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The Relationship Between Stress Levels and Irregular Menstrual Cycles Among Female High School Students at Al Azhar Kelapa Gading: An Islamic Perspective

Madinatush Shabrina* , Fita Maulina, Muhammad Arsyad
Universitas Yarsi, Indonesia
Email: madinashabrina@gmail.com* , maulinafieta@gmail.com,
muhammad.arsyad@yarsi.ac.id

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Abstract

Menstrual cycle irregularities are one of the reproductive health problems frequently experienced by adolescent girls and can be influenced by various factors, including psychological stress. This research aimed to determine the relationship between stress levels and menstrual cycle irregularities among female students at Al-Azhar Kelapa Gading High School and to review the findings from an Islamic perspective. This quantitative cross-sectional research involved 60 female students selected from 188 using quota sampling. Data were collected via the Perceived Stress Scale-10 (PSS-10) and structured questions on menstrual cycles, then analyzed using univariate analysis and the Pearson Chi-Square test to examine the association between stress levels and menstrual irregularities. The results showed that most respondents experienced moderate stress levels (66.7%), followed by low stress levels (20.0%) and severe stress levels (13.3%). Regarding menstrual cycles, 83.3% of respondents had regular cycles, while 16.7% experienced irregular cycles. The statistical analysis revealed a significant association between stress levels and menstrual cycle irregularities with a p-value of 0.001 ($p < 0.05$). Respondents with severe stress levels were more likely to report irregular menstrual cycles compared to those with lower stress levels. These findings suggest that psychological stress may affect menstrual regularity through hormonal disturbances, though the cross-sectional design prevents causal conclusions. From an Islamic perspective, managing stress through patience, dhikr, and tawakal is essential for maintaining mental, spiritual, and physical balance. This study underscores the importance of stress management education for adolescent girls to improve reproductive health and provides empirical evidence to support school-based health interventions.

INTRODUCTION

Reproductive health is an integral part of general health that includes physical, mental, and social conditions related to the reproductive system, its functions, and processes. One of the important aspects of women's reproductive health is the regularity of the menstrual cycle, which physiologically reflects the hormonal balance in the body. Changes or disturbances in the menstrual cycle can be an indicator of health problems, both physical and psychological, especially in the adolescent age group (Amalia, Budhiana, & Sanjaya, 2023).

Adolescence, which includes the age of 10-19 years according to WHO, 10-18 years according to the regulation of the Minister of Health Number 25 of 2014, and 10-24 years and

unmarried according to the National Population and Family Planning Agency (BKKBN) is an important transition phase characterized by rapid growth and intense hormonal changes. In this phase, *menarche* or the first menstruation occurs. Menstruation is repeated vaginal bleeding due to the loss of the unfertilized lining of the uterine wall (endometrium), so that it sheds and excretes the body along with blood, mucus, and cell tissue residue (Nurdini & Lufiyanti, 2023). *Menarche* or the first menstruation is generally experienced at the age of 10–16 years, with the average age *of menarche* being in the range of 12.4 years (Lacroix, Gondal, Shumway, & Langaker, 2023). According to guidelines from the Federation of Gynecology and Obstetrics (FIGO), normal menstruation includes four main parameters, namely frequency, regularity, duration and volume of bleeding. Menstruation lasts for a maximum of 8 days with cycles between 24-38 days and the volume of blood expelled ranges from 5-80 ml per cycle.

However, in adolescence, menstrual cycle disorders are often encountered. Data from Basic Health Research (Riskesdas, 2018) shows that as many as 11.7% of adolescents in Indonesia experience irregular menstruation and as many as 14.9% in urban areas in Indonesia experience menstrual cycle disorders. Irregularities in the menstrual cycle or referred to as *abnormal uterine bleeding* (AUB) are caused because the endocrine system that regulates the menstrual cycle, namely the hypothalamic-pituitary-ovarian axis, is still in the stage of maturation or maturation. One form of menstrual cycle disorder that is commonly experienced by adolescent girls is menstruation with a longer duration accompanied by excessive bleeding volume (Nuraini, Kumalasary, & Triwahyuningsih, 2025).

Various factors affect the menstrual cycle, including hormonal, nutritional status, physical activity, sleep patterns, and psychological factors such as stress. In a study by Sarni Anggoro (2022), stress had a percentage of 73.1% of the incidence of menstrual cycle disorders and was one of the most dominant factors influencing menstrual cycle irregularities. One of the most frequent causes of stress in adolescents is psychological stress triggered by psychosocial environmental factors, including academic stress. Academic stress comes from the learning process or education-related activities such as exams, interaction with teachers, academic competition, and busy school schedules (Nurdini & Lufiyanti, 2023).

