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The Relationship Between Stress Levels And Physical Activity With Premenstrual Syndrome In D3 Midwifery Stikes Griya Husada Sumbawa Students In 2022

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ABSTRACT

Pre-menstrual syndrome is thought to occur 7-14 days before menstruation and consists of physical, psychological and behavioral disturbances that can occur in women and can be triggered or exacerbated by factors such as their stress level and physical activity. This study aims to analyze the relationship between stress levels and physical activity and the occurrence of premenstrual syndrome in female students. This study used a quantitative analytical research method with a cross-sectional design. D3 Midwifery female students class of 2021-2024 were used as the sample (n = 32) in this study. Sampling was done by total sampling technique. The research instrument used the Depression Anxiety Stress Scale (DASS) questionnaire and the Shortened Premenstrual Assessment Form (SPAF). Data analysis used the Kendall tau test. The results of statistical tests showed that there was a relationship between stress levels and the incidence of premenstrual syndrome (0.001<0.05), with a correlation coefficient of 0.708 and there was a relationship between physical activity and the incidence of premenstrual syndrome (0.001<0.05) with a correlation coefficient of 0.066. It can be concluded that there is a significant relationship between stress levels and the incidence of premenstrual syndrome in female D3 Midwifery Stikes Griya Husada Sumbawa students.

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1. INTRODUCTION

Acne vulgaris is an inflammatory skin condition caused by polysebaceous units that occurs in adolescents and young adults characterized by comedones, papules, pustules, and nodules.1 The distribution of acne depends on the density of pilosebaceous units, especially on the face, neck, chest, shoulders and back. Acne vulgaris can cause scars resulting in a lack of self-confidence, and can also lead to depression, therefore acne requires serious treatment.2

Premenstrual syndrome is a collection of physical, psychological and emotional symptoms associated with a woman's menstrual cycle. Approximately 80 to 95% of women of childbearing age experience premenstrual symptoms that can interfere with aspects of their lives. These symptoms are predictable and usually occur regularly in the two week period before menstruation (1).

Based on the report of the World Health Organization (WHO) Premenstrual Syndrome has a higher prevalence in Asian countries compared to Western countries. The results of a study by the American College of Obstetricians and Gynecologists (ACOG) in Sri Lanka in 2012 reported that PMS symptoms were experienced by around 65.7% of teenage girls. The results of Mahin Delara's study in Iran in 2012, found that around 98.2% experienced mild and moderate PMS symptoms (2).

Some women experience symptoms marked by physical, psychological, and behavioral changes from a week to a few days before menstruation, which is called premenstrual syndrome (PMS) (3). Research by Fatimah, Prabandari, & Emilia (4) shows that 22.30% of women experience physical symptoms due to PMS, such as sore breasts, dizziness, pain in muscles or joints, weight loss and

bloating; 21.60% experienced symptoms of fatigue and weakness; and 18.10% experienced a decrease in the desire to do activities at home. (3) revealed that the most commonly reported premenstrual symptoms were feelings of depression (95%), fatigue/decreased energy (92%), muscle, joint, stomach and back pain (89%), feelings of anger (86 %%), and a definite desire for food (85%). The incidence of PMS in Indonesia ranges from 70% to 90% in women of reproductive age, while 2% to 10% experience severe PMS symptoms called Premenstrual Dysphoric Disorder (PMDD) (5).

Symptoms of premenstrual syndrome that arise before menstruation will interfere with daily activities in young women until menstruation takes place. At least you will get complaints such as: anxiety, menstrual disorders, labile, sudden difficulty, fear, anger, interpersonal conflict, decreased interest in concentrating, changes in appetite, insomnia, loss of self-control. Complaints will affect daily activities and work. Complaints are not exacerbations of other psychiatric disorders (6).

