

## Research Article

## MENSTRUAL IRREGULARITIES AND THEIR PSYCHOSOCIAL IMPACT AMONG COLLEGE WOMEN IN VIZIANAGARAM: A CROSS-SECTIONAL STUDY

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### ABSTRACT

Irregular menstruation is a prevalent but often underdiscussed health concern among young women, particularly in semiurban regions of India, where it is closely associated with hormonal imbalances, lifestyle stressors, and limited reproductive health literacy. This cross-sectional study surveyed 500 college-going women aged 17–25 years in Vizianagaram using structured questionnaires to assess menstrual patterns, associated symptoms, lifestyle factors, psychosocial impacts, and healthcare-seeking behaviour. More than one-third of the participants reported irregular cycles, often accompanied by heavy bleeding, severe cramps, or missed periods. These irregularities are linked to poor dietary habits, physical inactivity, and stress, whereas emotional consequences include heightened anxiety, stress, diminished self-esteem, and reduced academic performance. Despite the significant burden, fewer than half of the respondents sought medical consultation, and many remained unaware of the influence of lifestyle on menstrual health, with cultural stigma and social restrictions further limiting open discussion and timely care. The findings underscore the urgent need for targeted educational initiatives, stigma-free awareness programs, and improved access to youth-friendly healthcare services to address menstrual irregularities and their psychosocial consequences, thereby promoting reproductive well-being and empowerment among young women.

**Keywords:** Irregular menstruation, Psychosocial impact, Lifestyle factors, Menstrual stigma, College women.

### INTRODUCTION

Menstruation is a fundamental physiological process in women's lives, yet it continues to be surrounded by stigma, misinformation, and neglect, particularly in developing regions such as India. Despite being a normal biological function, menstrual health is often underprioritized in both policy and practice, resulting in a limited understanding of its complexities. Among the various menstrual disorders, irregular menstruation stands out as a significant but underdiscussed concern, especially among adolescents and young adult women. Irregular cycles may include variations in cycle length, skipped periods, abnormal bleeding patterns, or secondary amenorrhea. Globally, the

prevalence of menstrual irregularities ranges between 5% and 35%, whereas Indian studies report rates as high as 45% among urban youth populations, highlighting the magnitude of the problem (Deswal *et al.*, 2020; Sarkar *et al.*, 2023). A growing body of evidence suggests that lifestyle factors, including poor diet, stress, sleep disturbances, and sedentary behaviours, are strongly associated with irregular menstruation (Kaur *et al.*, 2021; Jena & Mishra, 2023). In particular, the increasing incidence of polycystic ovary syndrome (PCOS) among Indian adolescents and young women has emerged as a major contributor to menstrual irregularities, which are often linked to hormonal imbalances and metabolic dysfunction (Dubey *et al.*, 2021; Rafiq *et al.*, 2023). Studies

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estimate that 20–25% of college-aged women in India exhibit PCOS-like symptoms, yet a substantial proportion remain undiagnosed or untreated due to the absence of routine screening and persistent social stigma. In addition to physiological causes, irregular menstruation is also influenced by psychological stressors, with recent research during the pandemic years indicating heightened cycle disturbances among college students (Mittiku *et al.*, 2022).

The consequences of menstrual irregularities extend beyond biological discomfort. Research has consistently documented the psychosocial and academic impacts of irregular cycles. Young women experiencing irregular menstruation often report heightened levels of stress, depression, and low self-esteem, which in turn affect their academic performance and social participation (Jena & Mishra, 2023). In semiurban regions, where cultural restrictions remain deeply entrenched, irregular cycles are often perceived through the lens of impurity or bodily weakness. This not only fuels social withdrawal but also contributes to absenteeism from educational institutions (WaterAid India, 2021; UNICEF India, 2022). The combined weight of physical symptoms, emotional distress, and social stigma amplifies the vulnerability of young women and undermines their overall well-being. Despite sporadic improvements in awareness through public campaigns, menstrual literacy in India remains uneven. Studies suggest that more than 60% of Indian girls are unaware of menstruation until menarche, and even afterward, many do not receive accurate information about their menstrual health (WHO, 2023). Misconceptions remain widespread; irregular cycles are often dismissed as normal fluctuations or attributed to weakness rather than recognized as possible indicators of underlying conditions such as PCOS. Surveys further revealed that only approximately one-third of adolescents and young women had access to reliable menstrual education before their first period (Wihdaturrahmah, & Chuemchit, M. 2023). The persistence of myths and misinformation underscores a critical gap in reproductive health education and points to the broader invisibility of menstrual disorders in public discourse.

Compounding these challenges are significant barriers to diagnosis and care. Even when symptoms of irregular menstruation are severe or persistent, young women often refrain from seeking medical attention. Fear of pelvic examinations, limited access to affordable healthcare, and dismissive attitudes from healthcare providers, particularly in smaller towns and Tier 2 or 3 cities, contribute to underdiagnosis (Thomas *et al.*, 2021). The lack of female practitioners further discourages young women from consulting medical professionals, leaving many to rely on self-care, traditional remedies, or simply enduring their symptoms without intervention. These barriers create a vicious cycle in which irregular menstruation is normalized or neglected, despite its potential long-term implications for reproductive and mental health. Nevertheless, promising interventions have begun to emerge. School-based and community-led menstrual hygiene programs that integrate physical activity, balanced diets, and mental wellness have

been shown to reduce the severity of menstrual symptoms (Sarkar *et al.*, 2023). Digital innovations such as mobile applications for cycle tracking and teleconsultation platforms are improving awareness and accessibility, with pilot projects led by the Indian Council of Medical Research (ICMR, 2022) demonstrating encouraging outcomes. Additionally, integrating menstrual health education into secondary school curricula has been linked to improved health-seeking behaviour and reduced absenteeism (UNICEF India, 2022). These initiatives signal a growing recognition of menstrual health as a public health priority, although large-scale, sustainable, and culturally sensitive programs remain limited.