Stress in adolescents has different characteristics compared to stress in adults because adolescents are in a period of transition marked by various biological, psychological, and social changes. Various factors, both mild and severe, can be stressors in adolescents, such as the demand to adjust to the environment, the desire to gain acceptance from peers, changes in body shape during puberty, worries about the future, and academic pressures such as facing exams (Muktar, Apriliyani, & Kurniawan, 2025).

Adolescents' vulnerability to stress is also supported by the high number of mental health problems in adolescent age groups. The World Health Organization (WHO) estimates that about 10–20% of children and adolescents in the world suffer from mental health disorders. Meanwhile, based on Basic Health Research (Riskesdas) in 2018, the prevalence of mental emotional disorders in the Indonesian population aged ≥15 years reached 9.8%. The data shows that mental health issues are still an important concern and may increase adolescents' vulnerability to stress.

In adolescence, there are physical, hormonal, and psychosocial changes that take place rapidly, while emotional maturity has not been optimally developed. This condition makes adolescents more susceptible to experiencing stress which is characterized by emotional

changes such as anxiety easily, crying, frustration, and erratic mood swings. This vulnerability is mainly experienced by adolescent girls because during puberty there are rapid changes in reproductive and hormonal organs, while psychological development is not yet fully mature (Indriyani & Aniroh, 2023).

Stress is the body's reaction to emotional or physical stress that arises due to environmental demands that exceed a person's adaptive ability (Distyvanya, Nawangsasi, Herdiyantini, Adiwinoto, & Setyawan, 2024). According to Chu *et al* (2024), stress can be classified based on several dimensions. Judging from the source of stressors, stress comes from three main aspects, namely the individual's internal environment, family environment, and social and community environment, while, based on the type, stress consists of acute, chronic, eusstress, distress, psychological stress, physiological stress, and environmental stress (Chu, Marwaha, Sanvictores, Awosika, & Ayers, 2024). As for the severity, in the book (Puspitaningsih & Kusuma, 2017), stress is divided into mild stress, moderate stress, and severe stress.

When a person experiences stress, the neuroendocrine system, hypothalamic-pituitary-adrenal *(hypothalamic-pituitary-adrenal/HPA axis)* will be activated so that there is an increase in the production of the hormone cortisol which is one of the physiological biomarkers of stress (Anggraeni, Fauziah, & Gustina, 2022). These hormonal and neural activations contribute to systemic disorders such as endothelial dysfunction, vascular inflammation, narrowing of the airways, inhibition of intestinal motility, and decreased bone density (Chu, Marwaha, Sanvictores, Awosika, & Ayers, 2024). Meanwhile, in the reproductive system, the part of the hypothalamus, which is the part of the brain that controls reproductive hormones, can be disrupted in regulating the release of *gonadotropin-releasing hormone* (GnRH), which then has an impact on decreasing the production of *luteinizing hormone* (LH) and *follicle-stimulating hormone* (FSH) (Anggoro, 2022). This hormonal imbalance contributes to the occurrence of menstrual cycle disorders (Nuraini, Kumalasary, & Triwahyuningsih, 2025).

Some studies show that stress is associated with menstrual disorders. A study by Ririn Khoerunnisa (2024) shows that female students who experience stress have a 15.36 times greater risk of experiencing menstrual cycle disruptions compared to those who are not stressed. Similarly, another study by Legina Anggraeni *et al.* (2022) stated that adolescent girls who experience stress show delays in the menstrual cycle. This is supported by research by Sarni Anggoro (2022) who stated that stress increases the secretion of the hormone cortisol which can interfere with the secretion of GnRH, so that the menstrual cycle becomes irregular. Furthermore, the stress hormone, namely the hormone cortisol as a product of the glucocorticoid adrenal cortex synthesized in the fasiculate zone, can interfere with the menstrual cycle because it affects the amount of progesterone hormone in the body (Arini et al., 2020; Barrea et al., 2023; Held et al., 2020; Tamamori-Adachi et al., 2018). Too much of this hormone in the blood can cause changes in the menstrual cycle.

Although many studies have shown a link between stress and menstrual disorders, not all studies have found consistent results. Research by Amanda Aulia, Citra Debby *et al.* (2024) stated that there was no significant relationship between stress levels and menstrual cycle disorders in female students in Surabaya. These differences in results can be caused by contextual factors such as environment, culture, respondent characteristics and individual differences in coping mechanisms to stress.

School as a social and academic environment has a big role in shaping the psychological condition of adolescents. Academic demands, expectations from parents, and social dynamics with peers can trigger stress in female students. Al-Azhar High School as one of the value-based and achievement-based educational institutions has its own dynamics that can contribute to the psychological condition of its students. In addition, this school environment is known to have a dense learning system and is oriented towards academic achievement and Islamic values, so academic pressure and spiritual demands can be factors that affect the emotional balance of students. Therefore, it is important to specifically examine the relationship between stress levels and menstrual cycle disruption in female students in this environment as an effort to understand the influence of stress in the context of Islamic values-based schools.

