

The Relationship Of Stress Level With Menstrual Cycle Disorders In SMK Health Nafsiah Stabat Year 2022

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ABSTRACT

High and continuous stress can endanger the health of adolescents, where adolescents are the forerunners of the nation's successors. The future of the nation is in their hands. Adolescent girls as teenagers besides being the nation's successors in the field of development also play a role in giving birth to the next generation biologically. As the nation's successor, young women are expected to be healthy so that the quality of the nation's children is physically, psychologically and intellectually healthy. Normally, young women experience menstruation every month with a span of 21-35 days each time they menstruate. The normal menstrual cycle physiologically describes the reproductive organs that tend to be healthy and not problematic. When young women are stressed, it can cause menstrual cycle disorders, This study aims to determine the relationship between stress levels and menstrual cycle disorders in adolescent girls in grades X and XI at the Nafsiah Stabat Health Vocational School in 2022. The type of research used is descriptive correlation with a cross sectional study design. The research was conducted at the Nafsiah Stabat Health Vocational School with a sample of 34 people. Based on the results of the chi-square test using a computer, the results (p value) = 0.000 which is smaller than 0.05 can be concluded that H_0 is rejected and H_a is accepted at a 5% significance level. So there is a relationship between stress levels and menstrual cycle disorders in adolescent girls at the Nafsiah Stabat Health Vocational School in 2022 at the level of confidence/significant (α) = 5% (0.05) obtained p value = 0.

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1. Introduction

Adolescents with their distinctive characteristics are clearly a separate problem for a country and a nation in terms of medical, psychological and risk aspects/consequences of the success of the Republic of Indonesia. The adolescent age group is the forerunner of the nation's successors where the future of the nation and state is in their hands (Yustin Roy, 2014). The age group of adolescents according to the definition of WHO (World Health Organization) is the age group of 10-19 years which is referred to as adolescent. In many countries this age group makes up 20-25% of the population. In Indonesia, according to the composition of the population by the 1995 BKKBN, the adolescent age group was 22% of the total population.

North Sumatra as the province with the largest population outside Java and Medan and as the capital city of the province has a population of 2,006,142 people, with a total age group of 10-19 years being 434,547 (21.26%). Adolescence is a special period in the human life cycle because adolescence is the final stage of human socio-biological maturation which is characterized by rapid growth and secondary sexual maturation. Menstruation or menstruation is a physiological change in a woman's body that occurs periodically and is influenced by reproductive hormones. Menstrual period is important in reproduction, this period usually occurs every month between ages. puberty and menopause. Women experience an average menstrual cycle of about 28 days (Tina in Nurlaila, et al, 2018).

Menstrual cycles are ideally regular every month with a time span between 21-35 days each menstrual period. Physiologically normal menstrual cycle describes, reproductive organs tend to be healthy and not problematic. The hormonal system is good, indicated by eggs that continue to be produced and the menstrual cycle is regular so that with a normal menstrual cycle, a woman will find it easier to get pregnant, organize routines, and calculate the fertile period (Hestiantoro in Nurlaila, et al, 2019).

Irregular menstrual cycles indicate a problem with the metabolic and hormonal systems. The impact is that it becomes more difficult to get pregnant (infertility). A shortened menstrual cycle can cause a woman to experience ovulation because the egg is not mature enough to make it difficult to fertilize. A prolonged menstrual cycle indicates that the egg is rarely produced or the woman has been infertile for a long time. If the egg is rarely produced means fertilization will very rarely occur. The irregularity of the menstrual cycle also makes it difficult for women to find out when the fertile period is (Hestiantoro in Nurlaila, et al, 2015). The usual cycle length is 25-32 days, and approximately 97% of women who ovulate have cycles ranging from 18-42 days, but only about 10-15 percent of women have cycles of 28 days (Mansjoer, A.,

