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Research Article

THE IMPACT OF FAST-FOOD CONSUMPTION ON MENSTRUAL HEALTH AMONG COLLEGE WOMEN: A CROSS-SECTIONAL STUDY IN VIZIANAGARAM, INDIA

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ABSTRACT

The growing dependence on fast food among college students has raised concerns about its implications for women's reproductive health. This study explored the relationship between fast food consumption and menstrual health disturbances among 300 female students aged 17–25 years in Vizianagaram, Andhra Pradesh. Using a structured, self-administered questionnaire, data were collected on dietary intake, menstrual symptoms, lifestyle behaviours, and health awareness, followed by statistical analysis through chi-square tests and logistic regression. Nearly half of the participants consumed fast food more than twice a week, and higher intake was significantly associated with irregular menstrual cycles, prolonged bleeding, dysmenorrhea, mood instability, fatigue, and absenteeism from academic activities ($p < 0.05$). Despite these findings, only 20.8% of the respondents were aware of the impact of diet on their menstrual health, and more than half reported making no effort to reduce fast food intake. This gap between awareness and practice reflects both limited nutritional literacy and the normalization of menstrual discomfort. These results highlight that processed diets high in sugars, saturated fats, and preservatives, coupled with micronutrient deficiencies, may disrupt hormonal balance and exacerbate reproductive health issues. This study underscores the urgent need for integrated interventions, including dietary education, menstrual health awareness, and healthier campus food policies, to promote informed lifestyle choices among young women. By addressing these factors during the transitional college years, it may be possible to safeguard both immediate well-being and long-term reproductive health outcomes.

Keywords: Fast food consumption, Menstrual health, Dysmenorrhea, Premenstrual syndrome, Nutritional awareness.

INTRODUCTION

In the 21st century, the dietary behaviours of young adults, particularly college students, have undergone profound changes characterized by a marked increase in fast food consumption. The appeal of fast food lies in its convenience, affordability, taste, and strong peer influence, making it a regular part of student diets worldwide (Gupta *et al*., 2021; Ahmed & Parveen, 2021). This transition, however, has not been without consequences. Fast food is often energy dense but nutrient poor, typically containing high levels of saturated and trans fats, refined sugars, sodium, and preservatives, while being deficient in essential micronutrients such as fibre, iron, magnesium, and B vitamins. These dietary imbalances are known to contribute to obesity, insulin resistance, systemic inflammation, and endocrine disruption, all of which can interfere with hormonal balance and reproductive health (Alsulami, 2020; Verma & Mehta, 2022). For women of reproductive age, this raises significant concerns, as nutrition is a critical factor in maintaining menstrual health. Menstrual health, encompassing cycle regularity, duration, flow, pain severity, and premenstrual symptoms, is a vital indicator of female well-being and quality of life. It is governed by the hypothalamic–pituitary–ovarian (HPO)

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axis, which is highly sensitive to metabolic cues, lifestyle practices, and dietary intake (Bajalan *et al*., 2019). Any disruption in this axis can manifest as irregular cycles, dysmenorrhea, premenstrual syndrome (PMS), or more complex conditions such as polycystic ovary syndrome (PCOS). Emerging research indicates that frequent fast food consumption may contribute to these problems by exacerbating inflammation, altering hormonal regulation, and depriving the body of protective nutrients (Kulkarni *et al*., 2018; Adele *et al*., 2019).

College life itself creates conditions that can amplify the impact of poor dietary habits. The transition from adolescence to adulthood is accompanied by increased academic pressure, irregular schedules, greater independence in food choices, and high psychosocial stress, which together often encourage reliance on fast food (Jain *et al*., 2020). For female students, the combination of fast food intake and stress-related hormonal fluctuations may worsen menstrual disturbances. Despite the growing evidence of such associations, awareness among young women about the role of diet in shaping menstrual health remains limited. Many people continue to perceive menstrual discomfort as a normal and unavoidable part of life without recognizing that dietary modifications could provide relief or prevent worsening of symptoms. Globally, several studies have established connections between fast food consumption and menstrual disturbances. Gupta *et al*. (2021) reported that Indian college women who consumed fast food frequently were more likely to experience irregular cycles and severe PMS. Verma and Mehta (2022) reported that processed foods negatively influence estrogen regulation in adolescent girls, resulting in painful and inconsistent periods. Similarly, Ahmed and Parveen (2021) reported a higher prevalence of oligomenorrhea, menorrhagia, and mood instability among young women with high fast food intake. Adele *et al*. (2019) highlighted not only physical symptoms such as cramps and fatigue but also psychological consequences such as anxiety and irritability in girls who consumed fast food more than three times per week. These findings suggest that fast food consumption may influence menstrual health both physiologically and emotionally, affecting academic performance, social participation, and overall well-being.