While existing research highlights the widespread nature of menstrual irregularities and their multifaceted impact, significant gaps persist. Few studies in India have adopted a holistic approach that simultaneously examines the prevalence, etiological factors, psychosocial consequences, and healthcare-seeking behavior associated with irregular menstruation. Furthermore, longitudinal studies that track the trajectory of menstrual irregularities from adolescence into adulthood remain scarce, limiting the development of evidence-based interventions and policies. Addressing menstrual irregularities requires not only biomedical solutions but also gender-sensitive health systems and culturally responsive educational strategies that empower young women to manage their reproductive health without stigma.

Against this backdrop, the present study investigated the prevalence and psychosocial impact of menstrual irregularities among college-going women in Vizianagaram, Andhra Pradesh. By exploring lifestyle correlates, emotional well-being, awareness levels, and healthcare-seeking behaviours, this research seeks to contextualize menstrual health challenges within the lived realities of young women in a semiurban Indian setting. The findings aim to inform targeted, youth-centered, and culturally appropriate health interventions that can address both the physiological and psychosocial dimensions of menstrual irregularities, thereby contributing to the broader discourse on women's reproductive health and well-being.

## MATERIALS AND METHODS

### Study Design

This investigation adopted a cross-sectional, survey-based design to examine the prevalence, lifestyle correlates, psychosocial impact, and awareness related to menstrual irregularities among college-going women in Vizianagaram, Andhra Pradesh. The research was conducted over a five-month period from January to May 2025. The study combined two sequential components: first, a review of the relevant literature was conducted to contextualize the biological, psychosocial, and educational implications of menstrual irregularities; second, empirical data were collected via a structured questionnaire distributed among students across different academic institutions in the district. This mixed approach ensured

both the integration of existing knowledge and the collection of first-hand quantitative and qualitative data reflecting students' lived experiences.

### Participants and Data Collection

Participants were recruited through stratified random sampling to ensure adequate representation across different age groups, academic disciplines, and levels of study, including intermediate, undergraduate, and postgraduate programs. The study population primarily consisted of students from Maharajah's Autonomous College and other institutions affiliated with Andhra University in Vizianagaram. The eligibility criteria included female students aged 15–25 years, currently enrolled in academic programs, and willing to provide informed consent. The exclusion criteria included students with chronic endocrine disorders not related to menstruation, such as adrenal hyperplasia or pituitary tumours, and those who were receiving hormonal therapy for conditions unrelated to reproductive health. A sample size of 500 participants was determined on the basis of prevalence estimates from prior epidemiological studies reporting irregular menstruation among adolescents and young adults ranging between 20% and 35%. Assuming a prevalence of 25%, with a 5% margin of error, a 95% confidence level, and an additional allowance for nonresponse, a minimum of 288 participants was needed. Thus, a final sample of 500 respondents was considered both statistically adequate and representative of the target population. Data were collected through a hybrid approach. Paper-based questionnaires were distributed on campuses, whereas a digital version was created in Google Forms and circulated via institutional mailing lists and student networks. Participation was voluntary and anonymous, and the respondents were clearly informed of their right to withdraw at any stage without penalty. Confidentiality was strictly maintained, and no personally identifiable information was collected.

### Survey instrument

The questionnaire was designed to capture multidimensional aspects of menstrual health and related factors. It included structured items such as multiple-choice and Likert-scale questions, along with open-ended prompts to allow for narrative responses. Information was collected on demographic variables, including age, level of study, and academic field. Menstrual health indicators included cycle regularity, duration, frequency, bleeding patterns, and associated symptoms such as pain or discomfort, along with the use of tracking methods. Lifestyle-related questions addressed diet regularity, junk food consumption, physical activity, sleep duration, and screen exposure. The psychosocial dimension included items on stress, anxiety, emotional well-being, and their impact on academic performance. Additional sections focused on cultural beliefs and practices related to menstruation, awareness of menstrual health, and any restrictions or stigmas experienced. The final section assessed medical history and

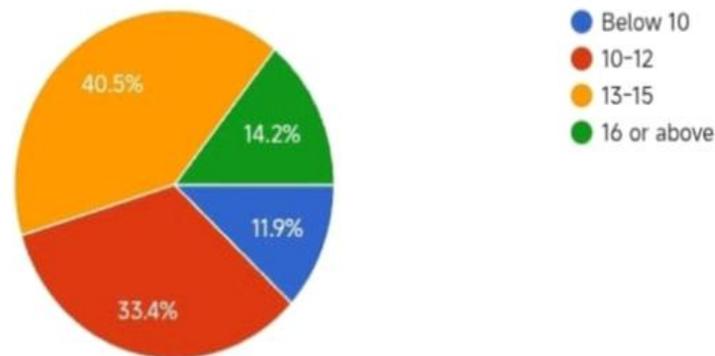
healthcare-seeking behaviour, including prior consultations, diagnostic evaluations, and the use of supplements or medications. All the responses were collected securely and stored in password-protected databases.