In the Islamic view**,** stress is understood as part of life's test that aims to strengthen one's faith. Allah SWT said in Q.S Al-Baqarah verses 155-157.

وَلَنَبْلُوَنَّكُمْ بِشَيْءٍ مِّنَ الْخَوْفِ وَالْجُوْعِ وَنَقْصٍ مِّنَ الْاَمْوَالِ وَالْاَنْفُسِ وَالثَّمَرٰتِۗ وَبَشِّرِ الصّٰبِرِيْنَ ۝١٥٥اَلَّذِيْنَ اِذَآ اَصَابَتْهُمْ مُّصِيْبَةٌۙ قَالُوْٓا اِنَّا لِلّٰهِ وَاِنَّآ اِلَيْهِ رٰجِعُوْنَ ۝١٥٦اُولٰۤىِٕكَ عَلَيْهِمْ صَلَوٰتٌ مِّنْ رَّبِّهِمْ وَرَحْمَةٌۗ وَاُولٰۤىِٕكَ هُمُ الْمُهْتَدُوْنَ ۝١٥٧

It means:

"And verily We will give you trials, with a little fear, hunger, lack of wealth, soul and fruits. And give glad tidings to those who are patient, those who, when calamity befalls them, say 'Inna lillahi wa inna ilaihi raji'un'. They are the ones who receive perfect blessings and mercy from their Lord, and they are the ones who are guided." (Q.S Al-Baqarah/2 verses 155-157)

This verse illustrates the importance of patience and serenity in the face of life's stresses. As for menstruation, Allah SWT explained in Q.S Al-Baqarah verse 222

وَيَسْـَٔلُوْنَكَ عَنِ الْمَحِيْضِۗ قُلْ هُوَ اَذًىۙ فَاعْتَزِلُوا النِّسَاۤءَ فِى الْمَحِيْضِۙ وَلَا تَقْرَبُوْهُنَّ حَتّٰى يَطْهُرْنَۚ فَاِذَا تَطَهَّرْنَ فَأْتُوْهُنَّ مِنْ حَيْثُ اَمَرَكُمُ اللّٰهُۗ اِنَّ اللّٰهَ يُحِبُّ التَّوَّابِيْنَ وَيُحِبُّ الْمُتَطَهِّرِيْنَ ۝٢٢٢

It means:

"They ask you about menstruation. Say: menstruation is a dirt. Therefore you should abstain from women during menstruation and do not approach them before they are purified." (Q.S Al-Baqarah/2 verse 222)

This verse explains that menstruation is a natural state of women that must be addressed by maintaining cleanliness and obeying the provisions of the sharia. Islam views physical, mental, and spiritual balance as an important part of women's health.

Seeing the importance of menstruation as an indicator of reproductive health and the increasing prevalence of menstrual disorders in adolescents, this study was conducted to determine the relationship between stress levels and menstrual cycle disorders in Al-Azhar High School students. The results of this study are expected to provide scientific information and become the basis for educational interventions in improving adolescent reproductive health.

Based on the background presented above, this study was formulated to examine the relationship between stress levels and menstrual cycle irregularities among Al-Azhar Kelapa Gading High School students, as well as to review this relationship from an Islamic perspective. To achieve this, the study addresses four research questions: what are the stress levels of the students, what are the patterns of their menstrual cycles, is there a significant relationship between stress levels and menstrual irregularities, and how is this relationship viewed from an

Islamic standpoint. The general objective of this study is to determine the association between stress levels and menstrual cycle irregularities, while the specific objectives include classifying stress levels, identifying menstrual cycle patterns, analyzing the statistical relationship between the two variables, and examining the findings through an Islamic lens. This research is expected to provide multiple benefits: for students, it adds insight into the connection between stress and reproductive health; for YARSI University, it contributes knowledge based on empirical findings; for researchers, it serves as a learning platform in conducting and reporting research; and for the broader community, it offers education on the importance of stress management as part of early reproductive health maintenance, particularly for adolescent girls.

METHOD

Types of Research

The type of research used was observational analysis with *a cross sectional approach.* The purpose of this study is to see the relationship between stress levels and menstrual cycle irregularities in Al-Azhar Kelapa Gading High School students.

Research Design

This study is a quantitative study with *a cross-sectional approach* that aims to see the relationship between stress levels and menstrual cycles in Al-Azhar Kelapa Gading High School students. The design of this research is prepared systematically, including data collection procedures, analysis of results, and methods used to ensure the validity and relevance of findings in answering the research objectives.

Population

The population in this study is all students of Al-Azhar Kelapa Gading High School from classes X, XI, and XII which amounted to 188 students.

