Proceedings Series on Health & Medical Sciences, Volume 5
Proceedings of the 4th International Nursing and Health Sciences
ISSN: 2808-1021

The Correlation between Lifestyle and Stress with Pre-menstruation Syndrome in Nursing Students at Universitas Muhammadiyah Purwokerto

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ARTICLE INFO

Article history:

DOI:
10.30595/pshms.v5i.961

Submitted:
Oct 13, 2023

Accepted:
Feb 25, 2024

Published:
Mar 20, 2024

Keywords:.

Lifestyle, Stress,
Premenstruation Syndrome

ABSTRACT

Background: Premenstrual syndrome (PMS) is a collection of physical and psychological symtomps experienced by reproductive-aged women between 3-7 days before menstruation and disappear when menstruation begins. If not addressed, it can impact the productivity and health of women. Lifestyle and stress are believed to be the causes of PMS. Method: This quantitative study used a descriptive-analytic design with a cross-sectional approach. The sampling technique used random sampling with a total of 39 respondents. Results: The results of the chi-square test showed that physical activity had a p-value of 0.000 (p<.05), sleep patterns had a p-value of 0.000 (p<0.05), diet had a p-value of 0.000 (p<0.05), and stress had a p-value of 0.000 (p<0.05). The research results indicate that there is a significant correlation between lifestyle and stress with the occurrence of premenstrual syndrome in nursing students at Universitas Muhammadiyah Purwokerto. Conclusion: There is a correlation between lifestyle and stress with the occurrence of premenstrual syndrome in female nursing students at Universitas Muhammadiyah Purwokerto.

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1. INTRODUCTION

Women of childbearing age have a circumlunar rhythm in their reproductive system. Menstruation is a physiological phenomenon, having many biopsychosocial elements, affecting women of all cultures and socioeconomic levels[1]. In the late luteal phase, most women experience some disturbance of mind as well as body, regular late-luteal recurrences of a variety of nonspecific physical, emotional, behavioral, and cognitive symptoms, which usually subside soon after the onset of menstruation. This is called premenstrual syndrome[2].

A report from the World Health Organization (WHO) states that the incidence of premenstrual syndrome in the world is quite high, reaching 47.8%, with the highest prevalence in Iran at 98% and the lowest in Switzerland at 10%. WHO also says that the incidence of premenstrual syndrome in Asian countries is higher than Western countries[3].

According to the Royal College of Obstetricians and Gynecologists (2017) lifestyle can cause premenstrual syndrome. Lifestyle can be influenced by several things, such as physical activity, diet, sleep patterns. Psychological factors can also affect premenstrual syndrome. The prevalence of stress among college students is high, because students face academic stress to pursue academic success, namely graduating with a high GPA [4].

One of the factors that influence premenstrual syndrome is the cessation of physical activity; As a result, reduced physical activity can increase feelings of stress, emotional distress and depression. Physical activity can increase the production of endorphins, reduce levels of estrogen and steroid hormones, increase oxygen flow to muscles, reduce cortisol levels, and improve mental attitude [5]. Most students have poor sleep patterns. Premenstrual syndrome can be reduced with good sleep patterns, because sleep patterns can affect hormones in the body [1]. Poor nutrition also influences the occurrence of premenstrual syndrome. Most students have a poor diet because they do not follow a balanced diet which can result in premenstrual syndrome. Premenstrual syndrome can be caused by low carbohydrate intake. Diet affects blood sugar levels in the body, so carbohydrates can increase glucose in the body and affect mood because they produce the hormone serotonin which will reduce signs of premenstrual syndrome. Irregular eating patterns lower blood glucose levels [9]. A person who experiences stress will experience symptoms such as headaches, irritability, excessive restlessness or anxiety, difficulty sleeping, and difficulty concentrating. Therefore, stress can cause symptoms of premenstrual syndrome [2].

Based on the results of a preliminary study by conducting a survey of 5th semester female students of the Nursing Science Study Program at Universitas Muhammadiyah Purwokerto on October 20, 2022. The survey conducted by researchers was to collect respondents as many as 20 5th semester female students. From the results of the questionnaire it can be concluded that 60% of female students experienced moderate to severe premenstrual syndrome.

