



## The Relationship Between Nutritional Status, Dietary Patterns, and Premenstrual Syndrome in Adolescent Girls

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### Abstract

**Introduction:** Premenstrual syndrome (PMS) is a common condition among adolescent girls that causes physical and psychological discomfort and may interfere with daily activities. Nutritional status and dietary habits, particularly the consumption of fast food and junk food, are considered important factors associated with the occurrence of PMS. Changes in adolescents' eating patterns toward high-calorie, high-fat, and low-fiber foods may increase the risk of nutritional imbalance and PMS symptoms. Therefore, this study aims to examine the relationship between nutritional status, fast food and junk food consumption, and premenstrual syndrome among adolescent girls.

**Objective:** Nutritional status is a state of balance between nutrient intake and needs, expressed using a Z-score value based on BMI/Age. The purpose of this study was to determine the relationship between overweight status of fast food and junk food with premenstrual syndrome (PMS) in female adolescents at SMA Negeri 1 Sukoharjo in 2025.

**Method:** The method used in this study was quantitative with a cross sectional approach which was carried out in May 2025 with a total of 87 female adolescent students, taken through purposive sampling, the research sample was taken according to the inclusion and exclusion criteria. The research instrument used the SPAF questionnaire consisting of 10 questions.

**Result:** Data analysis using univariate analysis with frequency distribution and bivariate analysis with spearman's rank correlation analysis the results of the study showed that the sig value was  $0,021 < p\text{-value } 0,05$ , which means that there is a significant relationship between nutritional status and the incidence of premenstrual syndrome (PMS) in female adolescents at SMA Negeri 1 Sukoharjo in 2025. Based on the results of the study, it was found that the sig value was  $0,034 < p\text{-value } 0,05$ , which means that there is a significant relationship between junk food and the incidence of premenstrual syndrome (PMS) in female adolescents at SMA Negeri 1 Sukoharjo in 2025.

**Conclusion:** , it was found that the sig value was  $0,010 < p\text{-value } 0,05$ , which means that there is a significant relationship between fast food and the incidence of premenstrual syndrome (PMS) in female adolescents at SMA Negeri 1 Sukoharjo in 2025.

**Keywords:** fast food, junk food, overweight, premenstrual syndrome

## Introduction

Premenstrual syndrome is a number of mental and physical changes that occur between the first and fourteenth days before menstruation begins. As many as 60% of adolescent girls feel physically and psychologically uncomfortable when experiencing premenstrual syndrome (PMS). More than 150 symptoms have been linked to PMS, such as sleep disturbances, antisocial behavior, and frequent crying (Astrika et al., 2021). These symptoms are typically psychological and behavioral, such as feelings of laziness, weakness, and fatigue, increased appetite and a preference for sour foods, emotional instability, and irritability, as well as other negative feelings, including headaches, fainting, weight gain due to the body retaining excess water, and back pain. Several factors that increase the risk of PMS include: women who have given birth, marital status, age, stress, eating habits, foods high in sugar, salt, coffee, tea, chocolate, carbonated drinks, and milk, nutritional deficiencies, smoking and alcohol consumption, and strenuous physical activity and lack of exercise (Saryono, 2021).

The impact of PMS symptoms can disrupt activities due to pain and discomfort. They also affect psychological well-being and can lead to weight gain, leading to overweight and even obesity. All menstrual disorders must be handled wisely to prevent overall health problems (Irene Febriani, 2020). Adolescence is a transitional period between childhood and adulthood. During this stage, individuals experience rapid physical, cognitive, and psychosocial changes, which increase their nutritional needs. Adolescents require special attention to their nutritional status because they are still in the growth and development phase, which can impact their nutritional status. A person's nutritional status can be measured by the Body Mass Index (BMI) and Waist-to-Hip Ratio (WHRR), which are based on the balance between energy intake and expenditure. Good nutritional status can influence students' intelligence levels and ability to understand course material (Hafiza, 2020).

The 2023 Indonesian Health Survey (SKI) showed that the prevalence of nutritional status in Indonesia (BMI/A) among adolescents aged 16-18 was 8.8% overweight and 3.3% obese. In Lampung, the prevalence of severely wasted is 1.8%, wasting is 5.5%, overweight is 6.4%, and obesity is 1.8% (Ministry of Health, 2023). According to the United Nations Children's Fund (2020), the dietary patterns of adolescents in Indonesia have changed, with consumption of fat and processed foods doubling. The dietary diversity of adolescents in Indonesia is also relatively poor, with only 25% consuming sources of iron and essential micronutrients from animal and plant sources. Furthermore, research found that 57.6% of adolescents have a diet that does not meet the General Guidelines for Balanced Nutrition (PUGS). Another study also showed that 97.5% of adolescents do not meet the Nutritional Adequacy Intake (RDA) for their daily energy intake (Mokoginta, 2020).