The mechanisms underlying these effects are rooted in nutritional science. High-fat, high-sugar diets increase the expression of inflammatory markers, promote oxidative stress, and disrupt insulin sensitivity, which in turn can interfere with ovarian function and hormone regulation (Shaaban *et al*., 2014). Moreover, deficiencies in key micronutrients, such as magnesium, vitamin B6, and omega-3 fatty acids, which are often lacking in fast food, are linked to severe dysmenorrhea, mood disorders, and fatigue (Jahanfar & Lye, 2013; Bajalan *et al*., 2019). This dual effect of excess harmful nutrients and a lack of protective nutrients makes fast food particularly detrimental to menstrual health. In the Indian context, the issue is further complicated by cultural taboos surrounding menstruation and limited awareness of menstrual health literacy. Studies such as those of Jain *et al*. (2020) and Pattanayak and Mishra (2021) revealed that although menstrual complaints are common among college-aged women, very few seek healthcare support or connect their symptoms with modifiable lifestyle factors such as diet. Traditional silence around menstruation often discourages open discussion, resulting in young women being ill equipped to recognize unhealthy patterns. Moreover, the dietary transitions brought about by urbanization and modernization involve the introduction of fast food into semiurban and rural regions where traditional diets once dominated. This makes populations such as those in Vizianagaram particularly vulnerable, as they face both growing exposure to fast food and inadequate access to menstrual health education.

Despite the growing global literature, there remains a paucity of research specifically isolating the role of fast food in menstrual irregularities, particularly in semiurban Indian populations. Most existing studies have examined general dietary patterns without focusing on the unique nutritional deficiencies and metabolic risks of fast food. Consequently, the specific contribution of fast food to menstrual disturbances in such settings remains poorly understood. Given the increasing popularity of fast food in smaller towns and semiurban regions, it is crucial to generate region-specific evidence that reflects both the changing dietary landscape and the cultural context of women's health. The present study seeks to address this gap by investigating the association between fast food consumption and menstrual health among college women in Vizianagaram, Andhra Pradesh. It examines not only the frequency and types of fast food consumed but also the range of menstrual disturbances experienced, from irregular cycles and heavy bleeding to cramps, fatigue, and premenstrual mood swings. By analysing these associations, this study aims to highlight dietary risk factors that may otherwise be overlooked in reproductive health discussions. Furthermore, it emphasizes the need for preventive interventions, such as health education programs, nutrition awareness initiatives, and campus-based campaigns, that can empower young women to make healthier choices.

The significance of this study extends beyond academic interest. Clarifying the relationship between fast food consumption and menstrual health offers practical insights for policymakers, educators, and healthcare providers working with young women in semiurban India. Promoting nutritional literacy and encouraging healthier food habits can help prevent not only menstrual discomfort but also long-term reproductive disorders such as PCOS and infertility. Ultimately, this research underscores diet as a modifiable determinant of women's reproductive health and positions awareness and prevention as essential tools for safeguarding the well-being of future generations.

MATERIALS AND METHODS

Study Design

This study adopted a cross-sectional survey-based design to investigate the association between fast food consumption and menstrual health among college-going women in Vizianagaram, Andhra Pradesh. The survey approach was selected for its suitability in capturing self-reported dietary patterns, lifestyle factors, and menstrual health symptoms from a large and diverse population within a defined time frame.

Study Setting and Population

The study population comprised female undergraduate and postgraduate students enrolled in various degree colleges in Vizianagaram. This semiurban region was considered appropriate, as it represents communities undergoing dietary transitions due to urbanization, increased access to processed foods, and changing lifestyle behaviours.

Inclusion and Exclusion Criteria

The study included female students aged 17-25 years with either regular or irregular menstrual cycles who expressed a willingness to provide informed consent. Participants were excluded if they were pregnant or lactating; if they were diagnosed with endocrine disorders such as thyroid dysfunction or diabetes; or if they were receiving hormonal therapy or medication that could influence their menstrual cycles.

Sample size and sampling method

A total of 300 participants were selected through stratified random sampling to ensure adequate representation across different age groups, years of study, and academic disciplines such as Arts, Sciences, and Commerce. The sample size was calculated on the basis of a 95% confidence interval and a 5% margin of error, taking into consideration previous studies that reported a 30--40% prevalence of menstrual irregularities (Adele *et al*., 2019; Jain *et al*., 2020).

Data collection tool

A structured, self-administered questionnaire was used as the primary data collection tool. The questionnaire was developed after a review of validated instruments used in earlier menstrual health studies and was culturally adapted for the local setting. It underwent expert review by specialists in gynecology and public health to ensure face validity. The questionnaire covered demographic details, frequency and type of fast food consumption, menstrual characteristics, lifestyle factors such as sleep and physical activity, and awareness regarding the impact of diet on menstrual health.

Pilot testing

A pilot study was conducted with 30 students to evaluate the clarity, comprehension, and average time required for survey completion. On the basis of participant feedback, minor modifications were introduced to improve the wording of select items and to enhance cultural relevance before the final deployment of the questionnaire.

Data collection procedure

The final survey was conducted over a one-month period in early 2025. The participants were approached on campus during class breaks and extracurricular activities. Informed consent was obtained prior to participation, and the confidentiality and anonymity of the respondents were ensured throughout the process. Completion of the questionnaire required approximately 15--20 minutes.

Data analysis

All the data were coded and entered into SPSS version 25 and Microsoft Excel for analysis. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize demographic variables, dietary habits, and menstrual health characteristics. Chi-square tests were employed to examine associations between fast food consumption and menstrual symptoms, including irregularity, dysmenorrhea, and mood changes. Logistic regression analysis was performed to determine the odds of experiencing menstrual disturbances on the basis of the frequency of fast food consumption while adjusting for lifestyle-related confounders. A p value of less than 0.05 was considered statistically significant.