The difference in this cycle is determined by several factors, one of which is stress. Stress is the body's response that is non-specific in nature to any load demands (Hawari, D., 2020) The response of a person's body when experiencing excessive workloads or difficult conditions, if you can handle it then you are said to be not experiencing stress but if you experience interference with one or more organs, then the person concerned is said to be experiencing stress which can interfere with one or more body parts, including menstrual cycle disorders. In addition, disturbed hormone function, systemic disorders, thyroid glands, prolactin hormones and excess hormones are also causes of menstrual cycle disorders (Hestiantoro in Nurlaila, et al, 2019). The number of students experiencing academic stress increases every semester. The most common stress experienced by students is academic stress. Academic stress is defined as a condition where individuals experience pressure from the perception and assessment of academic stressors, which are related to science and education in higher education (Govarest and Gregoire, 2018). Research by Dr. Selye and other researchers proves that stress has a major influence on the development of human disease. Experts state that 70-75% of all illnesses are ultimately related to stress. Juliet Schor in Hager states that 30% of all adults experience high levels of stress. Three quarters of all women in the United States experience at least some stress which results in irregular menstrual cycles (Isnaeni, 2018). The most common stress experienced by students is academic stress. Academic stress is defined as a condition where individuals experience pressure from the perception and assessment of academic stressors, which are related to science and education in higher education (Govarest and Gregoire, 2018). Research by Dr. Selye and other researchers proves that stress has a major influence on the development of human disease. Experts state that 70-75% of all illnesses are ultimately related to stress. Juliet Schor in Hager states that 30% of all adults experience high levels of stress. Three quarters of all women in the United States experience at least some stress which results in irregular menstrual cycles (Isnaeni, 2018). The most common stress experienced by students is academic stress. Academic stress is defined as a condition where individuals experience pressure from the perception and assessment of academic stressors, which are related to science and education in higher education (Govarest and Gregoire, 2018). Research by Dr. Selye and other researchers proves that stress has a major influence on the development of human disease. Experts state that 70-75% of all illnesses are ultimately related to stress. Juliet Schor in Hager states that 30% of all adults experience high levels of stress. Three quarters of all women in the United States experience at least some stress which results in irregular menstrual cycles (Isnaeni, 2018). Academic stress is defined as a condition where individuals experience pressure from the perception and assessment of academic stressors, which are related to science and education in higher education (Govarest and Gregoire, 2018). Research by Dr. Selye and other researchers proves that stress has a major influence on the development of human disease. Experts state that 70-75% of all illnesses are ultimately related to stress. Juliet Schor in Hager states that 30% of all adults experience high levels of stress. Three quarters of all women in the United States experience at least some stress which results in irregular menstrual cycles (Isnaeni, 2018). Academic stress is defined as a condition where individuals experience pressure from the perception and assessment of academic stressors, which are related to science and education in higher education (Govarest and Gregoire, 2018). Research by Dr. Selye and other researchers proves that stress has a major influence on the development of human disease. Experts state that 70-75% of all illnesses are ultimately related to

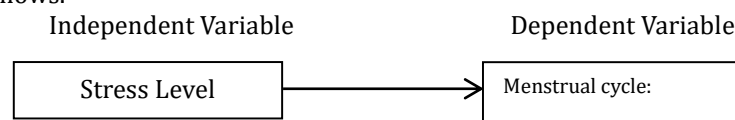
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Research on the relationship between psychological stress and the menstrual cycle in 1st grade high school students was conducted by Serly Toduho in Manado. The results obtained from 68 respondents showed that 35 respondents (51%) experienced moderate psychological stress and also abnormal menstrual cycles (Toduh, 2018). Based on the results of observations made on 30 Physiotherapy students at Hasanuddin University, it was found that 8 (26%) students experienced mild stress, 10 (33%) students experienced moderate stress, and 3 (1%) students experienced very severe stress. Based on the observations of researchers at the Nafsiah Stabat Health Vocational School, it was found that out of 34 female students, 5 (16%) of them experienced abnormal menstrual cycles. Based on the preliminary study, it can be seen that there are many female students who experience stress. Therefore, the researchers are interested in conducting research on the Relationship between Stress Levels and Menstrual Cycle Disorders in Young Women at the Nafsiah Stabat Health Vocational School in 2022.

2. Method

2.1 Conceptual Framework and Research Variables

The conceptual framework in this study was compiled based on a literature review where this study explained "The relationship between stress levels and menstrual cycle disorders in adolescent girls at SMK Kesehatan Stabat in 2022, with the aim of research, the variables can be described as follows.



2.2 Hypothesis

Based on the existing problem formulation, the hypothesis in this study is.

Ho : There is no relationship between stress levels and menstrual cycle disorders in adolescent girls in grades X and XI at the Nafsiah Stabat Health Vocational School, 2019.