One of the etiologies of premenstrual syndrome is a decrease in endorphin levels. Endorphin levels can be increased by doing physical activity. Physical activity can improve the quality of individual health and prevent various diseases (7). The prevalence of PMS in the population of women of reproductive age in Indonesia is 85% and those who experience moderate to severe PMS are as much as 60-70% (8). This study aims to determine the relationship between stress levels and the incidence of pre-menstrual syndrome in D3 Midwifery students at Stikes Griya Husada Sumbawa.

2. METHOD

This research was conducted in 2022 with the sample in the study, namely Semester III students, D3 Midwifery Study Program at Stikes Griya Husada Sumbawa, using a sampling technique, namely a total sampling of 32 female students. The type of research used is a quantitative analytic study method using primary data, this type of research is cross sectional. Data sources in this study include respondent identity data, stress levels, physical activity, and premenstrual syndrome. Premenstrual syndrome data were obtained from the SPAF (Shortened Premenstrual Assessment Form) form and the research instrument used the DASS (Depression Anxiety Stress Scale) questionnaire. As for physical activity data, it was obtained from a 24-hour physical activity recall questionnaire form from WHO and grouped into three categories, namely, mild, moderate, and severe .

Univariate analysis was used in the distribution of frequency and percentage of respondents, stress levels, physical activity and pre-menstrual syndrome events. Bivariate analysis used the Kendall Tau statistical test with the SPSS application.

3. RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Physical Activity in D3 Midwifery Students at STIKES Griya Husada Sumbawa in 2023

Physical Activity	Frequency	Percentage
Light	13	40.6
Moderate	14	43.8
Heavy	5	15.6
Total	32	100%

Based on Table. 1 it is known that out of 32 respondents there were 13 female students (40.6%) who did light category physical activity. There were 14 female students (43.8%) who did moderate category of physical activity, and there were 5 female students (15.6%) who did heavy category of physical activity.

Table 2. Frequency Distribution of Stress Levels in D3 Midwifery Students at STIKES Griya Husada Sumbawa in 2023

Stress Level	Frequency	Percentage
Normal	4	12.5
Light	2	6.3
Moderate	3	9.4

Weight	2	6.3
Very heavy	21	65.6
Total	32	100%

Based on Table. 2 it is known that out of 32 respondents there were 4 female students (12.5%) whose stress levels were in the normal category. There were 2 female students (6.3.%) whose stress level was in the mild category. There are 3 female students (9.4%) whose stress level is in the moderate category. There were 2 female students (6.3%) whose stress level was in the heavy category. and there were 21 female students (65.6%) whose stress level was in the very heavy category.

Table 3. Frequency Distribution of Pre-menstrual Syndrome in D3 Midwifery Students at STIKES Griya Husada Sumbawa in 2023

Pre-menstrual Syndrom	**Frequency**	**Percentage**
Yes	9	28.1
No	23	71.9
Total	32	100%

Based on Table. 3 It is known that of the 32 respondents there were 9 female students (28.1%) who experienced pre-menstrual. There were 23 female students (71.9%) who did not experience Pre-menstrual syndrome.

Table 4. The Relationship between Physical Activity and Pre-menstrual Syndrome in D3 Midwifery Students at STIKES Griya Husada Sumbawa in 2023

Physical Activity	**PMS**		**N**	**(%)**	**P Value**	**Correlation Coefficient**
	Yes	**No**				
Light	4	9	13	40.6	0,001	0,066
Moderate	4	10	14	43.8		
Heavy	1	4	5	15.6		
Total	9	23	32	100		

Based on the cross-tabulation between physical activity and the incidence of pre-menstrual syndrome in college students, it was found that most of the respondents were in moderate physical activity of 14 (43.8%) respondents. The significance value of the results of the Kendall Tau correlation test was 0.001 ($p < 0.05$), which means that there is a significant relationship between physical activity and the incidence of premenstrual syndrome in D3 Midwifery students at Stikes Griya Husada Sumbawa.

The symptoms of PMS may lead to significant distress and impairment of function. Although premenstrual symptoms per se are experienced by about 90% of women, only around 20% experience symptoms severe enough to cause substantial impairment of daily life activities (9).