Inclusion Criteria

1. Al-Azhar Kelapa Gading High School Student with Normal Body Mass Index
2. Have been menarche for at least the last 1 year
3. Willing to be a respondent and fill out the questionnaire honestly and completely

Exclusion Criteria

1. Students who are participating in athletic programs or intensive sports training
2. Female students with ovulation disorders since menarche.
3. Students with menstrual disorders due to anatomical abnormalities of the reproductive organs.
4. Are undergoing hormone therapy or medications that affect the menstrual cycle.
5. Being pregnant or breastfeeding
6. History of severe psychological disorders that are being treated
7. There is a history of chronic illness
8. Not willing to provide complete data or follow research procedures.

Sample

The sample in the study was selected using *the quota sampling method,* which is *a non-probability sampling technique* where the population is divided into strata (students in grades X, XI, XII), and then a certain number of samples (quota) from each strata, without random selection.

How to Assign Samples

The sampling technique used is *quota sampling,* where the researcher first determines the number (quota) of respondents from each group in the population, then takes respondents who meet the inclusion and exclusion requirements and are willing to fill out a questionnaire. The distribution of the questionnaire is carried out online through the google form, and data collection is carried out until each quota per class is met.

Determination of Sample Quantity

The population in this study is 188 female students. Sampling was carried out using a non-probability sampling technique with the quota sampling method, where participants were selected based on predetermined characteristics so that the resulting sample had a distribution of characteristics similar to the population as a whole. The number of samples was 60 respondents who met the inclusion and exclusion criteria. The determination of the number of samples refers to the opinion of Darmawan (2016), which is at least 30% of the total population.

The sample quota is determined proportionally based on the number of population at each grade level. The determination of the number of samples uses the *proportional allocation formula.*

$$n_i = \frac{N_i}{N} \times n$$

Description:

n_i : Number of samples in each sub group (class)
N_i : The number of populations in each sub-group
N : Total population
n : Total sample

Description:

N : 188 students
N_i : Female Student of Class X (51)
Female Student Class XI (68)
Grade XII Student (69)
n : 60 students

Class X Sample

$$\frac{51}{188} \times 60 = 16{,}28 \approx 16$$

Class XI Sample

$$\frac{68}{188} \times 60 = 21{,}70 \approx 22$$

Class XII Sample

$$\frac{69}{188} \times 60 = 22{,}02 \approx 22$$

Data Type

The type of data used is quantitative primary data obtained directly from respondents through filling out the PSS-10 google form for stress levels and self-made questions according to the data needs to find out the menstrual cycle.

How Data Is Collected and Measured

How Data Is Collected

The method of data collection in this study was carried out through a survey using a google form distributed to Al-Azhar Kelapa Gading High School students. The Google form contains the PSS-10 and structured questions about the menstrual cycle.

How to Measure Data

Stress level measurement uses a google form that contains the PSS-10 questions and will be recorded in the form of numbers. Menstrual cycle measurement uses a google form that contains related questions and will be recorded on a categorical scale to assess menstrual regularity (regular/irregular). The data collected included variables such as menstrual cycle duration and cycle regularity.

Data Collection Instruments

Structured Google forms

1. Used to collect primary data from Al-Azhar Kelapa Gading High School students
2. Contains PSS-10 questions to measure stress levels and structured questions about menstrual cycle disorders
3. Arranged in the form of ordinal and categorical scales to facilitate quantitative analysis

Literature reference for evaluation

1. It was used as a secondary source to compare the results of the study with previous studies on the relationship of stress levels to the menstrual cycle.
2. Includes scientific journals and medical reference books.

Data Analysis

The data analysis in this study using SPSS involves descriptive analysis to describe the characteristics of respondents and bivariate analysis to see the relationship between variables. Statistical tests are used with the type of data and its distribution.

1. **Univariate Analysis**: To present data on respondents' demographic characteristics such as age, menarche age, as well as the distribution of stress levels and menstrual cycle patterns
2. **Bivariate Analysis**: To analyze the relationship between stress level variables and menstrual cycle variables using the Pearson Chi-Square test

RESULTS AND DISCUSSION

Test Research Instruments

Validity Test

Validity is the main aspect in quantitative research that shows the ability of an instrument to measure the variables to be studied precisely. Research instruments act as a tool for collecting empirical data, so the quality of the data obtained is highly dependent on the level of validity and reliability of the instruments used. Therefore, before being used in research, the instrument needs to be tested to ensure that each question item is truly able to represent the construct or concept to be measured (Subhaktiyasa, 2024)

The instrument is said to be valid if each question item has an adequate relationship with the measured construct, so that it is able to produce accurate data and in accordance with the actual conditions. In quantitative research, validity testing is generally carried out by analyzing the correlation between the score of each question item and the item-total correlation score, one of which is using the Pearson correlation test. The results of the test are the basis for determining whether each question item is suitable for use in the research (Subhaktiyasa, 2024).