Factors that significantly influence overnutrition and obesity are the habit of snacking on ready-to-eat foods such as fast food and junk food, as well as premenstrual syndrome (PMS). Many teenagers are indifferent to healthy eating habits. Thanks to technological advances, more and more fast food options tempt people to meet their daily food needs. The increasing number of fast food restaurants has the potential to change people's lifestyles, especially teenagers. Fast food consumption by teenagers leads to excessive energy, fat, and sugar intake. Fast food is low in fiber and high in sodium (Alfora, 2023). Thus, the more fast food teenagers consume, the greater their risk of obesity and weight gain (Tanjung, 2022).

The 2021 National School-Based Health Survey in Indonesia shows that Indonesians frequently consume fast food. As many as 28.33% of men and 29.59% of women consumed fast food such as pizza, Burger King, KFC, California Fried Chicken, and McDonald's at least once in the past week. Dietary intake and physical activity are factors that directly influence

a person's nutritional adequacy, and a higher risk of obesity and overnutrition is also associated with a lack of physical activity. Consumption of fast food, which is high in calories, sugar, salt, and fat, along with reduced physical activity due to modernization, are the main factors causing obesity and overweight (Nisa, 2021).

According to research by Sondang (2024), there is a relationship between fast food consumption habits and nutritional status (RLPP), indicating that as fast food consumption (eating frequency) increases, nutritional status (RLPP) increases, indicating a risk of obesity. According to research by Idris and Enggar (2021), there is a relationship between nutritional status and premenstrual syndrome in adolescent girls at SMA Negeri 4 Palu with the results of the chi-square statistical test obtained a  $p$ -value = 0.00  $<0.05$ . Premenstrual Syndrome (PMS) can occur if adolescent girls are overweight and lack magnesium intake. Therefore, it is hoped that adolescent girls always maintain their nutritional status by controlling their weight every month and improving their nutrition properly. According to Benefita Rahma 2021 regarding the relationship between fast food consumption habits and stress, there is a menstrual cycle in adolescent girls at SMAN 12 Bekasi City, there is a significant relationship between fast food consumption and the menstrual cycle in female students of SMAN 12 Bekasi City with a  $p$ -value of 0.003 and OR 5.0. And there is also a significant relationship between stress levels and the menstrual cycle in female students of SMAN 12 Bekasi City with a  $p$ -value of 0.005 and OR 6.4 (Benefita, 2021).

Based on the results of a pre-survey conducted through interviews with five female students at SMA Negeri 1 Sukoharjo, it was found that female students experiencing PMS frequently consumed fast food and junk food such as fried chicken, seblak, nuggets, and kebabs at least once a week and only engaged in school activities. However, adolescents participating in extracurricular activities such as the Student Council (OSIS), Scouts, Flag Raising Team (Paskibra), and Red Cross (Red Cross) held activities two to four times a week.

## **Objective**

This study aimed to examine the relationship between nutritional status, fast food and junk food consumption, and premenstrual syndrome (PMS) among female adolescents at SMA Negeri 1 Sukoharjo.

## **Method**

The study employed a quantitative research design with a cross-sectional approach to analyze the relationship between nutritional status, fast food consumption, junk food consumption, and the incidence of PMS among female adolescents. The research was conducted in May 2025 at State Senior High School 1 Sukoharjo, Pringsewu District. The study population consisted of all female students who had experienced menstruation. A total of 87 female adolescents were selected as respondents using a purposive sampling technique, based on predetermined inclusion and exclusion criteria.

The inclusion criteria included female adolescents who had experienced menstruation, were willing to participate in the study, and were present during the data collection period, while respondents who were ill, absent, or unwilling to complete the questionnaire were excluded from the study. Nutritional status was assessed using Body Mass Index for Age (BMI/A), calculated from measurements of body weight and height, and categorized according to standard nutritional status classifications.

Data on fast food and junk food consumption were collected using a structured questionnaire that assessed the frequency of consumption, while premenstrual syndrome

PMS was measured using the SPAF questionnaire consisting of 10 items, which evaluates physical, emotional, and behavioral symptoms experienced before menstruation. Data collection was carried out directly by the researchers after obtaining permission from the school and informed consent from the respondents.

Data analysis was performed using statistical software. Univariate analysis was used to describe the frequency distribution of nutritional status, fast food consumption, junk food consumption, and PMS. Bivariate analysis was conducted using Spearman's rank correlation test to determine the relationship between nutritional status, fast food consumption, junk food consumption, and the incidence of PMS, with a significance level set at  $p < 0.05$ . Ethical principles were applied throughout the research process by ensuring voluntary participation, confidentiality, and anonymity of respondents.