Ha : There is a relationship between stress levels and menstrual cycle disorders in adolescent girls in grades X and XI at the Nafsiah Stabat Health Vocational School, 2019.

2.3 Types of research

This research is a type of correlation research with a cross sectional approach, which aims to determine the relationship between stress levels and menstrual cycle disorders. in young women at the Nafsiah Stabat Health Vocational School, 2019.

2.4 Place and time of research.

This research was conducted at the Nafsiah Stabat Health Vocational High School. The research was conducted in February 2022 May 2022.

2.5 Population and Sample

The population in this study were all 34 students of class X and XI SMK Kesehatan Nafsiah Stabat. The sample selection method used was total sampling, namely 34 respondents with inclusion criteria and exclusion criteria. The inclusion criteria set were: Nafsiah Health Vocational School student, In one year experiencing menstruation more than ten times at the time of the study, Willing to be a respondent. While the exclusion criteria were: Not present at the time of the study, Having a history of amenorrhea, Having endocrine disorders.

2.6 Variable Operational Definition

Table 1.
Operational definition

N0	Variable	Definition	Measuring Scale	Objective Criteria	Measuring instrument
1.	Stress level	Circumstances caused by a stimulus that can interfere with the ability of young women / SMK students so that there will be a physiological, adaptive, and psychological reaction by young women / SMK students in an effort to adapt to the situation.	ordinal	Light 0 - 42 Currently 43 - 76 Heavy > 76	Questionnaire DASS 42 (Depression Anxiety Stress) from Lovinond & lovinond (1995)
2.	Menstrual Cycle	Is the distance between the start date of menstruation and the next menstruation	Nominal	Normal: 21-35 days Abnormal < 21 days > 35 days	Questionnaire adopted from previous researchers

2.7 Data Collection Methods and Measurement Aspects

a. Method of collecting data

Primary data is data obtained directly from respondents, namely from the results of questionnaires distributed to respondents. Then the completed questionnaires were collected and checked for completeness by the researcher to be processed and analyzed. Primary data includes the identity of the respondent, namely the respondent's code, initials, age, and how many days the distance between menstruation last month and now is as well as the respondent's stress level questionnaire.

b. Secondary data

Secondary data is data obtained from documentation studies through the status of respondents about the number of female adolescent respondents at the Nafsiah Stabat Health Vocational School in 2019.

c. Aspects of Stress Level Measurement

Stress levels were measured using a questionnaire used by Apriani (2018) which was applied with a rating scale format (assessment scale). The stress levels on this instrument are normal, light, moderate, heavy, and very heavy. This questionnaire consists of statements that are seen from aspects of daily feelings, the lecture environment, individuals and families, as well as the lecture implementation system. The assessment is by giving a score, namely:

- a) Score 0 for each statement that has never been experienced.
- b) Score 1 for each statement that is rarely experienced.
- c) Score 2 for each statement that is often experienced and.
- d) Score 3 for each statement that is always experienced.

3. Results and Discussion

3.1 Univariate Analysis

From the research that has been carried out, it aims to determine the relationship between stress levels and the menstrual cycle in adolescent girls at the Nafsiah Stabat Health Vocational School, in 2019, with a total of 34 respondents and the research results are presented in the form of a table as follows:

Table 1

Frequency Distribution of Respondents by Age

No	Variable	Total (n)	Percentage (%)
1	Early teens (12 - 16 years)	32	94.1%
2	Late teens (17 - 25 years)	2	5.9%
Total		34	100%

In table 1, it can be seen that from 34 respondents, the majority were in their early teens (12-16 years) as many as 32 respondents (94.1%) and the minority with late teens (17-25 years) as many as 2 respondents (5.9%).

Table 2

Frequency Distribution of Respondents Based on Stress Level

No	Variable	Total (n)	Percentage (%)
1	Mild Stress (0 to 42)	21	61.8%
2	Moderate Stress (43 to 84)	12	35.3%
3	Severe Stress (85 to 126)	1	2.9%
Total		34	100%

In table 2 it can be seen that of the 34 respondents, the majority with mild stress levels were 21 respondents (61.8%) and the minority with severe stress levels were 1 respondent (2.9%).