Construct validation can be analyzed through factor testing to see the fit of the indicator with the variables being measured. In practice, an indicator on a questionnaire is declared valid if the value of r is greater than the r of the table (r is calculated > r of the table). Thus, validity is a benchmark that ensures that the research instrument is really in accordance with the construct to be measured (Sobiri & Nashrullah, 2026).

The reliability test is carried out to assess the level of consistency of a research instrument in producing stable and reliable data. Reliability indicates the extent to which an instrument is able to provide relatively similar measurement results when used repeatedly under similar conditions or objects. Thus, a reliable instrument will produce consistent data so that it can be used as a good measuring tool in research. Reliability testing is performed using *Cronbach's Alpha* coefficient to measure the internal consistency between question items in an instrument. Reliability testing is performed after the instrument has been declared valid, as only valid question items can be used in reliability calculations. Therefore, the validity test is a stage that must be carried out before the reliability test (Sobiri & Nashrullah, 2026).

Cronbach's Alpha *coefficient* is one of the most commonly used methods to test the reliability of research instruments, especially on questionnaires with the Likert scale. An instrument is declared reliable if it has a Cronbach's Alpha value ≥ 0.70, which indicates that the instrument has good internal consistency or reliability in measuring research variables (Sobiri & Nashrullah, 2026).

Based on Table 3, the results of the validity test of the menstrual cycle disorder questionnaire showed that 9 out of 10 questions had a calculated r value greater than the r of the table (0.291), so it was declared valid. Meanwhile, one question item, item M9, has a calculated r value that is smaller than the r of the table so it is declared invalid. Nonetheless, item M9 was retained as it was a question relating to the cause of menstrual disorders that was included in the study exclusion criteria. The results of the reliability test showed a Cronbach's Alpha value of 0.701, so the overall research instrument was declared reliable. The removal of item M9 only increased Cronbach's Alpha value to 0.703, so the increase was considered meaningless and the item was retained based on theoretical considerations and guidance instructions.

Table 1. Validity and Reliability Test Results

Variable	Item	R Count	R Table	Interpretation	*Cronbach's Alpha*
Menstrual Cycle Disorders	P1	0.688	0.291	Valid	0.701
	P2	0.598	0.291	Valid	
	P3	0.541	0.291	Valid	
	P4	0.435	0.291	Valid	
	P5	0.626	0.291	Valid	
	P6	0.345	0.291	Valid	
	P7	0.339	0.291	Valid	
	P8	0.772	0.291	Valid	
	P9	0.257	0.291	Invalid	
	P10	0.633	0.291	Valid	

Source: Primary data processed using SPSS, 2025

Respondent Characteristics

The data used in this study is primary data obtained directly through filling out *a google form questionnaire.* The total number of respondents was 60 people. Respondents' characteristics were based on age, menarche age, BMI, ethnicity, economy, and unpleasant events that affected their feelings.

Table 4. Distribution and Frequency of Respondent Characteristics by Class, Age, and Age of Menarche

Remarks	Characteristics	N	%
Classes	Class X	16	26,7%
	Class XI	22	36,7%
	Class XII	22	36,5%
Total		60	100%
Age	15 years	5	8,3%
	16 years old	15	25,0%
	17 years	28	46,7%
	18 years old	12	20,0%
Total		60	100%
Menarche Age	9 years	1	1,7%
	10 years	6	10,0%
	11 years old	14	23,3%
	12 years	21	35%
	13 years	14	23,3%
	14 years	4	6,7%
Total		60	100%

Source: Primary data, 2025

Based on Table 2. The highest class frequency distribution was found in grades XI and XII as many as 22 female students (36.7%). In the age distribution of Al-Azhar Kelapa Gading High School students, it was shown that the category with the highest age was 17 years old with 28 female students (46.7%), then the highest age distribution of menarche was at the age of 12 years as many as 21 students (23.3%).

Table 3. Distribution and Frequency of Respondent Characteristics by Ethnicity, Family Economic Conditions, and Adverse Event Experience

Remarks	Characteristics	N	%
Tribe	Javanese	27	45,0%
	Follow-up	12	20,0%
	Padang	8	13,3%
	Batak	2	3,3%
	Bugis	2	3,3%
	Mature	2	3,3%
	Aceh	2	3,3%
	Betawi/Jakarta	3	5,0%
	Papua	1	1,7%
	Palembang	1	1,7%
Total		60	100%
Family Economic Conditions	Quite capable	18	30,0%
	Able	42	70,0%
Total		60	100%
Unpleasant Events That Affect Feelings	Yes	15	25,0%
	No	45	75,0%
Total		60	100%

Source: Primary data, 2025

Based on Table 3, the frequency distribution of the origin of Al-Azhar Kelapa Gading High School students shows that most of them come from the Javanese tribe, which is as many as 27 people (45.0%). In the distribution of economic conditions, the majority of female students come from families that are classified as poor, as many as 42 people (70.0%). Meanwhile, most of the students stated that they were not experiencing unpleasant events that could affect their feelings, such as *bullying* or loss, which was 45 people (75.0%).