### Data analysis

The quantitative data were analysed via IBM SPSS Statistics version 26.0 and Microsoft Excel. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize menstrual characteristics, lifestyle behaviours, and psychosocial responses. Inferential analyses were performed to identify associations and group differences. Chi-square tests were used to evaluate associations between lifestyle factors and the presence of irregular menstruation. Pearson's correlation coefficients were calculated to examine the relationships between stress, sleep quality, and menstrual cycle regularity. Independent-sample *t* tests were employed to compare psychological and academic outcomes between students with regular cycles and those with irregular cycles. In parallel, qualitative data from open-ended questions were subjected to thematic analysis. The responses were coded, categorized, and synthesized into recurring themes that captured stigma, coping strategies, and knowledge gaps in menstrual health literacy. This integrated approach ensured both statistical rigor and contextual depth in interpreting the findings.

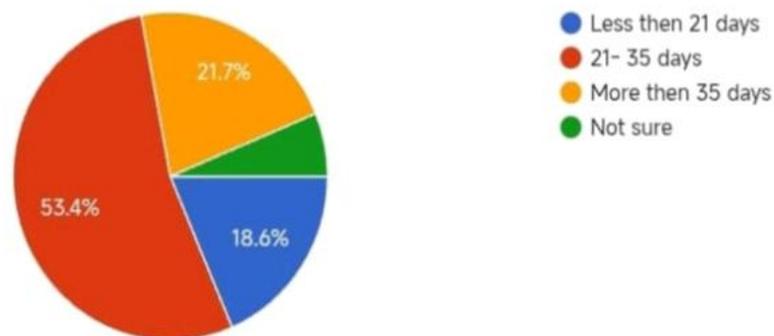
## RESULTS AND DISCUSSION

Among the 500 surveyed female students in Vizianagaram, the majority (46%) were aged 19–22 years, followed by 25.6% aged 15–18 years, whereas only 4.8% were above 25 years. With respect to education, 42% were in college, 34.2% were graduates, and 9.9% were pursuing postgraduate studies (Table 1). Menarche most commonly occurred at 13–15 years (40.5%), which is consistent with the global average, although 33.4% reported onset at 10–12 years, suggesting a trend towards earlier puberty potentially linked to nutrition and lifestyle (Figure 1). A smaller proportion (11.9%) reported very early menarche (less than 10 years), whereas 14.2% experienced late onset (16 years or above). With respect to menstrual regularity, only 44.7% reported consistently regular cycles, 37.3% reported irregular patterns, and 18% reported occasional irregularities. The average cycle length was within the normal range of 21–35 days for most participants (53.4%), yet 18.6% had shorter cycles and 21.7% reported longer cycles of more than 35 days (Figure 2). The period duration was generally 4–6 days for 52.9% of the students, but a considerable 31.3% reported short cycles lasting only 1–3 days, whereas 15.8% experienced prolonged bleeding of 7 days or more (Figure 3). Missing periods were relatively common, with 24.3% frequently reporting amenorrhea, 19.7% occasionally reporting amenorrhea, and 56.1% rarely reporting missing periods (Figure 4).



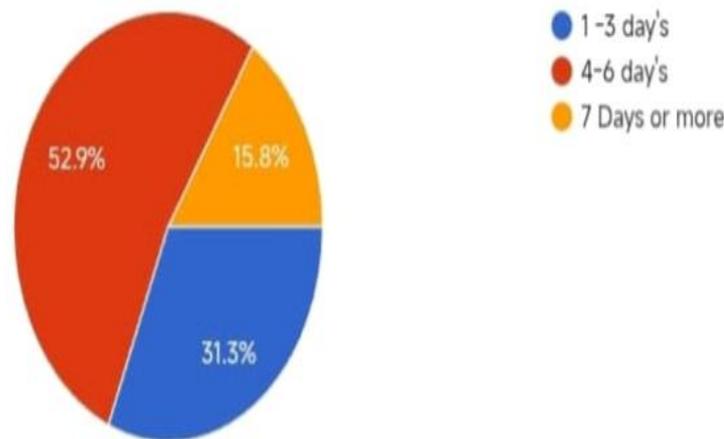
**Figure 1.** Menstrual history of the participants.

A majority (40.5%) reported menarche between 13–15 years, whereas 33.4% experienced early menarche at 10–12 years. Early onset before 10 years of age (11.9%) and delayed menarche at 16 years of age or older (14.2%) were also observed, suggesting lifestyle and nutritional influences.



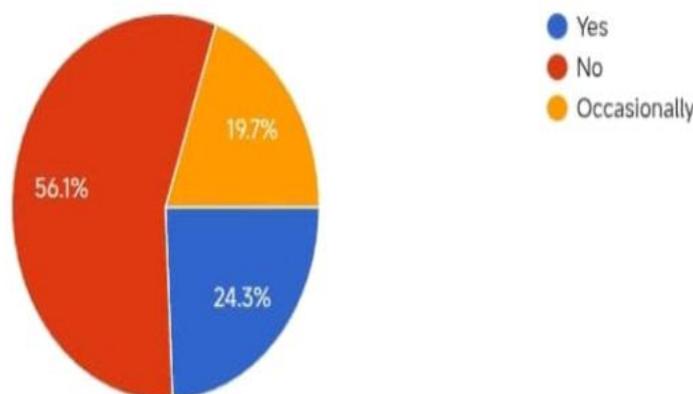
**Figure 2.** Average menstrual cycle length.