RESULTS AND DISCUSSION

A total of 300 college-going women aged between 17 and 25 years participated in the study. The majority were aged 17–19 years (46%), followed by 20–22 years (38%). Most were from the Science (42%) and Commerce (35.8%) streams and resided in hostels (36.3%) or rented accommodations (33.2%), reflecting moderate independence in dietary choices (Table 2). Fast food intake was highly prevalent. Daily consumption was reported by 13.3% of the participants; 35.8% consumed fast food 2–4 times per week, and 33.2% consumed fast food once per week. A total of 67.7% of the students consumed fast food in one or two meals per day, whereas 15.5% consumed it in three or more meals (Figure 1). Preference was highest for sugary snacks (36.7%), followed by burgers/pizzas (31.9%) and fried foods (19%). Peer influence (32.7%), convenience (30.5%), and taste preference (27%) were the main motivators. Despite frequent consumption, health awareness is limited. Only 13.7% consistently read nutrition labels, whereas 35.8% did so rarely and 11.1% never (Figure 2). This low nutritional literacy mirrors that reported by Alsulami (2020), who reported poor health consciousness in young populations.

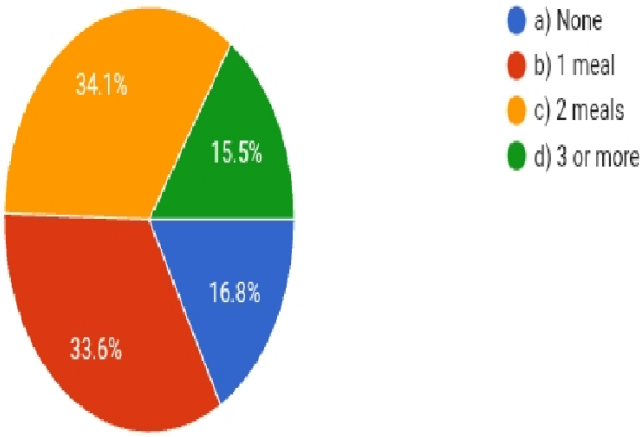

Figure 1. Distribution of daily meals, including fast food, among college women.

Most respondents (67.7%) reported consuming fast food at one or two meals per day, suggesting the regular incorporation of fast food into their daily diets.

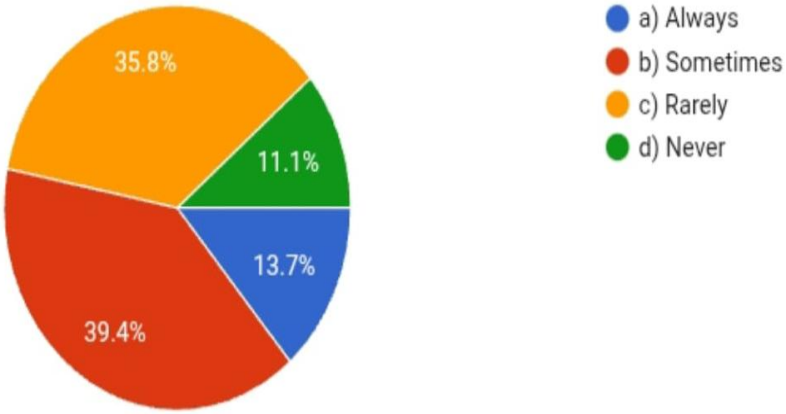

Figure 2. Frequency of reading nutritional labels before consuming fast food.

Only 13.7% of the participants always checked labels, while nearly half rarely or never did, indicating limited nutritional awareness. Menstrual disturbances were frequent. Only 40.7% reported a normal cycle length (21–35 days), while 30.1% experienced cycles longer than 35 days, and 14.2% had irregular cycles. The flow was mostly moderate (42%) or heavy (39.4%), with very heavy flow in 7.5% of the participants (Figure 3). Prolonged bleeding of 6–7 days was reported by 42.9% of the patients. Irregular cycles were significantly more common among high-fast food consumers (≥3 times per week) than among low-fast food consumers (<1 time per week) (54.3% vs. 26.1%, $\chi^2 = 14.82$, $p < 0.001$) (Figure 4). Similarly, dysmenorrhea was reported "often/always" by 63.8% of high consumers compared with 34.6% of low consumers ($\chi^2 = 12.67$, $p = 0.001$). Logistic regression revealed that consuming fast food ≥3 times per week increased the odds of experiencing irregular cycles by 2.74 (95% CI: 1.56–4.80, $p < 0.01$) and severe PMS by 2.21 (95% CI: 1.28–3.85, $p = 0.004$) (Table 1). The case narratives reinforced these findings. For example, Participant A (20 years, BMI 26), who consumed fast food 5–6 times weekly, reported irregular cycles, severe dysmenorrhea, bloating, fatigue, and poor concentration, which is consistent with the trends observed in the quantitative data. These findings parallel those of Najafi *et al*. (2018), who associated fast food consumption with greater bleeding and irregular menstruation.

