



The Relationship Between Fast Food Consumption and the Incidence of Menstrual Pain in Adolescent Girls Aged 13-15 Years at State Junior High School 1 Benua Lima

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Abstract. Menstrual pain (dysmenorrhea) is a common health problem among adolescent girls and can interfere with daily activities and quality of life. Dietary habits, particularly frequent consumption of fast food, are suspected to contribute to the severity of menstrual pain due to their high fat and low nutritional content. This study aimed to analyze the relationship between fast food consumption and the incidence of menstrual pain among adolescent girls aged 13–15 years at State Junior High School 1 Benua Lima. This study employed a descriptive correlational design with a cross-sectional approach. The sample consisted of 65 adolescent girls selected using purposive sampling. Data were collected using structured questionnaires to assess fast food consumption frequency and menstrual pain intensity. Univariate analysis was used to describe respondent characteristics, while bivariate analysis was conducted using the Spearman rank correlation test. The results showed that most respondents frequently consumed fast food and experienced moderate menstrual pain. Bivariate analysis revealed a statistically significant relationship between fast food consumption and menstrual pain ($r = 0.245$; $p = 0.049$). Higher frequency of fast food consumption was associated with increased severity of menstrual pain, although the strength of the relationship was weak. In conclusion, fast food consumption is significantly associated with menstrual pain among adolescent girls. Promoting healthy dietary habits may help reduce the severity of dysmenorrhea and improve adolescent reproductive health.

Keywords: Adolescent Girls; Dietary Habits; Dysmenorrhea; Fast Food Consumption; Menstrual Pain.

1. INTRODUCTION

Dysmenorrhea or menstrual pain represents a dominant clinical phenomenon in reproductive health affecting 50-90% of the global female population with the highest prevalence found among adolescent groups. Although society frequently dismisses this condition as a natural biological consequence high pain intensity potentially paralyzes daily activities and significantly diminishes individual quality of life standards (Pangaribuan et al., 2023). Ignoring these complaints carries serious risks because excessive pain can indicate hormonal imbalances or hidden reproductive system disorders requiring serious medical attention (Lestari et al., 2025)

Various determinant variables ranging from genetic aspects to psychological conditions like stress levels play a major role in triggering menstrual pain during puberty. Fast food consumption has now become a primary focus for researchers due to product characteristics high in calories yet extremely poor in essential nutritional value for the body (Iranti & Sari, 2023). The saturated fat content and artificial chemical additives in instant foods can disrupt metabolic stability and cause anomalies in hormonal systems. Diets prioritizing high sugar and salt intake are clinically proven to worsen menstrual pain manifestations through complex biological mechanisms (Rembulan et al., 2025; Riasa et al., n.d.).

Excessive fast food consumption habits trigger an increase in systemic inflammatory responses which act as the primary trigger for pain during uterine contractions. These poor nutritional intakes affect abnormal prostaglandin hormone production so that the intensity and duration of menstrual pain become much heavier than usual (Amir et al., 2025; Khairunnisa et al., 2025). The imbalance of prostaglandin levels due to bad fat intake underlies the urgency to evaluate the impact of lifestyle on adolescent reproductive health more deeply. Understanding the link between food menu choices and physical responses during menstruation is a key factor in maintaining reproductive organ fitness from an early age (Husni et al., 2022; Utami et al., n.d.).

The age range of 13 to 15 years represents a critical pubertal transition phase characterized by very dynamic hormonal fluctuations in the adolescent female body. During this period social environmental influences and easy access to modern culinary options encourage teenagers to choose fast food as a daily lifestyle more frequently. Biological vulnerability meeting unhealthy eating patterns creates a double risk for the emergence of various painful menstrual disorders. Poor diet habits during this growth period are feared to have long-term impacts on the stability of their future reproductive functions.

This study focuses observations on female students at SMPN 1 Benua Lima aged 13-15 years as subjects undergoing changes in eating habituation and hormonal development. This research seeks to empirically prove the existence of a relationship between fast food consumption frequency and the incidence of dysmenorrhea among female adolescents at that school. A deep analysis regarding how much low-fiber eating patterns influence the severity of menstrual pain symptoms is the main target in this scientific investigation. The focus of this research is expected to dissect health phenomena that frequently occur but rarely receive special attention in educational institution environments.

Based on the explanation above this study specifically aims to map the correlation between fast food intake and the incidence of menstrual pain among students at SMPN 1 Benua Lima. The results of this study are projected to enrich literature regarding the importance of quality nutritional intake for adolescent reproductive health while serving as a valid database. These findings are also expected to become a strategic foundation for developing health education programs in schools to increase student awareness of the negative impacts of instant food on their menstrual comfort.

2. RESEARCH METHOD

This study uses a descriptive approach with a survey method aimed at analyzing the relationship between fast food consumption and menstrual pain occurrence in female adolescents aged 13-15 years at SMPN 1 Benua Lima. The population of this study consists of all female adolescents aged 13 to 15 years at SMPN 1 Benua Lima. A purposive sampling technique was used to select participants, with inclusion criteria being female adolescents who have experienced menstruation and report experiencing menstrual pain. A total sample of 10 participants was selected to be interviewed directly to gather data on their eating habits, specifically their fast food consumption.