Based on the background of this problem, researchers are interested in taking and conducting further research regarding the relationship between lifestyle and stress and the incidence of premenstrual syndrome in nursing students at Universitas Muhammadiyah Purwokerto.

2. RESEARCH METHOD

This research uses a descriptive analytical method with a cross-sectional approach. The population in this study were 6th semester nursing students in classes A, B, C, and D and a sample of 39 female students was obtained. The sampling technique uses random sampling technique.

This research was conducted on March 30-31 2023 at Universitas Muhammadiyah Purwokerto who have received research ethics permission with registration number: KEPK/UMP/62/II/2023. The research instrument used was a questionnaire about the Shortened Premenstrual Assessment Form (SPAF), Short International Physical Activity Questionnaire (IPAQ), Pirtzburg Sleep Quality Index (PSQI), Dietary Pattern Questionnaire, and Perceived Stress Scale (PSS). Test the validity and reliability of the instrument using Product Moment correlation and Conbarch's Alpha. Validity and reliability tests are carried out for questionnaires with variables dietary habit. The validity test was carried out on 30 respondents using the product moment correlation technique with a value of 0,554 - 0,833 and a reliability test using the Cronbach's Alpha technique with a value of 0,859. It can be concluded that the questionnaire is declared reliable or consistent. Data analysis consists of univariate analysis and bivariate analysis. The bivariate analysis used was the Chisquare test.

3. RESULT AND DISCUSSIONS

The research results can be seen in the tables below. Table 1 shows the results of the distribution of respondents' characteristics which include age and pre-menstruation syndrome.

3.1. Univariat

Table1. Frequency Distribution of the age and pre-menstruation syndrome (n=39)

Characteristics of Respondents	F	%
Age		
20	20	51,3
21	14	35,9
22	5	12,8
Pre-menstruation syndrome		
Light	13	33,3
Currently	7	17,9
Heavy	19	48,7

Based on table 1 above, it is known that most of the respondents are 20 years old, namely 20 (51.3%) respondents, and have an pre-menstruation syndrome (100%) of respondents.

Table 2. Frequency Distribution of Physical Activity, Sleep Patterns, Dietary habit, and Stress (n=39)

Variable	F	%
Physical Activity		
Tall	8	20,5
Currently	11	28,2
Low	20	51,3
Sleep Pattern		
Light	13	38,5
Currently	48	33,3
Heavy	10	28,2
Dietary Habit		
Good	17	43,6
Not good	12	30,8
Bad	10	25,6
Stress		
Light	0	0
Currently	17	43,6
Heavy	22	56,4

Based on table 2, it can be explained that most of the respondents had low physical activity, namely 51.3%, had mild sleep pattern disturbances, namely 38.5%, had a good eating pattern, namely 43.6%, and experienced severe stress as much as 56.4 %.

3.2. Bivariat

Table 3. Relationship Between Physical Activity, Sleep Patterns, Dietary Habit and Stress

Variables	Premenstrual Syndrome			p-value
	Severe (%)	Moderate (%)	Low (%)	
Physical Activity	87.5	12.5	0	
Tall	54.5	27.3	18.2	0.000
Currently	0	15	85	
Low				
Sleep Patterns	86.7	6,7	6,7	
Light	0	46,2	53.8	0.000
Currently	0	0	100	
Heavy				
Dietary habit				
Good	76.5	17,6	5,9	
Not good	0	25	75	0.000
Bad	0	10	90	
Stress				
Currently	76.5	23.5	0	0.000
Heavy	0	13.6	86.4	