Table 1. Comparative analysis: High- vs low-fast food consumers.

Criteria	Low Fast-Food Consumers	High Fast Food Consumers
Cycle Regularity	Mostly regular (26–32 days)	Irregular, delayed, or missed periods
Pain & Cramps	Occasionally or never	Frequent to constant dysmenorrhea
PMS Symptoms	Mild mood swings	Severe mood instability, bloating
Fatigue	Occasional	Frequent, affecting academic activity
Absenteeism	Rare	Sometimes to frequently skip classes
Diet Rating	Somewhat healthy to very healthy	Mostly unhealthy or very unhealthy

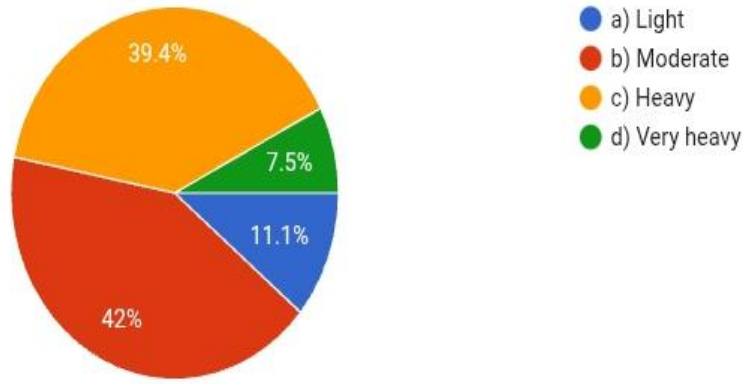

Figure 3. Distribution of menstrual flow intensity among participants.

Over 80% reported moderate to heavy flow, which may reflect possible associations with dietary patterns such as frequent fast food consumption.

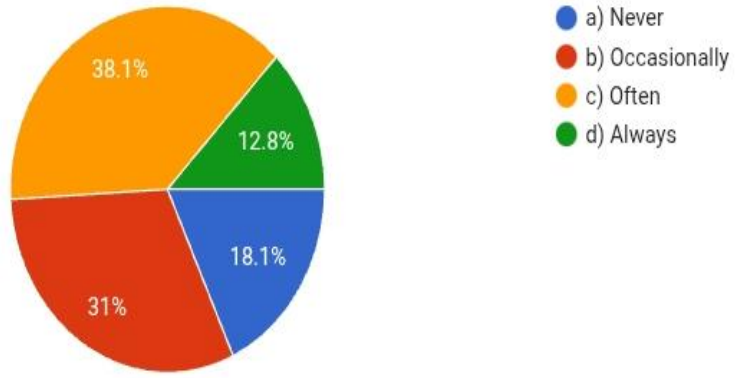

Figure 4. Prevalence of irregular menstrual cycles among college women.

More than two-thirds reported some degree of irregularity, potentially linked to lifestyle and dietary habits. Lifestyle habits appeared to exacerbate menstrual outcomes. Smoking (18.1%) and alcohol use (14.2%) were uncommon (Figures 5 and 6), limiting their confounding effects. Caffeine intake was low to moderate, with 38.1% consuming it rarely and 22.6% never (Figure 7). However, poor sleep and low physical activity were notable. Only 45.6% achieved 7–8 hours of sleep per night, whereas 27.9% slept fewer than six hours. Physical inactivity was widespread, as only 12.4% exercised daily. Menstrual discomfort often disrupted eating patterns, with 20.4% skipping meals during menstruation and 33.6% sometimes skipping (Figure 10). Kulkarni *et al*. (2018) argued that such sedentary habits, when coupled with a poor diet, dysregulate the hypothalamic–pituitary–ovarian axis, thereby worsening menstrual irregularities, which is a pattern that is consistent with the present study.

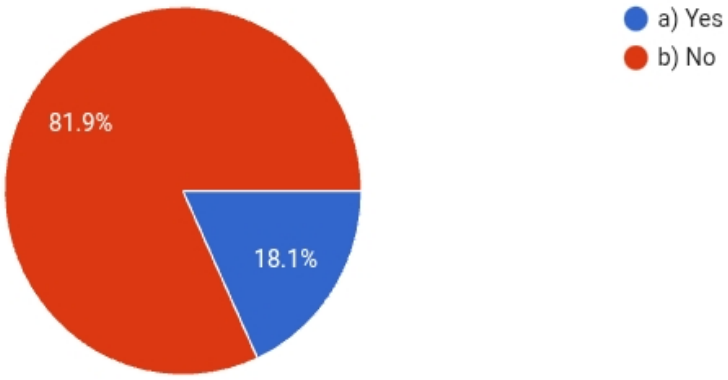

Figure 5. Smoking habits of college women in relation to menstrual health.

A large majority (81.9%) did not smoke, suggesting that smoking was not a major confounding factor in this study.