More than half of the participants (53.4%) reported normal cycles of 21–35 days, whereas 21.7% had shorter cycles and 18.6% had longer cycles, indicating possible hormonal imbalance. A small group (6.3%) was unsure of their cycle length.



**Figure 3.** Duration of menstruation.

Most participants (52.9%) experienced bleeding for 4–6 days, 31.3% had shorter cycles (1–3 days), and 15.8% reported prolonged bleeding ( $\geq 7$  days), reflecting possible menorrhagia or hormonal irregularities.

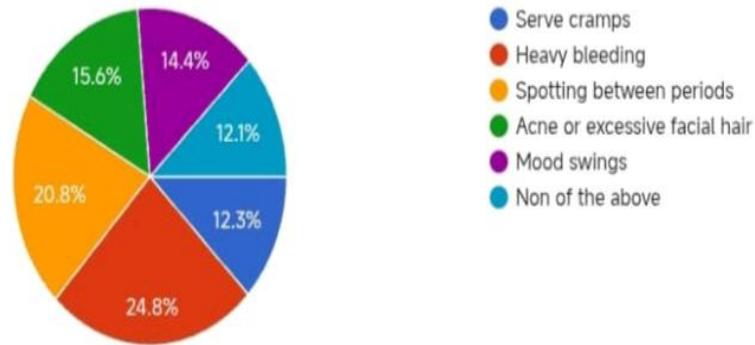


**Figure 4.** Incidence of missed periods (amenorrhea).

More than half (56.1%) of the participants rarely missed periods, whereas 24.3% reported the frequent absence of cycles, and 19.7% reported occasional irregularities, highlighting stress-, thyroid-, or PCOS-related factors.

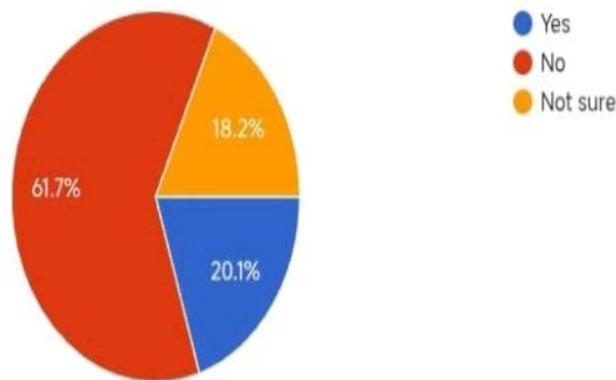
Common symptoms included heavy bleeding (24.8%), spotting between cycles (20.8%), acne and facial hair (15.6%), and severe cramps (12.3%), all of which are indicative of possible hormonal imbalance (Figure 5). Additionally, 20.1% of the participants reported diagnosed conditions such as polycystic ovarian syndrome (PCOS) or thyroid disorders, whereas 18.2% were unsure about their health status (Figure 6). These findings align with earlier reports in urban India suggesting that one in five adolescents' experiences PCOS or thyroid-related menstrual disruption (Kaur *et al.*, 2021). Lifestyle factors appeared to be strongly linked with menstrual irregularities. Approximately 34.4% of the students reported irregular

meal patterns, and 9.4% admitted to high junk food consumption, whereas only 29.9% maintained a balanced diet (Figure 7). Physical inactivity was also prevalent, as 67.6% either rarely or never exercised, with only 14.1% engaging in daily exercise (Figure 8). These trends parallel earlier studies showing strong associations between poor dietary habits, sedentary lifestyles, and menstrual disorders (Rafiq *et al.*, 2023). Stress and anxiety were widespread, with 15.4% frequently and 44.8% sometimes reporting elevated stress levels, particularly around menstruation, reinforcing evidence that psychosocial distress exacerbates irregularities.



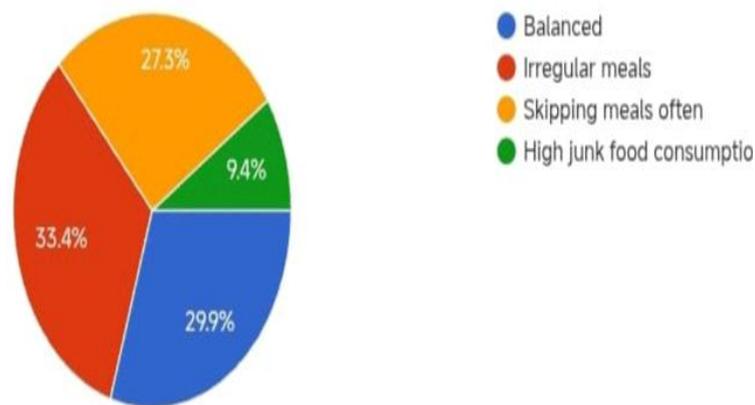
**Figure 5.** Associated symptoms of irregular menstruation.

