

EVALUATION OF MENSTRUAL IRREGULARITIES AMONG SCHOOL GOING GIRLS IN THE CITY OF JABALPUR

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Abstract

This cross-sectional observational study titled "Evaluation of Menstrual Irregularities Among School-Going Girls in the City of Jabalpur" was aimed to assess menstrual patterns, associated factors and provide unsealing regarding menstruation among school-going adolescent girls aged 10-19 years. A sample of 385 participants was selected and data was collected through personal interviews and clinical examinations using a structured questionnaire. The study revealed that the median age of menarche was 12.4 ± 1.24 years, with 62.1% of girls having regular menstrual cycles. The majority of girls were underweighted and physical activity was found to have a positive impact on menstrual patterns. Unhealthy diets and high BMI were associated with dysmenorrhea (63.1%,76.9%) and premenstrual syndrome (PMS) (37.9%,59.6%). While awareness of menstruation was high, there is a need for accurate education to dispel stigma and misinformation. Most girls practiced good menstrual hygiene, although 10.2% (n=40) still used unhygienic methods. Some girls had associated genetic disorders. The study highlights the importance of comprehensive education, counseling and support to improve menstrual health and hygiene among adolescent girls, addressing factors such as physical activity, diet and dispelling taboos surrounding menstruation. The findings emphasize the need for increased awareness, collaboration among stakeholders and strengthening peripheral facilities to support the well-being of adolescent girls and their academic performance.

INTRODUCTION

Adolescence is a phase of physical and psychological development that spans from puberty to adulthood, typically occurring between the ages of 10 and 20 years.^[1] During this period, both biological and cognitive changes take place in adolescent girls. These changes include growth spurts, increased sexual maturity and hormonal fluctuations.^[2] In India, there are approximately 286 million adolescents, with 142 million being girls.^[3] The majority of these girls, around 87.8%, attend school.^[4] However, menstrual irregularity affects a significant number of school-going girls with prevalence ranging from 25% to 70%.^[5] Menarche, the first occurrence of menstruation, is a significant milestone in a girl's life, marking the transition from childhood to adulthood. The age at which menarche occurs is influenced by various

biological and environmental factors. Early or late menarche can have both health risks and benefits.^[6]

The American College of Obstetricians and Gynaecologists (ACOG) defines menarche as the first menstrual bleeding, typically starting between the ages of 11 and 14.^[7] Menstrual irregularity is a major cause of school absenteeism for girls in India, with an estimated 23 million girls missing school annually due to periods.^[8]

After menarche, common menstrual abnormalities that adolescent girls may encounter include dysmenorrhea, irregular menstrual flow and premenstrual symptoms.^[9] Premenstrual syndrome (PMS) is a disorder characterized by physical, psychological and behavioral symptoms during the luteal phase of the menstrual cycle.^[10]

Dysmenorrhea, in particular, can cause significant pain and discomfort, leading to limitations in daily activities and school absenteeism.^[11] The frequency of premenstrual dysphoric disorder, a severe form of

PMS accompanied by affective symptoms, is likely equal to or higher in adolescents compared to adults.^[12]

To address these issues, a study was conducted in Jabalpur city to investigate the patterns of menstrual cycles and the prevalence of menstrual problems among school-going adolescent girls. The survey aimed to understand and educate young girls in Jabalpur about menstruation based on the research findings.

Aims & Objectives

- To determine pattern of menstrual cycle among young girls
- To establish correlation between menstrual problem with nutritional status and lifestyle
- To provide optimal counseling regarding menstruation and associated factors.

MATERIALS AND METHODS

A cross-sectional observational study titled "Evaluation of Menstrual Irregularities Among School-Going Girls in the City of Jabalpur" was conducted in Jabalpur city. The study aimed to assess menstrual irregularities among school-going girls aged 10-19 years.