Univariate Analysis

Stress Level

The distribution of respondents by stress level can be seen in the following Table 6:

Table 4. Distribution of Respondents by Stress Level

Variable	Frequency	%
Stress Level		
Low	12	20,0%
Medium	40	66,7%
Weight	8	13,3%
Total	60	100%

Source: Primary data, 2025

Based on Table 4, most of the respondents were in the category of moderate stress level, which was as many as 40 respondents (66.7%). Respondents with low stress levels amounted to 12 respondents (20.0%), while respondents with severe stress levels amounted to 8 respondents (13.3%). These findings show that moderate stress levels were the category most experienced by respondents in the study.

Menstrual Cycle

The distribution of respondents by blood pressure can be seen in the following table:

Table 5. Distribution of Respondents by Menstrual Cycle

Variable	Frequency	%
Menstrual Cycle		
Irregular	10	16,7%
Regular	50	83,3%
Total	60	100%

Source: Primary data, 2025

Based on Table 5, most of the respondents had a regular menstrual cycle pattern, which was as many as 50 respondents (83.3%), while respondents with irregular menstrual cycles amounted to 10 respondents (16.7%). These results show that the majority of respondents in this study have a regular menstrual cycle pattern.

Bivariate Analysis

Bivariate analysis in this study uses the Pearson Chi-Square test which aims to identify the relationship between independent variables and dependent variables. The results of the data management are then displayed in the form of cross-tabulation equipped with p-values, which are used as a reference to assess the significant level of relationships between variables.

Table 6. The Relationship between Stress Level and Menstrual Cycle Patterns in Al-Azhar Kelapa Gading High School Students

Stress Level	Menstrual Cycle						*p-Value*
	Irregular		Regular		Total		
	N	%	N	%	N	%	
Low	0	0	12	24,0	12	20	0,001
Medium	4	40,0	36	72,0	40	66,7	
Weight	6	60,0	2	4,0	8	13,3	
Total	10	16,7	50	83,3	60	100	

Source: Primary data analyzed using SPSS (Pearson Chi-Square test), 2025

Based on Table 8, in the group of respondents with irregular menstrual cycle patterns, most had severe stress levels (60.0%), followed by moderate stress levels (40.0%), and there were no respondents with low stress levels (0%). Meanwhile, in the group of respondents with regular menstrual cycle patterns, most had moderate stress levels (72.0%), followed by low stress levels (24.0%), and only a small percentage had severe stress levels (4.0%). The results of the Pearson Chi-square test showed a value of $p = 0.001$ ($p < 0.05$), so there was a significant relationship between stress levels and menstrual cycle patterns in Al Azhar Kelapa Gading High School students.

The results of this study show that there is a significant relationship between stress levels and menstrual cycle patterns in Al-Azhar Kelapa Gading High School students. Based on Table 8, in the group of respondents with irregular menstrual cycle patterns, most of them had severe stress levels (60.0%), while in the group of respondents with regular menstrual cycle patterns, all respondents with low stress levels (100%) were in the category of regular menstrual cycles. This is reinforced by the results of the Pearson Chi-Square test which yielded a value of $p = 0.001$ (<0.05), showing that the relationship between the two variables is meaningful.

The study also showed that the majority of respondents were 17 years old (46.7%) and most experienced menarche by the age of 12 (35.0%). The age of menarche is still in the normal age range, which is around 10-15 years, so that at the age of the respondents when the study was conducted, the reproductive system has generally reached maturity. In addition, all respondents had a normal body mass index (BMI) according to the study's inclusion criteria and did not participate in intensive physical activity, such as athlete training, which is known to affect hormonal balance and menstrual cycle regularity. Thus, several factors that have the potential to affect menstrual cycle patterns have been minimized in this study, so the relationship found better illustrates the relationship between stress levels and menstrual cycle patterns.

Physiologically, stress can affect reproductive function through activation of the hypothalamic–pituitary–adrenal axis (*Hypothalamic–Pituitary–Adrenal/HPA axis*). When a person is stressed, the hypothalamus increases the secretion of *Corticotropin-Releasing Hormone* (CRH) which will stimulate the release of *Adrenocorticotropic Hormone* (ACTH) from the anterior pituitary, then increases the production of the hormone cortisol by the adrenal cortex. Continuous increase in cortisol levels can inhibit the release of *Gonadotropin-Releasing Hormone* (GnRH), resulting in decreased secretion of *Follicle-Stimulating Hormone* (FSH) and *Luteinizing Hormone* (LH). This condition can interfere with the ovulation process and cause changes in the length of the menstrual cycle and menstrual irregularities (Anggoro, 2022).

