screening Test

Instructions: Do you experience some or any of the premenstrual symptoms before one week or after your periods.

	Not at all	**Mild**	**Moderate**	**Severe**
Anger / irritability	0	1	2	3
Anxiety	0	1	2	3

Tearful	0	1	2	3
Depressed Mood	0	1	2	3
Decreased interest in work activities	0	1	2	3
Decreased interest in home activities	0	1	2	3
Fatigue/lack of energy	0	1	2	3
overeating/ food cravings	0	1	2	3
Insomnia	0	1	2	3
Hypersomnia	0	1	2	3
Feeling overwhelmed	0	1	2	3
physical symptoms (including breast tenderness, headaches, joint / muscle pain, bloating, weight gain)	0	1	2	3
Have your symptoms as listed above, interfered with :				
	Not at all	**Mild**	**Moderate**	**Severe**
Your school/ work efficiency of productivity	0	1	2	3
Your relationships with friends/classmates/coworkers	0	1	2	3
Your relationships with your family	0	1	2	3

Your social life activities	0	1	2	3
Your home responsibilities	0	1	2	3