3.2 Bivariate Analysis

Table 3

The Relationship between Stress Levels and Menstrual Cycles in Adolescent Girls at SMK Kesehatan Nafsiah Stabat

Stress Level	Menstrual Distance				Amount		P value	df
	Normal (21 - 35 days)		Abnormal (<21 days and >35 days)		N	%		
	N	%	N	%				
Light (0 -42)	19	55.89%	2	5.88%	21	61.77%	0.00	1
Currently (43 - 48)	1	2.94%	11	32.36%	12	35.29%		
Heavy (85 - 126)	0	0	1	2.94%	1	2.94%		
Total	20	58.83%	14	41.18%	34	100%		

Based on table 3 the results of the analysis of the relationship between stress levels and menstrual cycles in adolescent girls at the Napsiah Stabat Health Vocational School, data were obtained that there were 11 (32.36%) adolescents with moderate stress levels experiencing abnormal menstrual distances. The results of the statistical test obtained a P-value of 0.00, so it can be concluded that there is a relationship between stress levels and the menstrual cycle in adolescent girls at SMK Kesehatan Nafsiah Stabat.

3.3 Discussion

In this chapter, a discussion of the relationship between stress levels and menstrual cycle disorders is described in adolescent girls in grades X and XI at SMK Nafsiah Stabat in 2022. Age, Based on table 4.1. it was found that the majority of respondents in their early teens (12-16 years) were 94.1% and the minority of respondents in their late teens (17-25 years). According to WHO, the age group of adolescents is 10-19 years old. According to Roy (2018), adolescence is a special period in the human life cycle, adolescence is the final stage of human socio-biological maturation. This group is the forerunner of the nation's successor where the future of the nation and state is in their hands. The researcher assumes that the majority of respondents are early teens because the education programs in Indonesia for grades X and XI are in the age range of 15-18 years. It is hoped that teenagers as the successors of this nation are in good health without lacking anything in order to prepare themselves to become successors who can advance the country and the Indonesian nation.

Based on table 4.1.2. found that the majority of mild stress 21 respondents (61.77%). In general, adolescents experience physiological stress on the growth of their bodies towards adult humans, as well as psychologically looking for identity to become adult humans. Furthermore, there

are many factors that make adolescents become stressed, including: environmental factors, separation from family, learning to study, etc. In this case, the stress experienced by adolescents differs from one another depending on the coping strength of each teenager. If adolescents are able to deal with stress, it will not affect their health. According to Koochaki, 2018, stressors that cause stress can weaken the immune system and reduce the body's energy. There is fatigue in the body. Stressors that continue to occur will cause disease and physiological damage and can result in menstrual cycle disorders, illness and can lead to death.

From table 4.2.3 we get moderate stress for 12 respondents (35.3%), which if we look at the opinion of Koochi stressors that are at a moderate level will have an adverse effect on adolescent health, which can lead to menstrual cycle disorders and disease, while the minority 1 respondents (2.9%) with severe stress, in Koochi's opinion the stressor can have a weakening effect on the immune system so that it can cause disease and lead to death. In this study, only 1 person (2.9%) experienced severe stress, this may be caused by stressors that cannot be overcome so that young women experience severe stress. Researchers believe this severe stress can turn into moderate stress because of the learning process and lots of friends to communicate with. In this case, according to the researchers, further action is needed for young women who are stressed so that the supervising teacher pays special attention so that through the BP teacher (Pleasant Guidance) can help students / young women overcome the stress they experience. So that young women / vocational students can avoid disease and death.

Menstrual Cycle is the distance between the start date of the last menstrual period and the start of the next menstruation. The day the bleeding starts is called the first day of the cycle. Since the start of menstruation is not taken into account and the exact time of menstrual discharge from the external uterine ostium is not known, the cycle length contains an error of approximately 1 day. The length of the normal menstrual cycle or considered a classic menstrual cycle is 28 days. The average length of the menstrual cycle for a 12-year-old girl is 25.1 days, 27.1 days for a 43-year-old woman, and 51.9 days for a 55-year-old woman. So, actually the 28-day long menstrual cycle is not often found (Yustin Roy, 2018, only 10-15% of women have a 28-day cycle (Bobak, 2009). The normal menstrual cycle is the distance between last month's menstruation and this month is 21-35 days. In this study the majority of 20 (58.83%) respondents with normal menstruation. According to this researcher, it is the natural state of adolescents that physiologically have a menstrual cycle of 21-35 days. It was found that 14 (41.18%) had menstrual cycles less than 21 days and greater than 35 days. The results of this study are in accordance with Kusmiran (2022) who said that this abnormal menstrual cycle is divided into:

Polymenorrhea is the length of the menstrual cycle which is shortened from the length of the classic menstrual cycle, which is less than 21 days per cycle, while the bleeding volume is approximately the same or more than the volume of normal menstrual bleeding, while Oligomenorrhea is the length of the menstrual cycle that extends from the length of the classic menstrual cycle, namely more than 35 days per cycle. The volume of bleeding is generally less than the volume of normal menstrual bleeding. The menstrual cycle is usually also ovulatory with a proliferative phase that is longer than the proliferative phase of the classical menstrual cycle. Amenorrhea, can be caused by stress experienced by the respondent. According to researchers, this should be realized by young women so that this situation does not drag on so that later it can interfere with fertility due to the abnormal state of the menstrual cycle.

Stress is an internal condition that can be caused by physical demands from the body (disease conditions, exercise, etc.) or by environmental and social conditions that are considered potentially harmful, uncontrollable or exceed the individual's ability to cope (Hawari, 2020). Meanwhile, according to Atkinson (2018) stress refers to events that endanger a person's physical and psychological well-being, this is called the cause of stress or stressor and the individual's reaction to this stressful situation is called the stress response. is Hawari D (2018) one of the causes of menstrual cycle disorders is the stress factor. The body's reaction to stress is that there are changes in the body's limbs, including: in the hair, eyes, ears, thinking power, facial expressions, mouth, mouth and lips feel dry, difficulty swallowing, feeling suffocated), skin disorders, According to Kusmiran (2021) one of the factors that affect menstrual cycle disorders involves the menstrual hormone is stress). Disorders of the menstrual cycle involve integrative regulatory mechanisms that affect biochemical and cellular processes throughout the body, including the brain and psychology. The influence of the brain in hormonal reactions occurs through the hypothalamic-pituitary-ovarian pathway which includes multiple effects and feedback control mechanisms. Under stress, the limbic

system is activated. This system stimulates the release of a hormone from the hypothalamus, namely Corticotrophic Releasing Hormone (CRH). This hormone will directly inhibit the secretion of hypothalamic GnRH at the site of its production in the arcuate nucleus. This process probably occurs through increased secretion of endogenous opioids. Increased CRH will stimulate the release of endorphins and Adino Cortico Tropic Hormone (ACTH) into the blood. Endorphins are endogenous opioids whose role has been shown to reduce pain. An increase in the hormone ACTH causes an increase in blood cortisol levels. In women, amenorrhea hypothalamic symptoms indicate a state of hypercortisolism caused by an increase in CRH and ACTH. These hormones directly cause a decrease in GnRH levels, through which stress causes disruption of the menstrual cycle. From the normal menstrual cycle to oligomenorrhea, polimenorrhea, or amenorrhea. These clinical symptoms that arise depend on the degree of suppression of GnRH (Isnaeni, 2018). On the other hand, when stressed, the body will produce excessive adrenaline, estrogen, progesterone and prostaglandin hormones. When estrogen levels are high, it will provide feedback to the hypothalamus so that GnRH levels will be low (Puji, 2019). According to the author, stress levels can cause menstrual disorders from oligomenorrhea or polymenorrhea, which can then become amenorrhea which can interfere with fertility or uterine fertility in adolescent girls in grades X and XI at the Nafsiah Stabat Health Vocational School in 2022.

4. Conclusion

Based on the results of research conducted on the relationship between stress levels and menstrual cycle disorders in adolescent girls in grades X and XI at the Nafsiah Stabat Health Vocational School in 2019 it can be concluded as follows: It is known that based on the stress level of 34 respondents the majority of mild stress levels were 21 respondents (61, 77%), and moderate stress 12 respondents (35.29) and minorities with severe stress 1 respondent (2.94%). It is known that based on menstrual cycle disorders, from 34 respondents the majority of normal cycles (21-35) days were 20 respondents (58.83%) and 14 respondents (41.18%) were not normal. It is known that there is a relationship between stress levels and menstrual cycle disorders in adolescent girls where the significant level (α) = 5% (0.05) obtained p value 0.00 at the confidence level $df = 2$, $\text{sig} < \alpha$ (0.000 < 0.05).

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