

# Perceived Stress and Mental Health during the Menstrual Cycle in Adolescents in Selected College

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DOI: <https://doi.org/10.52403/gijash.20260206>

## ABSTRACT

The present study aimed to assess the mental health status and perceived stress among adolescent girls during the menstrual cycle. A descriptive research design was adopted, and data was collected from students, the majority of whom (59%) were in the age group of 17–18 years. Most participants (73%) had a normal Body Mass Index, and the mean age at menarche was 14 years.

The findings revealed that 43.4% of the respondents experienced mild mental health issues, while 21.1% and 35.6% reported moderate and severe mental health problems, respectively. In terms of perceived stress, 44.2% of participants reported moderate stress, followed by 30.2% with mild stress and 25.6% with severe stress. The mean perceived stress score was 18.79, indicating a moderate level of stress, while the mean mental health status score was 40.37, reflecting variability in psychological well-being among participants.

Item-wise analysis showed that feelings of nervousness, anger, and lack of control were prominent stress-related experiences. Additionally, physical symptoms such as headache (mean = 2.45), isolation (mean = 2.24), and stress before menstruation (mean = 2.16) were the most commonly reported concerns. Both physical discomfort and psychosocial factors, including withdrawal

behavior and limited communication about menstrual issues, were found to significantly influence mental health.

The study concludes that although mild mental health issues are most common, a considerable proportion of adolescents experience moderate to severe stress and psychological distress during menstruation. These findings highlight the need for increased awareness, menstrual health education, and supportive interventions to improve the mental well-being of adolescent girls.

**Keywords:** Menstrual cycle, mental health, perceived stress, adolescents, menstruation, psychological well-being

## BACKGROUND OF THE STUDY

Adolescence is a transitional phase of life marked by rapid physical growth, sexual maturation, cognitive development, and emotional changes. According to the World Health Organization, adolescence spans the age group of 10–19 years and represents a critical period for establishing lifelong health patterns. Among adolescent girls, the onset of menarche and the subsequent regulation of the menstrual cycle signify an important milestone in reproductive development and overall health. In the contemporary world, adolescent girls are increasingly exposed to multiple stressors that challenge their mental well-being. Academic competition, examination

pressure, high parental expectations, peer relationships, body image concerns, and extensive use of digital media contribute significantly to psychological stress. Additionally, social changes, family conflicts, economic difficulties, and lack of emotional support further exacerbate mental health challenges during this vulnerable phase. Therefore, an in-depth assessment of stress and mental health during the menstrual cycle among adolescent girls is necessary. Such a study will provide valuable insights for healthcare providers, nurses, educators, and policymakers to develop targeted health education programs, early screening strategies, and holistic interventions aimed at promoting mental well-being and healthy reproductive development during adolescence.

## METHODOLOGY

A descriptive research design was used to assess stress and mental health among adolescent girls. A purposive sample of 100 adolescent girls from a selected nursing college was recruited based on inclusion criteria. Data was collected using a structured questionnaire comprising socio-demographic variables, the Perceived Stress Scale (PSS), and the general health assessment scale. Formal permission was obtained from the principal college of nursing, and informed consent was taken from participants.

## RESULTS AND DISCUSSION

The majority of the students (59%) were in the age group of 17 to 18 years. The BMI of 73 percent of students was found to be within normal limits and attained the age group of 14 years.

**Table 1: Mental Health Status during Menstruation**

Level of Mental Health Status	Percentage (%)
Mild	43.4%
Moderate	21.1%
Severe	35.6%
Total	100%

Table 1 presents the distribution of mental health status among individuals during menstruation. It shows that the largest proportion of respondents, 43.4%, experienced mild mental health issues, indicating that most individuals had relatively low levels of psychological distress during this period. A smaller group, 21.1%, reported moderate mental health concerns, suggesting a noticeable but manageable level of distress. Meanwhile, a significant portion, 35.6%, experienced severe mental health issues, highlighting that over one-third of the participants faced high levels of psychological difficulty during menstruation. Overall, the data indicate that while mild symptoms are most common, a considerable number of individuals experience moderate to severe mental health challenges, emphasizing the need for awareness and supportive interventions.