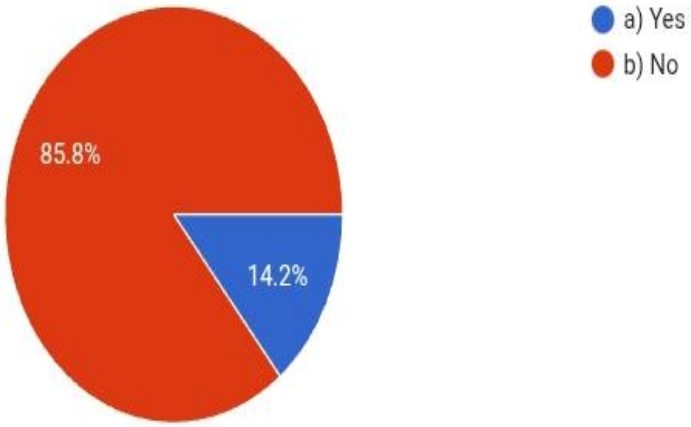

Figure 6. Alcohol consumption among college women.

Most participants (85.8%) reported not consuming alcohol, reducing its role as a confounding variable in the dietary analysis.

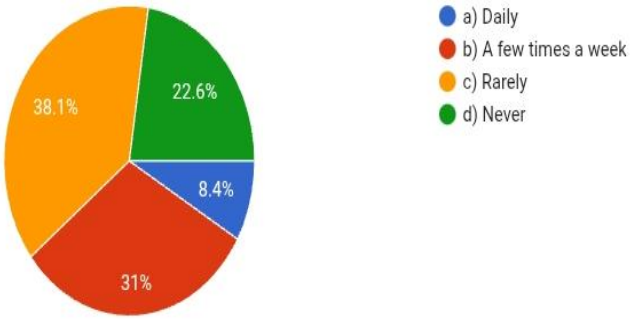

Figure 7. Frequency of caffeine consumption among participants.

Caffeine intake was generally low, with most consuming it rarely or never, although occasional use remains common. Awareness regarding the role of diet in menstrual health was poor. Only 20.8% acknowledged a dietary link, 44.7% denied it, and 34.5% were unsure (Figure 8). When asked if reducing fast food intake could improve menstrual symptoms, 45.6% responded "No" and 30.1% "Not sure," with only 24.3% agree (Figure 9). Attitudes toward fast food and menstrual health reflected scepticism. Over half (53.1%) did not believe that fast food worsened their symptoms, whereas 29.2% were unsure (Figure 12). This translated into limited behavioural change, with 52.7% reporting no attempts to reduce fast food intake for menstrual improvement, 20.8% reporting efforts, and 26.5% planning to reduce intake (Figure 13). Nutritional supplementation was inconsistent; only 20.8% of the participants used supplements regularly, 45.6% used supplements occasionally, and 33.6% never used supplements (Figure 11).

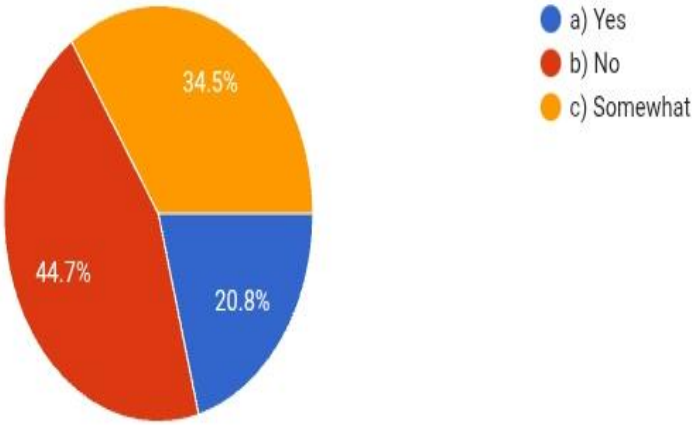

Figure 8. Awareness of the impact of diet on menstrual health.

Fewer than one quarter of the participants were fully aware of the role of diet in their menstrual health, highlighting a significant knowledge gap.

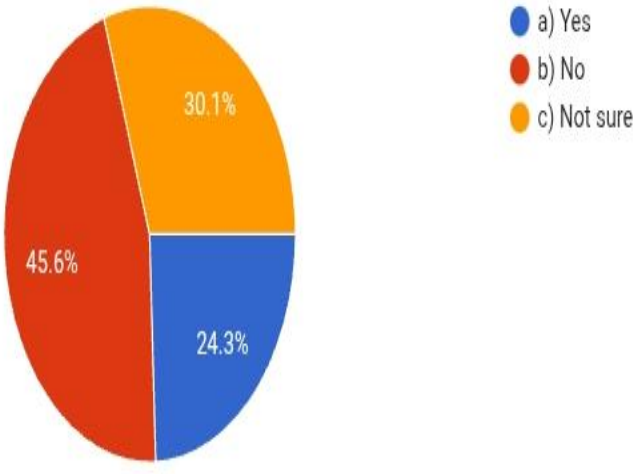

Figure 9. Perceptions of reducing fast food intake on menstrual symptoms.

Nearly half of the participants did not believe that reducing fast food would improve symptoms, reflecting skepticism or a lack of awareness.