While 24.8% reported no symptoms, others reported heavy bleeding (20.8%), severe cramps (15.6%), acne or facial hair (14.4%), mood swings (12.3%), and spotting (12.1%), reflecting hormonal imbalance and menstrual distress.



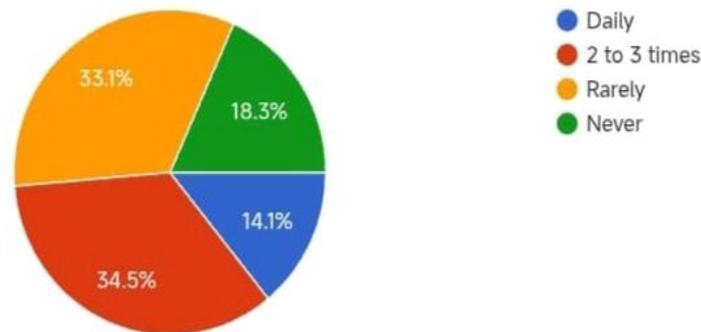
**Figure 6.** Diagnosed conditions among participants.

Approximately 61.7% reported no known condition, 20.1% had confirmed diagnoses such as PCOS or thyroid disorders, and 18.2% were unsure, underscoring gaps in medical screening and awareness.



**Figure 7.** Dietary habits of the participants.

Nearly one-third (33.4%) reported irregular meals, 27.3% consumed junk food frequently, and only 29.9% maintained a balanced diet. Skipped meals (9.4%) highlighted additional nutritional risks.

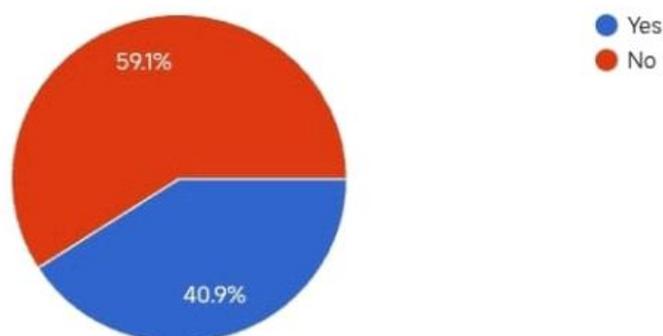


**Figure 8.** Frequency of physical exercise.

Two-thirds (67.6%) rarely or never exercised, whereas 14.1% engaged in daily physical activity. Sedentary behaviour was strongly associated with menstrual irregularities.

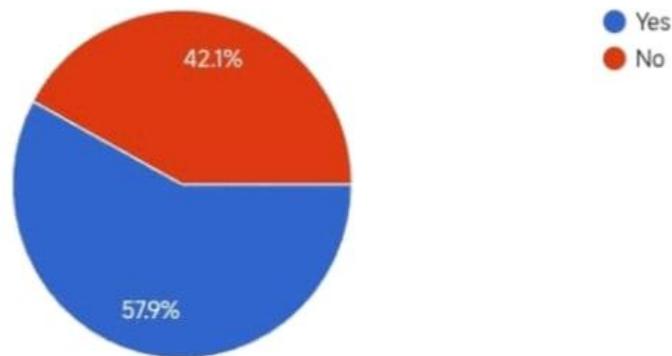
Healthcare utilization was relatively low despite the burden of symptoms. Only 40.9% had consulted a doctor for irregular menstruation, and of these, 45% had undergone diagnostic tests such as ultrasound or hormonal assays (Figure 9). A majority (61.8%) reported using medication or supplements, indicating attempts at self-management (Figure 11). However, 41.3% felt that their concerns were dismissed by healthcare providers, echoing previous findings by Thomas *et al.* (2021) on provider bias in menstrual health care. This underlines systemic gaps and mistrust in formal medical services. Awareness of lifestyle influences on menstrual health was moderate, with 57.9% acknowledging the role of factors such as sleep, diet, and exercise, whereas 42.1% remained unaware (Figure 10). Although half of the participants (50.7%) reported tracking cycles via calendars or apps, only 32.1% expressed interest in attending reproductive health workshops, suggesting persistent hesitancy in engaging with formal health education. Furthermore, many preferred natural remedies,

as 24.7% used herbs and 24.1% practiced yoga for regulation, whereas only 19.7% had used birth control pills. This preference for traditional or alternative approaches reflects cultural influences and a reluctance to adopt biomedical interventions. The psychosocial burden of irregular menstruation was significant. Half of the participants (50.2%) reported reduced self-esteem and confidence due to menstrual issues (Figure 12), 28.7% felt that their academic performance was negatively impacted, and 16% reported occasional effects (Figure 13). Similar findings were reported by Jena and Mishra (2023), who emphasized the academic toll of menstrual distress. Communication around menstruation remained limited; only 35% felt comfortable discussing menstrual issues with their mothers, 28.2% with friends, and very few with teachers or counsellors (8.4%) or fathers (18.6%) (Figure 14). Alarming, 6.1% reported discussing their problems with no one at all, reinforcing the silence and stigma surrounding their menstrual health.