**Table 2: Level of Perceived Stress during Menstrual Cycle**

Level of Perceived Stress	Percentage (%)
Mild	30.2%
Moderate	44.2%
Severe	25.6%
Total	100%

Table 2 presents the distribution of perceived stress levels among individuals during the menstrual cycle. It indicates that the highest proportion of respondents, 44.2%, experienced a moderate level of stress, suggesting that many individuals face a noticeable degree of stress during this period. Meanwhile, 30.2% reported mild stress, showing that nearly one-third experienced relatively low stress levels. In contrast, 25.6% of respondents experienced severe stress, highlighting that a significant portion faced high stress during the menstrual cycle.

Overall, the findings suggest that moderate stress is the most common experience, but a considerable number of individuals still report either mild or severe stress. This distribution underscores the variability in stress experiences during the menstrual

cycle and points to the importance of stress management and supportive measures for

those experiencing higher stress levels.

**Table 3: Mean and Standard Deviation of Perceived Stress Score and Mental Health Status Score**

	Mean	Std. Error of Mean	Std. Deviation
Perceived Stress Score	18.7900	0.557	5.572
Mental Health Status Score	40.37	0.599	7.904

Table 3 presents the mean, standard error of the mean, and standard deviation for perceived stress scores and mental health status scores.

The mean perceived stress score is 18.79, indicating a moderate level of stress among the participants. The standard deviation of 5.572 suggests a moderate level of variability in stress levels, meaning that individual scores vary to some extent around the average. The standard error (0.557) is relatively low, indicating that the

sample mean is a reliable estimate of the population mean.

Similarly, the mean mental health status score is 40.37, which reflects the overall mental health condition of the participants. The standard deviation of 7.904 is slightly higher than that of stress scores, indicating greater variability in mental health status among individuals. The standard error (0.599) remains low, suggesting good precision in the estimation of the mean.

**Table 4: Distribution of Perceived Stress Score**

S. No	Statement	Mean Score
1	Have you been upset because of unexpected things?	1.96
2	Have you felt that you were unable to control the important things in your life?	1.78
3	Have you felt nervous and stressed?	2.18
4	Have you felt that you were effectively coping with personal problems? (R)	1.53
5	Have you felt that things were going your way? (R)	1.75
6	Have you found that you couldn't cope with all the things that you had to do?	1.83
7	Have you been able to control irritations in your life? (R)	2.18
8	Have you felt that you were on top of things?	1.82
9	Have you been angered because of things that were outside of your control?	2.17
10	You felt you were not in control of your life?	1.59

The table presents the distribution of mean scores for different statements related to perceived stress. Each statement reflects a specific feeling or experience associated with stress, and the mean scores indicate the average level at which respondents experienced these situations.

The findings show that respondents most strongly reported feeling nervous and stressed (mean score = 2.18) and being able to control irritations in life (mean score = 2.18), followed closely by feeling anger due to situations beyond their control (mean score = 2.17). These higher mean scores suggest that emotional responses such as stress, irritation, and anger were relatively more prominent among participants.

Moderate mean scores were observed for statements like being upset due to unexpected events (1.96), difficulty coping with responsibilities (1.83), and feeling on top of things (1.82), indicating a moderate level of stress perception in these areas.

Lower mean scores were seen in statements related to feeling unable to control important aspects of life (1.78), feeling that things were going their way (1.75), lack of control over life (1.59), and effectively coping with personal problems (1.53). These comparatively lower values suggest that respondents experienced these aspects less intensely.

Overall, the table indicates a moderate level of perceived stress among respondents, with emotional strain and reactions to

uncontrollable situations being the most notable contributors.

**Table 5: Distribution of Mental Health Status**

S. No	Problem during Menstrual Cycle	Mean
1	Sleep disturbance	1.81
2	Headache before periods	2.45
3	Mood change	1.56
4	Irritability	1.45
5	Restlessness	1.78
6	Stress before periods	2.16
7	Unstable & moody before periods	2.05
8	Withdrawn behavior	2.17
9	Awareness about menarche	1.47
10	Privacy to change sanitary pad	1.22
11	Taught to use sanitary pad	1.58
12	Discussing menstrual problems	1.96
13	Social change after menarche	1.95
14	Isolation	2.24
15	Able to move freely	1.92
16	Abdominal cramp	1.47
17	Leg pain before periods	1.99
18	Body pains	1.91

The table 5 presents the distribution of mean scores for various mental health-related problems experienced during the menstrual cycle. Each item reflects a specific physical, emotional, or social concern, and the mean scores indicate the average level of experience among respondents.

The highest mean scores were observed for headache before periods (2.45), isolation (2.24), withdrawn behavior (2.17), and stress before periods (2.16). These findings suggest that physical discomfort and feelings of social withdrawal or stress are among the most prominent issues faced during menstruation.