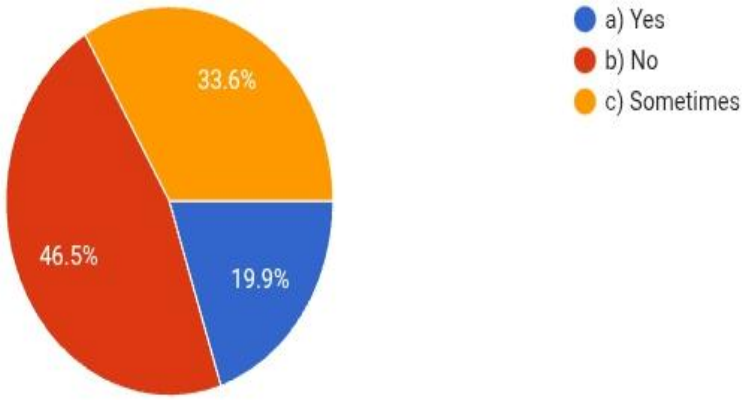

Figure 10. Meal-skipping behaviour during menstruation.

While 46.5% reported never skipping meals, over half occasionally or frequently skipped meals, suggesting that menstrual health influences eating patterns.

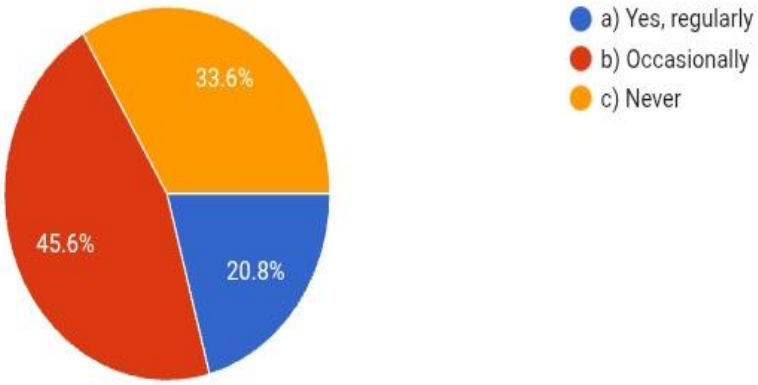

Figure 11. Use of dietary supplements among college women.

Regular supplement use was reported by only 20.8% of the participants, whereas occasional supplement use was more common, possibly leaving nutritional gaps unaddressed.

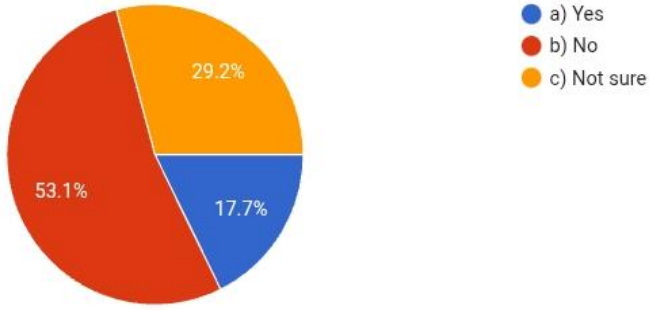

Figure 12. Perceived association between fast food consumption and worsening of menstrual symptoms.

More than half of the respondents did not perceive a link, whereas nearly one-third remained uncertain, suggesting poor dietary–symptom awareness.

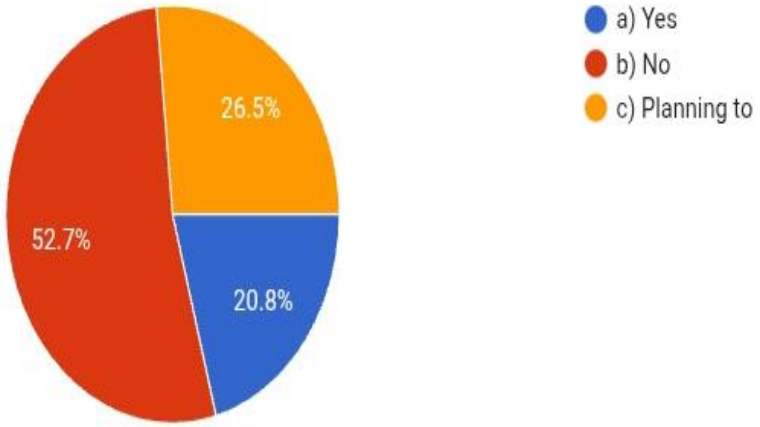

Figure 13. Efforts to reduce fast food for improving menstrual health.

A majority (52.7%) had not attempted to reduce fast food, whereas only one-fifth reported making dietary changes, indicating a low behavioural response despite symptoms. Despite gaps in awareness, there was moderate interest in interventions. While only 30.1% expressed interest in workshops, 42% desired personalized dietary advice, and 61.5% agreed that health education could improve their menstrual health. The combined results indicate a significant association between fast food consumption and menstrual disturbances, in line with Adele *et al*. (2019), Shaaban *et al*. (2014), and Verma and Mehta (2022). The logistic regression findings underscore that frequent fast food intake substantially increases the risk of irregular cycles and severe PMS. In addition, lifestyle deficits such as inadequate sleep and low physical activity further compound menstrual difficulties. Taken together, these findings emphasize that dietary patterns among young women are not only a matter of nutrition but also a determinant of reproductive health. Without corrective interventions, such behaviours may predispose this population to polycystic ovarian syndrome, infertility, and metabolic disorders later in life. Public health initiatives such as cafeteria reforms, menstrual health literacy programs, and personalized nutritional counselling could substantially reduce these risks, which is consistent with the recommendations of Goyal *et al*. (2020).