Previous research has also shown similar findings. Research by Dewi et al. (2025) in Sinjai Regency involving 115 respondents showed that adolescents with higher levels of stress tended to experience menstrual cycle irregularities ($p = 0.003$). These results are supported by a literature review by Amalia, Budhiana, and Sanjaya (2023) which confirms the existence of a meaningful relationship between stress and menstrual cycle disorders, where stress is one of the elements that has an impact on the menstrual cycle, stress activates the HPA (pituitary adrenal hypothalamus) system which produces the hormone cortisol. Cortisol creates hormonal imbalances, including in the reproductive system, if hormonal disorders occur, it will affect the production of estrogen and progesterone so that it can cause abnormal menstrual cycles. Furthermore, the research of Sari, Astuti, and Sriwahyuni (2026) at Stikes Al-Su'aibah, Palembang, also found a significant relationship between stress and menstrual cycles ($p = 0.000$), with adolescent girls who had high levels of stress tending to show menstrual cycle irregularities.

On the other hand, the results of this study are different from the research of Indriyani & Aniroh (2023) at SMA Negeri 1 Bergas, Semarang, which reported that there was no significant relationship between stress levels and menstrual cycles in adolescent girls. The difference in results could be due to variations in respondent characteristics, physical activity, sleep patterns, and different nutritional statuses between study populations.

Thus, the results of this study strengthen the evidence that stress levels are related to menstrual cycle patterns in adolescent girls, so stress management is one of the aspects that need to be considered in an effort to maintain reproductive health and menstrual cycle regularity.

Stress in Islamic Views

In modern life, not a few people are always in a state of restlessness and unrest. This condition often arises due to the pressures of life, uncertainty of the future, and a weak spiritual

relationship with Allah SWT. In the Islamic view, this state of insecurity is referred to as a form of *qalq* (restlessness) or *hamm* (anxiety), which is a condition when a person's heart loses its balance because it moves away from the source of true peace. UIN Alauddin Makassar (2025) explained that anxiety and anxiety are not disgraces, but signals from a heart that is longing for the Divine Light. A heart that is not filled with the remembrance of God will be easily overcome by anxiety, fear, and emptiness. Allah SWT says in Q.s Ar-Ra'd verse 28

الَّذِيْنَ اٰمَنُوْا وَتَطْمَىِٕنُّ قُلُوْبُهُمْ بِذِكْرِ اللّٰهِ ۗاَلَا بِذِكْرِ اللّٰهِ تَطْمَىِٕنُّ الْقُلُوْبُ ۙ﴿٢٨﴾

It means:

"(That is) those who believe and their hearts become at peace in the remembrance of Allah. Remember, only by remembering Allah will your heart be at peace." (Q.S Ar-Ra'd/13 Verse 28)

This verse emphasizes that inner peace cannot be obtained through worldly things alone, but through dhikr and spiritual closeness to Allah. Thus, Islam views stress not only as a psychological problem, but also as a spiritual test that reminds people to return to their God. The Islamic way to deal with stress is to increase dhikr, patience, and tawakal, because these three can foster inner strength and restore balance between physical and spiritual.

Menstruation and Its Irregularities in Islamic Views

In Islam, menstruation (*menstruation)* is seen as a provision of Allah SWT which is part of the nature of women. However, in some cases, the menstrual cycle can become irregular due to stressors, fatigue, hormonal changes, or certain health disorders. This condition not only affects the biological aspect, but also has an impact on the implementation of worship. Therefore, Islam provides clear guidelines so that women can continue to carry out their religious obligations calmly and in accordance with the sharia.

According to the explanation of the Ministry of Religion of the Republic of Indonesia (2023), if menstruation takes place irregularly or exceeds custom, then a woman must adjust to the provisions of fiqh law. In the Shafi'i madhhab, the shortest menstrual period is one day and one night and the longest is fifteen days. If the bleeding exceeds fifteen days, then the rest of the day is punished as *istihadhah* (disease blood), so that women are still obliged to perform prayers and fasting after purification. This view is in line with the explanation of Ulama Ibn Hajar Al-Haitami in Tuhfatul Muhtaj fi Syarhil-Minhaj, that the law of menstruation must follow individual habits and should not be set in an unstructured manner without taking into account the condition of the woman's body.

From the spiritual side, scholars emphasized that menstrual irregularities are not a shame or reduce the value of a woman's worship. In fact, this condition can be a form of patience test that is worth a reward in the sight of Allah SWT. Islam encourages women to maintain cleanliness, manage stress, and increase dhikr in order to create a balance between physical and spiritual. That way, women who experience menstrual disorders can still carry out worship with full of calmness and confidence, according to the guidance of sharia.