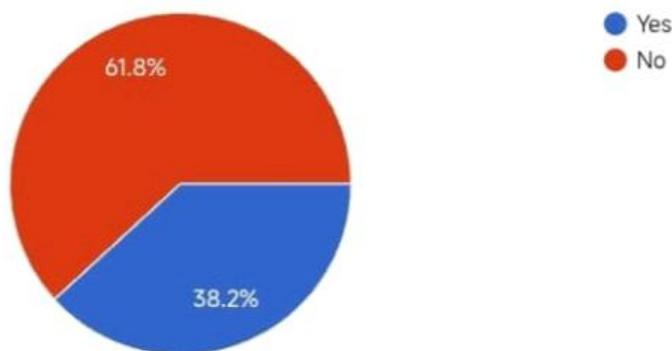
**Figure 9.** Consultation with healthcare providers.

A majority (59.1%) sought medical consultation for irregular periods, whereas 40.9% avoided professional help, reflecting stigma, a lack of awareness, or accessibility issues.



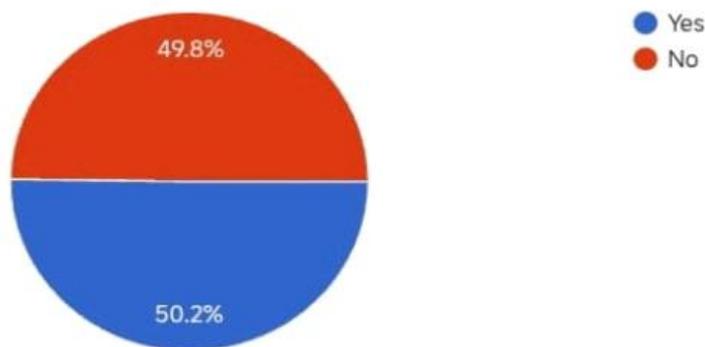
**Figure 10.** Awareness of lifestyle factors affecting menstruation.

More than half (57.9%) were aware of lifestyle influences such as diet, sleep, and exercise, whereas 42.1% lacked awareness, indicating the need for intensified health education.



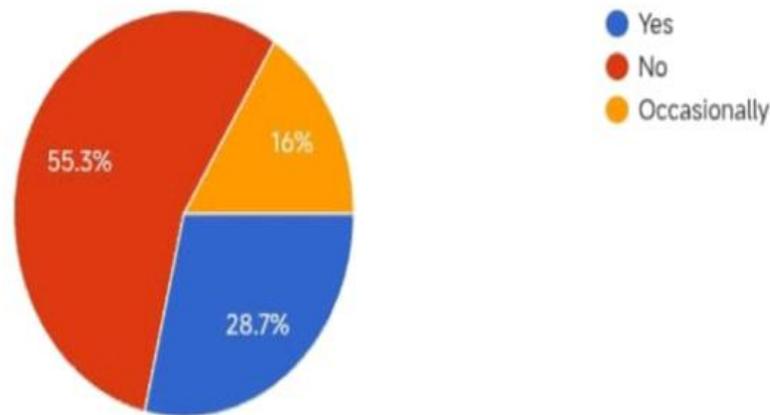
**Figure 11.** Use of medication or supplements.

A majority (61.8%) reported using medication or supplements to manage menstrual problems, whereas 38.2% relied on no treatment, reflecting varied health behaviours and medical access.



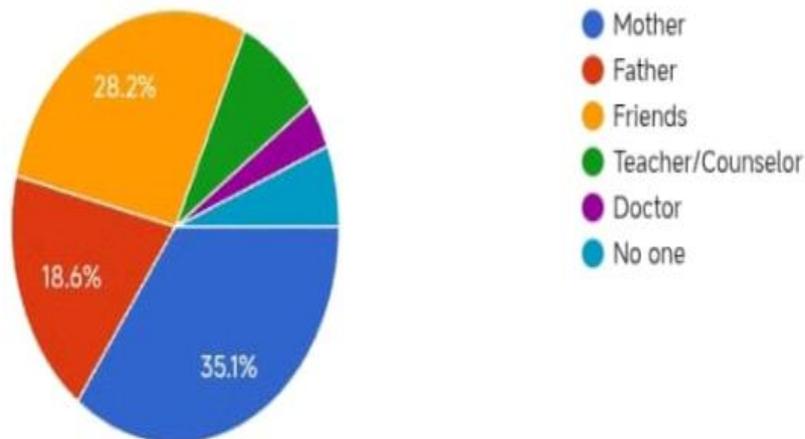
**Figure 12.** Impact of irregular menstruation on self-esteem.

Half of the participants (50.2%) reported reduced confidence linked to menstrual irregularities, underscoring the psychological burden of the condition.



**Figure 13.** Effect of irregular menstruation on academic/work performance.

Although 55.3% reported no effect, 28.7% experienced significant academic or work disruptions, and 16% reported occasional impacts, highlighting productivity concerns.

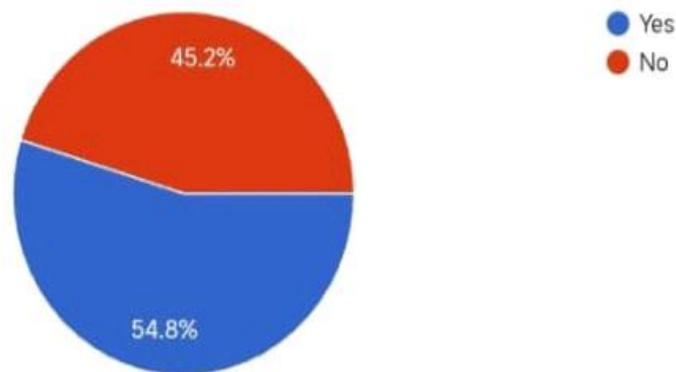


**Figure 14.** Comfort levels in discussing menstrual issues.

The participants most often confided with mothers (35.1%) and friends (28.2%), with fewer consulting doctors (18.6%). Only a small fraction discussed issues with teachers, fathers, or no one, indicating cultural barriers.