Table 2. Demographic, dietary, lifestyle, and menstrual health profiles of college-aged women in Vizianagaram (N = 300).

Age	23-25	8.8%
	17-19	46%
	20-22	38%
	26+	11%
Feid of study	Arts/humanities	13.7%
	Sciences	42%
	Commerce/business	35.8%
	Other	12%
Marital status	Single	34.5%
	Married	31.4%
	Divorced	25.7%
	Prefer to say	8.4%
Do you live	With family	23.9%
	In hostel	36.3%
	In a rented apartment	33.2%
	Other	6.6%
How often do you eat fast food	Daily	13.3%
	2-4 times a week	35.8%
	Once a week	33.2%
	Rarely/never	17.7%
Preferred fast food type	Freid food	19%

	Burgers/pizzas	31.9%
	Sugary snacks	36.7%
	Carbonated drinks	12.4%
How many meals a day include fast food	None	16.8%
	1 meal	33.6%
	2 meals	34.1%
	3 or more	15.5%
Main reason for fast food consumption	Taste preference	27%
	Convenience	30.5%
	Peer influence	32.7%
	Lack of cooking food	9.7%
Do you read nutritional labels before eating fast food consumption	Always	13.7%
	Sometimes	39.4%
	Rarely	35.8%
	Never	11.1%
Menstrual cycle length	<21 days	15%
	21-35 days	40.7%
	>35 days	30.1%
	Irregular	14.2%
Menstrual flow	Light	11.1%
	Moderate	42%
	Heavy	39.4%
	Very heavy	7.5%
Duration of menstrual bleeding	1-2days	7.5%
	3-5 days	40.3%
	6-7days	42.9%
	More than 7 days	9.3%
Do you experience menstrual cramps	Never	15.9%
	Occasionally	23.6%
	Often	37.2%
	Always	13.3%
Do you experience mood swings during menstruation	Never	11.5%
	Occasionally	36.7%
	Often	38.1%
	Always	13.7%
Do you experience bloating during do your period	Never	13.7%
	Occasionally	38.1%
	Often	35.4%
	Always	12.8%
Do you have irregular periods	Never	18.1%
	Occasionally	31%
	Often	38.1%
	Always	12.8%
Do you experience headaches during menstruation	Never	14.6%
	Occasionally	31.9%
	Often	38.5%
	Always	15%
Do you suffer from fatigue during menstruation	Never	16.4%
	Occasionally	35%
	Often	33.2%
	Always	15.5%
Do you skip college classes during menstruation	Never	15.9%
	Rarely	39.4%
	Sometimes	33.6%
	Frequently	11.1%
How often do you exercise	Daily	12.4%

	3-4 times/week	33.6%
	Once a week	38.9%
	Never	15%
Do you smoke	Yes	18.1%
	No	81.9%
Do you consume alcohol	Yes	14.2%
	No	85.8%
How many hours of sleep do you get per night	<4 hours	9.3%
	4-6 hours	27.9%
	7-8 hours	45.6%
	>8 hours	17.3%
Do you consume caffeine	Daily	8.4%
	Never	22.6%
	Rarely	38.1%
Are you aware of the impact of diet on menstrual health	Yes	20.8%
	No	44.7%
	Somewhat	34.5%
Do you believe fast food affects your menstrual cycle	Yes	19.5%
	No	46.5%
	Not sure	34.1%
Have you noticed a change in your periods which increased fast food intake	Yes	20.8%
	No	49.1%
	Not sure	30.1%
Do you think reducing fast food would improve your menstrual symptoms	Yes	24.3%
	No	45.6%
	Not sure	30.1%
Do you prefer healthier food options when menstruating	Yes	25.2%
	No	49.1%
	Some times	25.7%
Do you crave fast food during menstruation	Yes	18.1%
	No	51.8%
	Some times	30.1%
Do you eat more sugary food during menstruation	Yes	19%
	No	51.3%
	Sometimes	29.6%
Do you drink more carbonated drinks during menstruation	Yes	18.1%
	No	53.5%
	Sometimes	28.3%
Do you skip meals during menstruation	Yes	19.9%
	No	46.5%
	Sometimes	28.3%
Do you feel more hungry than usual during menstruation	Yes	15.5%
	No	53.1%
	Sometimes	31.4%
Do you have a diagnosed menstrual disorder	Yes	18.1%
	No	56.2%
	Not sure	25.7%
Are you currently on any medication for menstrual health	Yes	33.6%
	No	65.4%
	None	1%
Do you take any supplements	Yes, regular	20.8%
	Occasionally	45.6%
	Never	33.6%
Have you consulted a doctor for menstrual issues in the past year	Yes	36.7%
	No	62%