Moderately high mean scores were noted for unstable and moody feelings before periods (2.05), discussing menstrual problems (1.96), social change after menarche (1.95), and the ability to move freely (1.92). These indicate that emotional fluctuations and social factors also play a significant role in the menstrual experience.

Lower mean scores were found for sleep disturbance (1.81), restlessness (1.78), mood change (1.56), being taught to use sanitary pads (1.58), awareness about menarche (1.47), irritability (1.45), and privacy to change sanitary pads (1.22). These comparatively lower values suggest that

these issues were less strongly experienced among respondents.

Overall, the table indicates that both physical symptoms (like headaches) and psychosocial factors (such as isolation and stress) contribute to mental health challenges during the menstrual cycle, with certain issues being more pronounced than others.

## DISCUSSION

The present study assessed mental health status and perceived stress among adolescent girls during the menstrual cycle. The majority of participants were aged 17–18 years, with most having normal BMIs and attaining menarche around 14 years. These findings are consistent with recent literature indicating that adolescence is a critical developmental stage marked by hormonal fluctuations that significantly influence emotional and psychological well-being. A recent neuroendocrine perspective highlights that menstrual onset coincides with increased vulnerability to anxiety and depressive symptoms in adolescent girls due to hormonal and psychosocial transitions (Nayman & Klusmann, 2025/2026).

In the present study (Table 1), 43.4% of participants reported mild mental health

issues, while a considerable proportion experienced moderate (21.1%) and severe (35.6%) problems. These findings are supported by a 2024 qualitative study by Åkerman et al., which reported that menstruation is frequently associated with emotional distress, stigma, and psychological discomfort among young people. Similarly, Botello-Hermosa et al. (2024) found that menstruation is often linked with negative emotional experiences and social discomfort, which can contribute to mental health challenges among young women.

Regarding perceived stress (Table 2), the majority of respondents (44.2%) experienced moderate stress, followed by mild (30.2%) and severe stress (25.6%). This aligns with findings from Yaşar (2024), who demonstrated that perceived stress significantly influences menstrual complaints among university students, with moderate stress being the most commonly reported level. Additionally, a 2024 systematic review in *Neuroscience & Biobehavioral Reviews* confirmed that elevated psychological stress is strongly associated with menstrual disturbances and related health issues (ScienceDirect). The mean perceived stress score (18.79) and mental health score (40.37) in Table 3 indicate moderate stress and variability in mental health among participants. This variability is supported by recent research showing that stress perception differs widely among adolescents depending on biological and psychosocial factors. A 2024 clinical study on adolescents with menstrual disorders reported significantly higher perceived stress levels and reduced quality of life compared to controls.

Analysis of perceived stress items (Table 4) revealed that feelings of nervousness, anger, and lack of control had higher mean scores. These findings are consistent with recent studies emphasizing emotional dysregulation during menstruation. Petrine et al. (2024) found that psychological stressors significantly influence menstrual cycle patterns and emotional responses,

reinforcing the role of stress in menstrual-related mental health issues (PubMed). The findings of Table 5 indicate that physical symptoms such as headache (2.45), isolation (2.24), and stress before menstruation (2.16) were most prominent. These results are strongly supported by recent evidence. Cameron et al. (2024) reported that adolescents experiencing menstrual pain (dysmenorrhea) are at a significantly higher risk of mental health problems, including anxiety and depression. Furthermore, de Moraes et al. (2025), based on data collected in 2024, found a strong association between perceived stress and menstrual symptoms such as pain and discomfort (SpringerLink). In addition, social factors such as isolation, withdrawn behavior, and difficulty discussing menstrual issues observed in this study are supported by recent qualitative research. Åkerman et al. (2024) highlighted that menstrual stigma and lack of open communication contribute to psychological distress and social withdrawal among adolescents.

#### **Declaration by Authors**

**Ethical Approval:** Approved

**Acknowledgement:** Authors acknowledge O. Niranjini, P.C. Lahari, P. Jyoti, P. Sravani, P. Muneeswari, and N. Charika for their help during the conduction of the study.

**Source of Funding:** None

**Conflict of Interest:** The authors declare no conflict of interest.

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How to cite this article: P. Sreedevi Annapoorna, S. Swarna. Perceived stress and mental health during the menstrual cycle in adolescents in selected college. *Galore International Journal of Applied Sciences & Humanities*. 2026; 10(2): 38-43. DOI: <https://doi.org/10.52403/gijash.20260206>

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