The chi-square test results obtained a significant p-value = 0.000 (< α = 0.05). This means that there is a relationship between physical activity, sleep patterns, eating patterns and stress with the incidence of premenstrual syndrome. This is supported by research conducted by Sitorus (2020) regarding the relationship between activity and the incidence of *premenstrual syndrome* (PMS). The study found that physical activity was associated with *premenstrual syndrome.* Physical activity contributed to reducing the rate of *premenstrual syndrome* [5]. Another research was also conducted by Alwafa (2021) who said that there was a significant relationship between physical activity variables and premenstrual syndrome [8]. Based on the results of the research analysis, researchers speculate that lack of physical activity can cause premenstrual syndrome to get worse. In other words, women who do not regularly do physical activity, such as light exercise, can experience more severe premenstrual syndrome. Then it is in line with research conducted by Lutfiyati (2021) regarding the relationship between sleep patterns and the incidence of *premenstrual syndrome* (PMS). The results show that there is a significant correlation between the two [6]. Research was also conducted by Chowdhury & Chakraborty (2017) who said that women with premenstrual syndrome had worse sleep quality compared to women who did not experience premenstrual syndrome [9]. Based on the results of the questionnaire analysis, the worse the quality of sleep, the greater the

severity of premenstrual syndrome. Research conducted by Maharani & Samaria (2021) regarding the relationship between diet and premenstrual syndrome found that there is a significant relationship between diet and premenstrual syndrome [7]. Research also conducted by Husna (2022) shows that diet is related to the incidence of premenstrual syndrome in adolescent girls. This means that the better the diet, the milder the degree of premenstrual syndrome [10]. Then research conducted by Hidayah Bohari (2020) found that there was a relationship between stress levels and premenstrual syndrome in female students [2]. Another study conducted by Matsumoto (2019) stated that stress is related to the intensity of premenstrual syndrome symptoms experienced by most women [3].

Based on the point of view above, it can be concluded that lack of physical activity can make premenstrual syndrome worse. In other words, women who don't do regular physical activity, such as light exercise, can experience more severe premenstrual syndrome. Researchers found that premenstrual syndrome symptoms were worse with less physical activity, and conversely, symptoms were milder with more intense physical activity. Then the lighter the sleep pattern disturbance, the lighter the symptoms of premenstrual syndrome and conversely the more severe the pattern disturbance is, the more severe the symptoms of premenstrual syndrome are felt. Adequate sleep can restore the body's physiological and psychological well-being. Sleep is a human need, during sleep the body carries out a recovery process and returns it to optimal condition. A good sleep pattern can relieve premenstrual syndrome because hormones in the body are influenced by good and bad sleep patterns [11]. Then the results of research on eating patterns show that women who have poor eating patterns are at risk of experiencing premenstrual syndrome. Most students like foods that contain fat and lack nutrition. This affects the symptoms before menstruation because consuming fat can cause swelling and pain in the breasts. Lack of fruit consumption can also cause premenstrual syndrome. Premenstrual syndrome is caused by unhealthy portions, frequency and type of food. Researchers concluded that the better the respondent's diet, the lower the risk of suffering from premenstrual syndrome and vice versa. The results of the research above show that female students who have poor diets are at risk of experiencing premenstrual syndrome [10]. Students' routines and high academic demands make students stressed, and the many activities and high demands cause stress for students. The stress experienced by students is caused by the many activities that make them tired and exhausted. Most respondents experience premenstrual syndrome when experiencing stress because fatigue is a stress stimulus. Then the researchers concluded that the symptoms of premenstrual syndrome were more severe with more stress, and conversely, the symptoms were milder with less stress.

4. CONCLUSION AND RECOMMENDATION

Based on the results of research entitled the relationship between lifestyle and stress and the incidence of premenstrual syndrome in nursing students at Muhammadiyah University, Purwokerto, it can be concluded that most of the respondents were 20 years old, most of the respondents experienced severe premenstrual syndrome, most of the respondents had low physical activity, the majority of respondents experienced mild sleep pattern disturbances, the majority of respondents had good eating patterns, the majority of respondents experienced severe stress, there was a significant relationship between physical activity, sleep patterns, eating patterns, stress and the incidence of premenstrual syndrome in nursing students at Universitas Muhammadiyah Purwokerto.

Acknowledgements

We would like to extend our gratitude towards Universitas Muhammadiyah Purwokerto, and our respondents who have participated in this study.

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