The study utilized a sample size of 385 participants, determined using the formula for simple random sampling for an infinite population. The confidence level was set at 95%, with a 5% alpha and 80% power. The assumed probability (p) was 0.698, and the precision (marginal error) was considered as 0.05. Data was collected through personal interviews and clinical examinations using a pretested self-administered, semi-structured questionnaire. The

researchers explained the purpose of the study to the students and school authorities, providing them with information about the questionnaire. It spanned from March 2021 to August 2022.

Inclusion Criteria

- Girls between 10-19 years
- Attained menarche
- Willing to participate in the study

EXCLUSION CRITERIA:

- Girls with primary amenorrhea
- Girls on drug interfering with hormonal metabolism
- Patient not willing to participate in study

Statistical Analysis

- The data was recorded in the predesigned proforma and then It was entered in the MS excel and eventually it was analyzed by using statistical software -SPSS version 21.
- Association and correlation of qualitative data was tested by Chi Square Test and Fischer Exact test; Student T Test was applied in quantitative data.
- A p value < 0.05 was considered significant.

RESULTS

The study conducted on school girls of four different schools in jabalpur district. Data was collected on various factors related to their age, distribution, socioeconomic status, BMI, anemia, diet patterns, sports activities, age of menarche, menstrual cycle, menstrual irregularities and premenstrual symptoms. A summary of the observations and results is as follows:

Table 1: Socio-demographic profile of school going girls

Socio-demographic parameters	Percentage (Numbers)
Age	
10-13 years	31.4% (n=121)
14-16 years	37.4% (n=144)
17-19 years	31.2% (n=120)
Urban and Rural Distribution	
Rural areas	46.2% (n=178)
Urban areas	53.8% (n=207)
Socioeconomic Status	
Upper	0% (n=0)
Upper Middle	1.6% (n=6)
Lower Middle	64.2% (n=247)
Upper Lower	34.3% (n=132)
Lower	0% (n=0)
BMI	
Underweight	56.1% (n=216)
Normal weight	30.4% (n=117)
Overweight	13.5% (n=52)
Anemia	
Yes	28.3% (n=109)
No	71.7% (n=276)
Diet Pattern	
Healthy diet	48.6% (n=187)
Unhealthy Diet	30.9% (n=119)
Sports Activity	
Yes	69.1% (n=266)
No	30.9% (n=119)

Age of Menarche: The majority (55.2%, n=213) experienced menarche between the ages of 13-15 years.

Table 2: menstrual pattern among adolescent girls

Menstrual Cycle	Percentage (Numbers)
Normal menstrual	62.1% (n=239)
Abnormal cycle	37.9% (n=146)
Menstrual Irregularities	
Dysmenorrhea	61.3%, (n=236)
PMS	35.8%, (n=138)
Menorrhagia	23.9%,(n=92)
Hypomenorrhea	15.6%, (n=60)
Polymenorrhea	14.0%, (n=54)
Oligomenorrhea	11.9%, (n=46).

Association of BMI with Premenstrual syndrome and Dysmenorrhea: students with a BMI of 25-29.9kg/m² (overweight) have significantly higher percentage of both PMS 59.6%(n=31) and dysmenorrhea 76.9% (n=40).

Table 3: Association of PMS and dysmenorrhea with physical activity

Physical activity	Dysmenorrhea	PMS
Yes	50%(n=133)	23.3% (n=62)
No	86.6%(n=103)	63.9%(n=76)

Association of PMS and dysmenorrhea with dietary habits: dysmenorrhea and Premenstrual syndrome (PMS) it was observed that girls consuming Unhealthy diet and junk food experienced more dysmenorrhea 63.1%(n=125). However, the correlation of PMS with unhealthy diet is not found.