Young Women According to Islamic Views

In the Islamic view, adolescence is a transition phase from children to adulthood which is marked by the attainment of puberty. For women, the sign of puberty is usually marked by the arrival of menstruation which generally occurs starting at the age of about nine years. Since

then, a young woman has been considered a *mukallaf*, that is, an individual who has full responsibility for the implementation of religious teachings. This means that all good and bad deeds will be recorded and have consequences before Allah SWT.

As explained in the views of the scholars and also conveyed by the University of KH. A. Wahab Hasbullah (UNWAHA), adolescents who have reached puberty are obliged to carry out all religious commandments such as praying five times, fasting in the month of Ramadan, covering the aurat, and staying away from all acts prohibited by religion. In addition, they are also required to start maintaining their manners, behavior, and social responsibilities both in the family and the community.

Islam also emphasizes the importance of moral and spiritual development for young women so that they are able to face their own changes with the correct understanding of religion. This period is the most appropriate time to instill the values of faith, discipline in worship, and awareness of responsibility as a Muslim woman. Thus, young women not only grow physically, but also mature in the aspects of morality and spirituality, so that they are ready to live a life in accordance with the guidance of Islamic law.

The Relationship of Stress Level to Menstrual Irregularities and Its Review According to Islamic Views

In the Islamic view, stress is an inner condition that arises due to trials or pressures of life that are not accompanied by peace of mind and strong faith. A person who is able to manage his emotions by remembering Allah will find it easier to achieve calm and be free from excessive anxiety. Thus, Islam places self-control and patience as the main keys in maintaining mental and spiritual balance.

Meanwhile, Islam also pays attention to the biological aspects of women, including in terms of the menstrual cycle. Menstrual irregularities can be caused by a variety of factors, both physical and psychological. In the view of scholars, every condition that affects the rhythm of menstruation should be addressed wisely, and still maintain cleanliness, health, and obedience to the rules of worship according to the condition of the body. This shows that Islam is a religion that is balanced between the guidance of worship and the biological reality of man.

For young women who have reached the age of puberty, Islam emphasizes the importance of responsibility in carrying out religious obligations such as prayer, fasting, and maintaining morals and awrah. Adolescence is a phase full of changes, both physical and emotional, so strong spiritual and moral guidance is needed so that they are able to adjust to the demands of sharia as well as the development of their soul.

Medicine and Islam share the same view in this relationship, that the balance between mental and physical conditions is an important factor in maintaining a healthy body, including the regularity of the menstrual cycle. Excessive stress has been medically proven to interfere with hormonal function, and Islam also teaches the importance of maintaining peace of mind through worship, dhikr, and tawakal so that the body and soul remain balanced. Thus, both medical science and Islamic teachings emphasize the importance of stress management as an effort to maintain reproductive health and holistic well-being in adolescent girls.

CONCLUSION

The results showed that of the 60 students of Al-Azhar Kelapa Gading High School, 12 people (20.0%) had low stress levels, 40 people (66.7%) had moderate stress levels, and 8 people (13.3%) had severe stress levels. Overall, 50 students (83.3%) experienced regular menstrual cycles, while 10 students (16.7%) experienced irregular cycles. There was a significant relationship between stress levels and menstrual cycle irregularities based on the Pearson Chi-Square test ($p = 0.001$, $p < 0.05$). Respondents with irregular cycles were more likely to be found in the severe stress group (60.0%) compared to the moderate stress group (40.0%) and were not found in the low stress group (0.0%). These findings suggest that stress levels affect menstrual regularity through hormonal imbalances regulated by the endocrine system. From an Islamic perspective, stress is seen as an inner condition arising from a lack of peace of mind and spiritual closeness to Allah SWT, and maintaining calm through patience, dhikr, and tawakal can reduce psychological stress, positively impacting physical and hormonal balance. Based on these findings, several recommendations are proposed. For schools, it is recommended to develop and implement stress management programs such as relaxation techniques, time management workshops, and counseling services specifically tailored for female students, as well as integrating reproductive health education into the school curriculum. For parents and families, it is advisable to create a supportive home environment that encourages open communication about stress and reproductive health, and to provide emotional support to adolescent girls during times of academic and social pressure. For students, it is recommended to adopt healthy coping strategies for stress, including regular physical activity, adequate sleep, balanced nutrition, and spiritual practices such as prayer, dhikr, and tawakal, which can help maintain physical and mental well-being. For future researchers, it is recommended to conduct longitudinal studies to examine causal relationships between stress and menstrual irregularities, expand the sample size and include multiple schools to enhance generalizability, as well as explore other potential contributing factors such as sleep quality, physical activity, and nutritional status, and consider developing and evaluating the effectiveness of school-based stress management interventions on menstrual health outcomes.

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