## Result

Table 1. The Relationship Between Junk Food and Premenstrual Syndrome (PMS) in Adolescents

PMS		
Junk Food	r	0.227
	p	0.034
	n	87
Fast Food	r	0.273
	p	0.01
	n	87

The results of the analysis indicate a statistically significant relationship between junk food consumption and premenstrual syndrome (PMS) among female adolescents at SMA Negeri 1 Sukoharjo, Pringsewu, in 2025. The  $p$ -value obtained was 0.034, which is lower than the predetermined significance level of 0.05 ( $p < 0.05$ ), indicating that junk food consumption is significantly associated with the occurrence of PMS. The correlation coefficient ( $r = 0.227$ ) reflects a weak positive correlation, suggesting that adolescents who consume junk food more frequently tend to experience PMS symptoms more often, although the strength of the relationship is relatively low.

Similarly, the analysis showed a significant relationship between fast food consumption and premenstrual syndrome (PMS), with a  $p$ -value of 0.010 ( $p < 0.05$ ). This finding indicates that fast food consumption is significantly associated with PMS among adolescents. The correlation coefficient ( $r = 0.273$ ) also demonstrates a weak positive correlation, indicating that increased fast food consumption is associated with a higher likelihood of PMS symptoms. Although the correlation strength is weak, the association remains statistically meaningful.

These findings imply that dietary habits, particularly the consumption of energy-dense and nutrient-poor foods such as fast food and junk food, may contribute to the occurrence of PMS among adolescent girls. Therefore, promoting healthier eating patterns and reducing the intake of fast food and junk food may help minimize PMS symptoms and improve adolescents' reproductive health.

## Discussion

The research results revealed a significant value of  $0.034 < p$ -value of 0.05, indicating a significant relationship between junk food and the incidence of premenstrual syndrome (PMS) in adolescents at SMA N 1 Sukoharjo Pringsewu in 2025. Junk food is food that is unhealthy if consumed too frequently. Literally, "junk" (garbage, junk) and "food" (food) can be interpreted as "waste food." The term "junk food" is chosen because such food is useless and does not contain good nutrition for human growth and development, thus it can be

detrimental to health. (Tanjung et al., 2022) Junk food is food that is high in fat, salt, sugar, and calories but low in nutrients and fiber. Consuming junk food can trigger diseases such as obesity, overweight, diabetes, heart disease, and even cancer later in life (Herman et al., 2024).

Based on the research results above, the researchers' analysis indicates that the low nutritional content of junk food, particularly micronutrients, can trigger menstrual disorders, including premenstrual symptoms, dysmenorrhea, and menstrual cycle irregularities. Bivariate analysis revealed no association between junk food consumption habits and respondents' menstrual cycles. This finding aligns with the research by Manurung GE et al. (2021) that found no association between junk food type and frequency of consumption and respondents' menstrual cycles. Similarly, research in India found no significant association between junk food consumption habits and respondents' menstrual cycles.

The study found a significant correlation of  $0.010 < p\text{-value} < 0.05$ , indicating a significant relationship between fast food and the incidence of Premenstrual Syndrome (PMS) among adolescents at SMA N 1 Sukoharjo Pringsewu in 2025. Fast food is prepared from food prepared outside the home and served quickly. This influence has influenced the eating habits of urban adolescents. In recent years, fast food outlets have become increasingly common, such as in malls, supermarkets, and even on roadsides. Fast food is sold at affordable prices, offers friendly service, and attractive presentation, making it no surprise that many urban adolescents are attracted to it (Maulida & Banjarmasin, 2021).

These results differ from those of Kusumawati & Aniroh (2020), who stated that fast food consumption is a dominant factor in menstrual pain in adolescents. The results of this study also differ from research conducted by Negic et al., 2018, that the habit of consuming fast food and junk food affects the menstrual health of adolescent girls, where the results showed that menstrual pain occurs more frequently in adolescents who frequently consume fast food (Annienda, 2020). Based on the researcher's analysis, the characteristics of fast food which has a much higher fat, calorie and sugar content compared to its fiber, vitamin and mineral content can cause disruption of hormone metabolism and organ function. Consumption of foods that have a high fat content can result in increased production of the hormone estrogen which will stimulate contractions in the uterus so that it can cause dysmenorrhea.

## Conclusion

There is a significant relationship between nutritional status, junk food, and fast food with the incidence of premenstrual syndrome (PMS) in adolescents at SMA N 1 Sukoharjo Pringsewu in 2025.

## Conflict of Interest

No declare.

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