Table 4: Association of PMS and dysmenorrhea with dietary habits

Dietary habits	Dysmenorrhea	PMS
healthy diet	59.4%(n= 111)	33.7%(n=63)
Unhealthy diet	63.1%(n=125)	37.9%(n=75)

These observations highlight the age distribution, urban-rural differences, socioeconomic status, BMI status, anemia prevalence, dietary patterns, sports activities, age of menarche, menstrual characteristics, menstrual irregularities, association of various factors like BMI, physical activities and dietary pattern with premenstrual symptoms and dysmenorrhea among the studied schoolgirls.

DISCUSSION

The study conducted on school-going adolescent girls between the ages of 10 and 19 years aimed to evaluate various aspects related to menstruation. The median age of menarche was found to be 12.4 ±1.24 years, consistent with other studies. Most girls (62.1%) had regular menstrual cycles, while 37.9% experienced irregular cycles. The majority of the girls were underweight (57.7%), which could be attributed to their urban slum background and malnourishment. Physical activity was found to have a positive impact on menstrual patterns, with girls who engaged in physical activity having normal menstrual cycles. On evaluating the association of physical activity with dysmenorrhea and PMS we found that girls who do not participate in any kind of physical activity more likely to suffer from dysmenorrhea and PMS. It may be due to the fact, that physical activity improves the body hormonal balance, reduces stress and stimulate endorphin production, which can all help to reduce symptoms associated with dysmenorrhea and PMS. On comparison with the related Studies Abadi Babil et al,^[13] (2018) Prazeres LMA et al,^[14] (2018) shows

good physical activity reduces the incidence of dysmenorrhea

Unhealthy dietary patterns were prevalent, with 51.4% of girls consuming junk food. There was a significant association between menstrual irregularities and unhealthy diets, as well as dysmenorrhea. Similar studies by Negi et al,^[15,16] (2018) Shinde et al,^[17] (2017) found that dysmenorrhea is more common in girls who are consuming junk food.

The study also found associations of BMI with dysmenorrhea and PMS. We found that dysmenorrhea 76.9%(n=40) and PMS 59.6%(n=21) both are high in overweight girls. Obesity can predispose to abnormal metabolic profile and hormonal

Disbalance. Preetha et al,^[18] (2020) also found strong association between Dysmenorrhea and overweight girls, whereas Soheir M. El-Kosery, et al,^[19] (2020) found that dysmenorrhea were high in both overweight and underweight Girls.

Overall, the study aimed to provide optimal counseling regarding menstruation, including its importance, menstrual hygiene, safe practices and dispelling taboos surrounding menstruation.

Limitation of the Study

1. It is a subjective based study
2. Study participants are reluctant to disclose information related to their menstrual cycle due to social stigma and religious belief.
3. The study is limited to a specific age group of young girls, and the findings may not be applicable to other age groups.

CONCLUSION

In conclusion, our research emphasizes the critical need for increased awareness and education regarding menstrual health and hygiene among adolescent girls and their families. Dysmenorrhea is a common issue experienced by many girls during menstruation, often leading to school absenteeism. This negatively affects their academic performance and overall well-being. Recognizing the influential role of teachers, it is crucial to train them in educating girls about menstrual hygiene and patterns.

To address these challenges, it is essential to strengthen peripheral facilities, including healthcare personnel, school infrastructure, NGOs and local social groups. Collaborative efforts are necessary to provide education, counseling and raise awareness about menstrual hygiene and patterns while providing support to adolescent girls. Health care workers should also play a role in offering counseling and psychosocial support to help girls cope with anxiety and stress related to their menstrual condition. Our study further confirms the direct correlation between physical activity, a healthy balanced diet and a normal menstrual pattern. Sedentary lifestyle, intake of junk food, overuse of mobiles and other digital platform should be discouraged in the

population especially the young girls. Insufficient knowledge about menstrual irregularities puts girls at risk of puberty menorrhagia, reproductive tract infections, anemia and other gynecological disorders. India is rapidly moving towards being a Developed nation and young girls with good physical, mental and psychological wellbeing will become a good healthy citizen and contribute to a healthy workforce.

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