	None	1%
Do you track your menstrual cycle	Yes, with an app	15.9%
	Yes, manually	49.6%
	No	34.5%
How would you rate your overall diet	Very healthy	14.2%
	Somewhat healthy	41.2%
	Unhealthy	34.5%
	Very unhealthy	10.2%
How would you describe your fast food intake	High	13.7%
	Moderate	38.5%
	Low	36.7%
	None	11.1%
Has your fast food intake increased in the past year	Yes	17.3%
	No	53.1%
	Not sure	29.6%
Do you associate fast food with worsening of any menstrual symptoms	Yes	17.7%
	No	53.1%
	Not sure	29.2%
Have you tried to reduce fast food to improve menstrual health	Yes	20.8%
	No	52.7%
	Planning to	26.5%
Do you feel empowered to make dietary better health	Yes	21.2%
	No	49.6%
	Not sure	29.2%
Do your friends/family influence you're eating habits	Yes	29.6%
	No	44.7%
	Sometimes	25.7%
Would you be interested in attending a workshop on diet and menstrual health	Yes	30.1%
	No	47.3%
	Maybe	22.6%
Would you like to receive personalized dietary advice for menstrual health	Yes	42%
	No	40.7%
	May be	17.3%
Do you believe health education can improve menstrual wellness	Strongly agree	18.6%
	Agree	42.9%
	Disagree	30.1%
	Strongly disagree	8.4%

CONCLUSION

The present study demonstrated a clear association between fast food consumption and menstrual health disturbances among college-going women in Vizianagaram, Andhra Pradesh. Compared with those who consumed fast food, those who consumed fast food more frequently reported a greater prevalence of irregular cycles, prolonged bleeding, dysmenorrhea, mood fluctuations, fatigue, and academic absenteeism. These outcomes are likely linked to the high intake of saturated fats, sugars, and preservatives alongside deficiencies in fibre, iron, and essential micronutrients that are characteristic of fast-food diets. These findings are consistent with national and international evidence, reinforcing the critical role of nutrition in maintaining reproductive health. Despite the strong association observed, awareness levels among participants regarding the impact of diet on menstrual health were notably limited. A considerable proportion of the students did not recognize the connection between their eating patterns and menstrual symptoms, and more than half made no effort to reduce fast food intake. This gap between awareness and action reflects the influence of cultural stigma, limited menstrual health literacy, and normalization of menstrual pain, all of which hinder effective health-seeking behaviours. This study emphasizes the urgent need for comprehensive interventions that integrate nutritional education, menstrual health awareness, and supportive campus environments. Efforts such as curriculum integration, peer-led initiatives, and access to healthier food options on college premises could play a significant role in improving both dietary behaviours and menstrual health outcomes. Moreover,

strengthening student health services with regular screenings and counselling would provide young women with the support necessary to adopt preventive lifestyle practices. Overall, this study highlights that addressing dietary patterns during the transitional college years is not only vital for immediate well-being but also crucial for safeguarding long-term reproductive health and reducing the risk of chronic conditions such as PCOS and infertility.

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CONFLICT OF INTERESTS

The authors declare no conflict of interest

ETHICS APPROVAL

Not applicable

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AI TOOL DECLARATION

The authors declares that no AI and related tools are used to write the scientific content of this manuscript.

DATA AVAILABILITY

Data will be available on request

REFERENCES

Adele, A. A., *et al*. (2019). Junk food consumption and its association with menstrual disorders among adolescent girls. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology, 8*(2), 651–656.

Ahmed, A. S., & Parveen, R. (2021). Dietary patterns and their impact on menstrual cycle regularity in young females. *Nutrition and Women's Health Journal, 3*(1), 35–42.

Alsulami, S. A. (2020). Menstrual irregularities and unhealthy eating patterns among young women. *Journal of Family Medicine and Primary Care, 9*(2), 874–879.

Bajalan, Z., *et al*. (2019). Effects of nutrition and lifestyle on menstrual health: A systematic review. *Obstetrics & Gynecology International, 2019*, Article ID 7138975.

Goyal, M., *et al*. (2020). Impact of diet and lifestyle on premenstrual syndrome: A meta-analysis. *Journal of Mid-Life Health, 11*(3), 187–194.

Gupta, N., *et al*. (2021). Correlation of fast food intake with dysmenorrhea. *Journal of Clinical and Diagnostic Research, 15*(2), 8–12.

Jain, A., *et al*. (2020). Lifestyle and menstruation: A cross-sectional study among college girls. *International Journal of Reproductive Contraception Obstetrics and Gynecology, 9*(4), 1500–1505.

Jahanfar, S., & Lye, M. S. (2013). Lifestyle and menstrual disorders: A review. *International Journal of Women's Health, 5*, 771–780.

Kulkarni, A., *et al*. (2018). Fast food consumption and its impact on adolescent health: A systematic review. *Journal of Clinical and Diagnostic Research, 12*(5), OE01–OE04.

Najafi, F., *et al*. (2018). Relationships between dietary habits and menstrual disorders among female college students. *Journal of Education and Health Promotion, 7*, 57.

Pattanayak, R., & Mishra, A. (2021). Fast food consumption and its impact on menstruation among college girls. *International Journal of Research and Analytical Reviews, 8*(3), 452–456.

Shaaban, O. M., *et al*. (2014). Lifestyle, dietary habits and menstrual health among young women in Egypt. *Journal of Pediatric and Adolescent Gynecology, 27*(6), 332–339.

Verma, S., & Mehta, A. (2022). The impact of processed food on hormonal health in adolescent females. *International Journal of Endocrinology, 2022.*