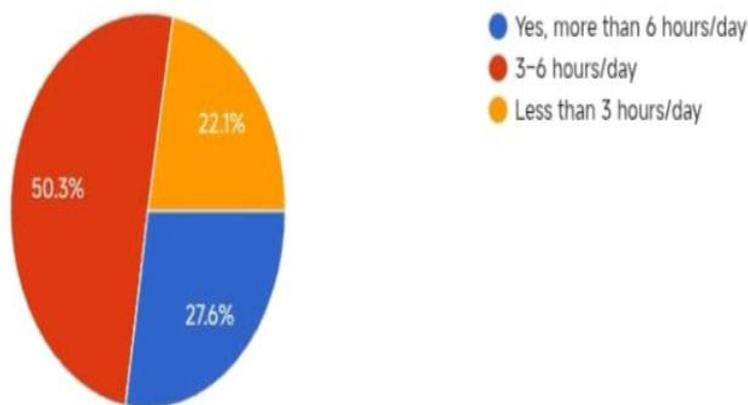
Cultural restrictions were still widespread, with 54.8% of the respondents experiencing limitations during menstruation, such as being excluded from religious activities, kitchens, or sports (Figure 15). Nearly 29% openly acknowledged that menstruation was perceived as taboo in their community. These results are consistent with reports by UNICEF India (2022) and WaterAid India (2021), highlighting how traditional beliefs continue to restrict women’s participation in daily and cultural life. Technology use and modern lifestyle factors also played a role. More than half of the participants (50.3%) reported

spending 3–6 hours on screens daily, whereas 27.6% exceeded six hours (Figure 16). Extended screen exposure, coupled with stress and disrupted sleep patterns, may further contribute to cycle irregularities. This study highlights the double burden of physiological symptoms and cultural stigma, compounded by gaps in medical engagement. Together, the findings underscore the need for integrated intervention awareness campaigns, lifestyle counselling, and culturally sensitive health services to reduce stigma, empower young women, and promote reproductive well-being.



**Figure 15.** Social restrictions during menstruation.

More than half (54.8%) experienced restrictions such as exclusion from religious, household, or sports activities, reflecting persistent sociocultural taboos.



**Figure 16.** Daily digital screen usage.

Over half (50.3%) reported using digital devices for more than six hours per day, 27.6% used them for 3–6 hours, and 22.1% used them for less than 3 hours, suggesting lifestyle implications.

**Table 1.** Demographic profile, menstrual characteristics, lifestyle factors, psychosocial impact, and healthcare-seeking behaviour of the participants (N = 500).

Question	Options	Percentage
Demographic information age	Bellow 15	8.5%
	15 -18	25.6%
	19-22	46%
	23-25	15.1%
	Above 25	4.8%
Educational levels	School	8.8%
	College	42%
	Graduate	34.2%
	Postgraduate	9.9%
	Other	5.1%
Menstrual history what age do you get you first period?	Bellow 10	11.9%

	10-20	33.4%
	13-15	40.5%
	16 or above	14.2%
Are your periods regular?	Yes	44.7%
	No	37.3%
	Sometimes	18%
How long your average menstrual cycle?	Less than 21 days	18.6%
	21-35 days	53.4%
	More than 35 days	21.7%
	Not sure	6.3%
How many days does your period usually last?	1-3 days	31.3%
	4-6 days	52.9%
	7 days or more	15.8%
Do you experience missed periods (amenorrhea) often?	Yes	24.3%
	No	56.1%
	Occasionally	19.7%
Do you experience any following symptoms?	Severe cramps	12.3%
	Heavy bleeding	24.8%
	Spotting between periods	20.8%
	Acne or excessive facial hair	15.6%
Do you have a diagnosed condition such as PCOS or thyroid disorder?	Yes	20.1%
	No	61.7%
	Not sure	18.2%
How would you describe your diet?	Balanced	29.9%
	Irregular meals	34.4%
	Regular meals often	27.3%
	High junk food consumption	9.4%
How often do you exercise per week?	Daily	14.1%
	2 to 3 times	34.5%
	Rarely	33.1%
	Never	18.3%
Do you experience high stress or anxiety levels?	Frequently	15.4%
	Sometimes	44.8%
	Rarely	29.8%
	Never	10%
Have you consulted a doctor for irregular periods?	Yes	40.9%
	No	59.1%
Are you aware of lifestyle Factors that affect menstrual health (e.g., sleep, Diet, exercise)?	Yes	57.9%
	No	42.1%
Have you taken any medications or supplements to regulate your period?	Yes	61.8%
	No	38.2%
Do you think menstruation – related education is adequate in schools/colleges?	Yes	41.5%
	No	35.8%
	Not sure	22.7%
Would you like to receive more information or support regarding menstrual health?	Yes	58.8%
	No	41.3%
Do you feel anxious or stressed before or during your period?	Yes	32.3%
	No	43.8%
	Sometimes	23.9%
Has irregular menstruation ever affected your self-esteem or confidence?	Yes	50.2%
	No	49.8%
Have irregular periods affected your academic or work performance?	Yes	28.7%
	No	55.3%
	Occasionally	16%
Do you feel comfortable discussing menstrual issues	Mother	35%
	Father	18.6%
	Friends	28.2%