Data collection was conducted using a questionnaire consisting of two parts. The first part collected information on fast food consumption, including the frequency and types of fast food consumed, as well as eating habits. The second part gathered data on menstrual pain occurrence, asking about the intensity and duration of pain experienced during menstruation. The questionnaire used a Likert scale to facilitate the analysis of the responses provided by the participants.

The collected data will be analyzed descriptively to identify patterns and relationships between fast food consumption and menstrual pain occurrence. This analysis will involve calculating frequencies and percentages for each category in the questionnaire, as well as conducting a comparative analysis to determine if there is a significant tendency between the two variables. The results of the analysis will be presented in tables and graphs to make interpretation easier.

3. RESULTS AND DISCUSSION

Univariat Analyze

Univariate analysis was conducted to describe the characteristics of respondents and the distribution of study variables, including age, age at menarche, duration of menstruation, fast food consumption, and the incidence of menstrual pain among adolescent girls aged 13–15 years at State Junior High School 1 Benua Lima.

Table 1. Distribution of Respondents by Age.

Age (Years)	Frequency (n)	Percentage (%)
13 years	19	29.2
14 years	24	36.9
15 years	22	33.8
Total	65	100.0

Table 1 shows that most respondents were 14 years old, accounting for 24 students (36.9%), followed by 15-year-olds with 22 students (33.8%) and 13-year-olds with 19 students (29.2%). The mean age of respondents was 14 years, indicating that the participants were within early to mid-adolescence.

Table 2. Distribution of Respondents by Age at Menarche.

Age at Menarche	Frequency (n)	Percentage (%)
10 years	10	15.4
11 years	15	23.1
12 years	20	30.8
13 years	17	26.2
14 years	3	4.6
Total	65	100.0

Based on Table 2, most respondents experienced menarche at the age of 12 years (30.8%), followed by 13 years (26.2%) and 11 years (23.1%). Early menarche may be associated with hormonal instability, which can influence menstrual characteristics and pain intensity.

Table 3. Distribution of Respondents by Duration of Menstruation.

Duration of Menstruation	Frequency (n)	Percentage (%)
Irregular	2	3.1
4 days	4	6.2
5 days	5	7.7
6 days	15	23.1
7 days	28	43.1
> 7 days	11	16.9
Total	65	100.0

Table 3 indicates that the majority of respondents experienced menstruation lasting 7 days (43.1%), while 16.9% reported menstruation lasting more than 7 days. Longer menstrual duration may be related to increased prostaglandin production, which can contribute to menstrual pain.

Table 4. Distribution of Respondents by Fast Food Consumption Frequency.

Fast Food Consumption	Frequency (n)	Percentage (%)
Rarely	10	15.4
Sometimes	22	33.8
Often	28	43.1
Very often	5	7.7
Total	65	100.0

Table 4 shows that most respondents frequently consumed fast food. A total of 28 respondents (43.1%) reported often consuming fast food, and 5 respondents (7.7%) reported very frequent consumption. High fast food intake may increase inflammatory responses associated with menstrual pain.

Table 5. Distribution of Respondents by Incidence of Menstrual Pain.

Menstrual Pain Level	Frequency (n)	Percentage (%)
No pain	2	3.1
Mild pain	23	35.4
Moderate pain	26	40.0
Severe pain	14	21.5
Total	65	100.0

Table 5 shows that most respondents experienced moderate menstrual pain (40.0%), followed by mild pain (35.4%) and severe pain (21.5%). Only a small proportion of respondents (3.1%) reported no menstrual pain. This finding indicates that menstrual pain is a common problem among adolescent girls.

Bivariat Analyze

Bivariate analysis was conducted to examine the relationship between fast food consumption and the incidence of menstrual pain among adolescent girls aged 13–15 years at State Junior High School 1 Benua Lima. Since the data were ordinal and not normally distributed, the Spearman rank correlation test was applied with a significance level of 0.05.

Table 6. Relationship Between Fast Food Consumption and Menstrual Pain.

Variables	Correlation Coefficient (r)	p-value	N
Fast food consumption – Menstrual pain	0.245	0.049	65

Table 6 shows the results of the Spearman correlation test between fast food consumption and the incidence of menstrual pain. The analysis revealed a correlation coefficient (r) of 0.245 with a p-value of 0.049 ($p < 0.05$), indicating a statistically significant relationship between fast food consumption and menstrual pain.

The positive correlation coefficient indicates that higher frequency of fast food consumption is associated with increased severity of menstrual pain. Although the strength of the correlation is classified as weak, the result suggests that dietary habits, particularly frequent consumption of fast food, may contribute to the occurrence and intensity of dysmenorrhea among adolescent girls. These findings support the hypothesis that fast food consumption is related to menstrual pain incidence and highlight the importance of healthy dietary patterns in maintaining adolescent reproductive health.