Measurements of physical activity in this study included work, sports, and leisure activities. Since the respondents were all university students, their main activity was studying. This study found that the majority of respondents belonged to moderate physical activity (43.8%) and there was a relationship between physical activity and the incidence of PMS ($p = 0.001$). These results were reinforced by (6). who stated that there was a significant relationship between physical activity and the incidence of PMS (10), in his research on female students, found that physical activity had a p-value <0.05 and an Exp (B) of 10.81, meaning that women who do not do routine physical activity every week are 10.81 times more at risk experience PMS than women who do routine physical activity every week.

Physical activity, especially regular exercise, can trigger an increase in the production and release of endorphins. Endorphins are hormones that play a role in immune control and the stress response, and the presence of endorphins can trigger feelings of happiness. Excess estrogen, which can cause women to experience PMS, can be prevented by increasing endorphins (4).

Table 5. The Relationship between Stress Level and Pre-Menstrual Syndrome in D3 Midwifery Students at STIKES Griya Husada Sumbawa in 2023

Stress Level	PMS		N	(%)	P Value	Correlation Coefficient
	Yes	No				
Normal	4	0	4	12.6	0,001	0,708
Light	1	1	2	6.2		
Moderate	2	1	3	9.3		
Weight	1	1	2	6.2		
Very heavy	1	20	21	65.7		
Total	**9**	**23**	**32**	**100**		

Based on the cross-tabulation between physical activity and the incidence of pre-menstrual syndrome in college students, it was found that most of the respondents were in moderate physical activity of 14 (43.8%) respondents. The significance value of the Kendall Tau test results was 0.001 ($p < 0.05$), which means that there is a significant relationship between physical activity and the incidence of premenstrual syndrome in D3 Midwifery students at Stikes Griya Husada Sumbawa.

A wealth of evidence suggests that PMS is associated with increased daily stress and is exacerbated by stressful life events (11). premenstrual syndrome, menstrual cycle, premenstrual dysphoric disorder, women, symptom, luteal phase, depression, dysphoric disorder, premenstrual symptom, prevalence, double blind, progesterone, mood, oral contraceptive, and major depression" ranked ahead in both frequency and centrality (12). PMS is usually described as a constellation of both somatic and affective symptoms manifesting prior to the occurrence of menstruation and resolving with the onset of menstruation or within few days of menstruation (13)

Various academic and non-academic demands can affect student stress levels. Stressors that affect students include coursework, final semester exams, homework, social problems, and financial problems (9). Sampling was done by total sampling technique. The research instrument was measured subjectively through questions and questionnaires, the questionnaire used was the Depression Anxiety Stress Scale (DASS) containing 21 questions and the Shortened Premenstrual Assessment Form (SPAF). Data analysis used the Kendal tau test. The results of Kendall Tau's analysis found that there was a significant relationship ($p=0.001$) between levels of stress and physical activity and the incidence of Premenstrual Syndrome in D3 Midwifery female students. This is supported (14). Who found a significant association between perceived stress and the severity of PMS symptoms ($p < 0.05$). Research (4), also found a significant relationship between stress and PMS events ($p = 0.01$). The higher a person's stress level, the higher the risk of experiencing PMS. Stress factors can exacerbate PMS symptoms due to the influence of the hormonal system, which is regulated by the central nervous system. In times of stress, the hypothalamic-pituitary-adrenal axis (HPA) activates, resulting in the secretion of corticotropic releasing hormone (CRH) by the hypothalamus. CRH secretion stimulates the anterior pituitary to release adrenocorticotropic hormone (ACTH); it stimulates the release of cortisol.

The variations in hormone levels across the menstrual cycle cause an increase in negative emotions in women and can influence mood regulation and sensitivity to stress (15).

4. CONCLUSION

It can be concluded that there is a significant relationship between stress levels and the incidence of premenstrual syndrome in female D3 Midwifery Stikes Griya Husada Sumbawa students.

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