	Teacher/counsellor	8.4%
	Doctor	3.7%
	No one	6.1%
Do you feel there is stigma or taboo around menstruation in your community?	Yes	28.6%
	No	50.8%
	Not sure	20.6%
Have you ever been restricted from activities during your period (e.g., religious practices, kitchen, sports)?	Yes	54.8%
	No	45.2%
cultural beliefs influenced your views about menstruation?	Yes	28.5%
	No	44.7%
	May be	26.8%
Do you know how to track your menstrual cycle? (e.g., calendar, app)?	Yes	50.7%
	No	49.3%
Do you think irregular menstruation can be a sign of a more serious health condition?	Yes	41.8%
	No	39.5%
	Not sure	18.7%
Have you ever undergone tests such as ultrasound or hormone tests due to irregular periods?	Yes	45%
	No	55%
Do you feel doctors listen and respond well to menstrual health concerns?	Yes	34.1%
	No	41.3%
	Haven't visited a doctor for this	24.6%
Have you ever tried any of the following for menstrual regulation?	Birth controls pills	19.7%
	Home remedies/herbs	24.7%
	Yoga/meditation	24.1%
	Dietary changes	9.9%
	None	21.6%
Do you think sexual activity influences menstrual health?	Yes	49.3%
	No	50.7%
Have irregular periods affected your fertility or pregnancy planning?	Yes	23.1%
	No	48.5%
	Not applicable	28.4%
Do you use any form of birth control?	Pills	15.2%
	Condoms	20.5%
	IUD	19%
	None	33.8%
	Prefer not to say	11.5%
Have you noticed changes in your menstrual cycle due to:	Travel or relocation	19.7%
	Climate season change	26.4%
	Change in academic/work pressure	23.5%
	COVID-19 infection or vaccination	9.5%
	None of the above	20.9%
Do you spend long hours on digital screens (e.g., phone, computer)?	Yes ,more than 6 hours/day	27.6%
	3-6 hours/day	50.3%
	Less than 3 hours/day	22.1%
What menstrual products do you use?	Sanitary pads	36.4%
	Tampons	20.3%
	Menstrual cups	24.9%
	Cloth	11.6%
	other	6.8%
Do you have easy access to menstrual hygiene products every month?	Yes	40%
	No	38.5%
	Sometimes	21.6%

Where did you first learn about menstruation?	School	20.3%
	Mother/guardian	46.9%
	Friends	25.2%
	Internet/social media	7.6%
Would you be interested in workshops or webinars about menstrual and reproductive health?	Yes	32.1%
	No	46.5%
	Maybe	21.4%
How do you manage menstrual discomfort or irregularity? (Select all that apply)	Painkillers	14%
	Heat packs	18%
	Herbal teas/remedies	18.6%
	Meditation/yoga	15.4%
	Rest/sleep	21.8%
	Do nothing	12.3%
How confident are you in managing your menstrual health?	Very confident	38.7%
	Somewhat confident	42.7%
	Not confident	18.6%
If recommended, would you take hormonal pills to regulate menstruation?	Yes	20%
	No	56%
	Not sure	24%
Do you believe natural remedies are safer than medical treatments for menstrual issues?	Yes	43.4%
	No	38.6%
	Not sure	18%
Have you ever felt embarrassed or judged when seeking medical help for menstrual issues?	Yes	59.4%
	No	40.6%

## CONCLUSION

This study underscores the significant prevalence and multifaceted burden of irregular menstruation among young women in Vizianagaram, revealing a complex interplay of physiological, psychological, and sociocultural factors. More than one-third of the participants experienced irregular menstrual cycles, yet many had not sought medical consultation, highlighting both limited awareness and barriers to healthcare access. Symptoms such as heavy bleeding, amenorrhea, cramps, acne, and associated emotional challenges, including stress, anxiety, and diminished self-esteem, adversely affect academic performance and overall well-being. These findings are consistent with national evidence linking lifestyle stressors, poor dietary patterns, and hormonal disorders such as PCOS and thyroid dysfunction with menstrual health concerns among Indian adolescents and young adults. Equally important, the persistence of sociocultural stigma has emerged as a major determinant of health behaviour. More than half of the students reported experiencing restrictions during menstruation, and many expressed discomforts in discussing menstrual issues with family members, peers, or medical professionals. Such silence reinforces taboos and prevents timely interventions. While the increasing use of mobile health tools, yoga, and herbal remedies reflects an openness to self-management strategies, the reluctance to adopt medical treatments suggests a need for trust-building and culturally sensitive healthcare approaches. The findings point to an urgent need for multipronged strategies that combine education, awareness, and accessible medical support. Integrating menstrual health education into academic wellness

programs, establishing youth-friendly and stigma-free healthcare services, and leveraging digital platforms for awareness and self-tracking could substantially improve outcomes. Ultimately, addressing irregular menstruation demands a holistic approach that not only reduces physical and psychological distress but also empowers young women to take control of their reproductive health, thereby contributing to their academic success, self-confidence, and long-term well-being.

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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

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