Discussion

This study examined the relationship between fast food consumption and the incidence of menstrual pain among adolescent girls aged 13–15 years at State Junior High School 1 Benua Lima. The findings showed a statistically significant relationship between fast food consumption and menstrual pain, indicating that dietary habits may play an important role in influencing the severity of dysmenorrhea in adolescents.”

The univariate analysis demonstrated that most respondents frequently consumed fast food, with more than half reporting often or very often consuming fast food. At the same time, the majority of respondents experienced moderate to severe menstrual pain. These findings highlight that unhealthy dietary patterns and menstrual pain are common issues among adolescent girls. Adolescence is a critical period characterized by hormonal fluctuations and rapid physical changes, making individuals more vulnerable to external factors such as diet and lifestyle.

The bivariate analysis revealed a significant positive correlation between fast food consumption and menstrual pain ($r = 0.245$; $p < 0.05$). Although the strength of the correlation was classified as weak, the positive direction indicates that increased frequency of fast food consumption is associated with higher levels of menstrual pain. This finding supports the hypothesis that frequent consumption of fast food may contribute to dysmenorrhea among adolescents.

From a biological perspective, fast food is typically high in saturated fats, trans fats, salt, and additives, while being low in essential nutrients such as fiber, vitamins, and minerals. High intake of saturated and trans fats has been shown to increase the production of prostaglandins, which are hormone-like substances responsible for uterine contractions during menstruation. Excessive prostaglandin production can lead to stronger uterine contractions, reduced uterine blood flow, and increased pain sensation during menstruation. This mechanism explains how dietary patterns may influence menstrual pain intensity.

Previous studies have reported similar findings. Research by Yenny Aulya et al., (2020) found that adolescent girls who frequently consumed fast food were more likely to experience moderate to severe dysmenorrhea compared to those with healthier eating habits. Another study by Syakila et al., (2022) reported a significant association between high-fat diets and increased menstrual pain intensity, emphasizing the role of nutrition in reproductive health. These studies support the results of the present study and strengthen the evidence that dietary habits are associated with menstrual pain.

Age at menarche and duration of menstruation may also contribute to the occurrence of menstrual pain. In this study, most respondents experienced menarche at the age of 12–13 years and had menstrual durations of seven days or longer (Simbung et al., 2023). Early menarche and longer menstrual duration have been associated with increased exposure to hormonal activity and higher prostaglandin levels, which may exacerbate menstrual pain. Previous research has indicated that adolescents with longer menstrual duration are more likely to experience dysmenorrhea due to prolonged uterine contractions.

Despite the significant association found in this study, menstrual pain is a multifactorial condition influenced by various factors such as physical activity, stress, sleep patterns, body mass index, and psychological factors. The weak correlation coefficient suggests that fast food consumption is only one of several contributing factors. This is consistent with previous literature stating that dysmenorrhea results from complex interactions between biological, behavioral, and environmental factors (Aulia et al., 2024).

The findings of this study have important implications for adolescent health education. Schools and healthcare providers should emphasize the importance of balanced nutrition and healthy eating habits as part of menstrual health education programs (Ariani et al., 2024). Reducing fast food consumption and encouraging diets rich in fruits, vegetables, and whole grains may help lower inflammation and reduce menstrual pain severity. Educational interventions targeting adolescents may contribute to improved awareness of the relationship between diet and reproductive health (Ida Kusumawati & Umi Aniroh, 2021).

This study has several limitations. The cross-sectional design limits the ability to establish causality between fast food consumption and menstrual pain. In addition, data were collected using self-reported questionnaires, which may be subject to recall bias. The study also did not control for other potential confounding factors such as physical activity levels or stress. Future studies using longitudinal designs and multivariate analysis are recommended to better understand the causal pathways and interactions between dietary habits and menstrual pain.

In conclusion, this study demonstrates that fast food consumption is significantly associated with the incidence of menstrual pain among adolescent girls. Although the relationship is weak, the findings highlight the importance of healthy dietary patterns in reducing the risk and severity of dysmenorrhea. Promoting balanced nutrition and healthy lifestyle choices among adolescents may contribute to better reproductive health and improved quality of life.

4. CONCLUSION

This study concludes that there is a statistically significant relationship between fast food consumption and the incidence of menstrual pain among adolescent girls aged 13–15 years at State Junior High School 1 Benua Lima. The findings indicate that higher frequency of fast food consumption is associated with increased severity of menstrual pain. Although the strength of the relationship is weak, the results suggest that dietary habits play a role in influencing dysmenorrhea during adolescence.

Based on these findings, promoting healthy eating patterns and reducing fast food consumption may help decrease the intensity of menstrual pain among adolescents. Schools and healthcare providers should incorporate nutritional education into adolescent health programs to raise awareness about the impact of diet on menstrual health. Future studies are recommended to include larger samples and consider additional factors such as physical activity, stress, and nutritional status to better understand the determinants of menstrual pain.

Acknowledgement

The heading should not be given a number and should instead be considered as a subsubsection heading.

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