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# Menstrual pattern, practices, problems and its impact on activities during menstruation among adolescent girls at Chennai, India

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## Abstract

One of the indicators of the women's reproductive health is the menstrual cycle and menstruation has a different pattern. Hence, a study was undertaken to assess the correlation between the menstrual pattern, practices, problems, and its impact on activities during menstruation among adolescent girls. A descriptive correlational design was used. Samples of 123 adolescent girls were selected by using the non-probability convenience sampling technique. A structured multiple-choice questionnaire was used to obtain the demographic data, menstrual pattern, menstrual practice, and a checklist was used to assess the menstrual problems and their impact on activities during menstruation by the self-report method. The results revealed that the majority of the adolescent girls had a partially abnormal menstrual pattern and all used sanitary napkins as absorbent. The majority had reported some problems during menstruation with dysmenorrhea being the predominant one and had reported some impact on the activities during menstruation with special reference to absenteeism from school. There was a positive correlation with the activities during menstruation, which was highly significant. There was a statistically significant association between age at menarche and menstrual pattern at  $p < .05$  level of significance and family income and menstrual problems at  $p < .001$  level of significance. A school awareness program on menarche and menstrual problems is needed for better understanding and management.

**Keywords:** Dysmenorrhea, hygiene, menstruation, menstrual pattern, puberty

## Introduction

Adolescence is a transition period in human beings. This is the time when rapid physical growth occurs with psychological and social changes. The onset of menstruation is a striking event in female puberty. For most girls, it occurs between the age of 10 years and 16 years; however, it has a remarkable range of variation (Diaz et al., 2006). Various studies suggest that menarche tends to appear earlier in life due to various conditions like sanitary, nutritional, and economic status (Kaplowitz, 2006).

Menstruation involves periodic and cyclic shedding of the endometrium accompanied by loss of blood and considered as a normal physiological process among females. Assessment of the monthly experience of the female helps in identifying the normal development and exclusion of pathological conditions. Menstruation though a normal physiological phenomenon is characterized by variability in the regularity, volume, and pattern. Menstruation is considered as an indicator of a woman's reproductive health and the capability of procreation. Some inconsistencies in the menstrual pattern and problems are common during this period. The inconsistencies in the menstrual pattern can be irregular cycles, increased or decreased amount, or periods of blood flow. The adolescent girl faces some common problems like clots during menstruation, dysmenorrhoea, acne, headache, irritability, anxiety, tiredness, abdominal distension, poor concentration, feeling of tension, constipation, and diarrhoea during menses (Mathew et al., 2014).

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Women have their way to manage during menstruation. Maintaining hygiene during menstruation is an important activity for the well-being of women. It may be challenging for adolescent girls but awareness will help to cope with the situation. Practices related to menstrual hygiene are of major concern since it has a health impact. Girls need to be aware of menarche and be able to manage their menstruation in an enabling environment, as the problems of menstrual hygiene are multifactorial. The majority of adolescent girls are not aware of and prepared for menarche since they are not informed or ill-informed about menstruation. Management of menstruation during adolescence can present substantial challenges to girls (Mudey et al., 2010). This study aimed to deepen our understanding of the menstrual pattern, menstrual hygiene practices, menstrual problems, and its impact on activities during menstruation and find the relationship between menstruation and the activities on general activities.

#### **Objectives of the study are to:**

- assess the menstrual pattern, practices, problems, and its impact on activities during menstruation among adolescent girls
- correlate menstrual pattern, problems, and their impact on activities during menstruation among adolescent girls
- associate the menstrual pattern, problems, and its impact on activities during menstruation with the demographic variables of adolescent girls

#### **Materials and methods**

A descriptive correlational design was used. The major variables of the study were menstrual patterns, practices, problems, and activities during menstruation. The setting for the study was a Higher Secondary School located in Chennai. The population comprised of all the adolescent girls in the age group of 13 to 16 years studying at the setting. The non-probability convenient sampling technique was used to select 123 adolescent girls who were willing and had parental consent to participate in the study. The basic assumptions of the study were normal menstrual pattern – the lesser menstrual problems; more menstrual problems – lesser the activities during menstruation; age at menarche influences the menstrual pattern; and the economic

status influences the menstrual problems. Kaplowitz, 2006 has reported the influence of economic status on menstruation.

Structured multiple-choice questionnaires were used to obtain the demographic data, menstrual pattern, practices, and checklist was used to assess the menstrual problems and impact on activities by self-report. The study was approved by the Institutional Ethical Committee of the College. Prior permission was obtained from the Head of the institution for data collection. The purpose of the study was explained to the participants and their parents. Assent and informed written consent was obtained from the participants and the parents, respectively. Anonymity was maintained.

#### **Results**

The demographic variables of the adolescent girls show that the majority (36.6%) were 13 years, 30.9% were 14 years, 4.9% were 15 years and 27.6% were 16 years. The majority (45.5%) of the fathers and 56.2% of the mothers of the adolescent girls had Secondary school education, 23.6% of the fathers and 15.4% of the mothers of the adolescent girls were postgraduate whereas 1.6% of the fathers and mothers of the adolescent girls had no formal education. The majority (43.1%) of the fathers of the adolescent girls were self-employed/business, 42.3% were on private jobs, 13.8% were on government jobs and 0.8% were unemployed. The majority (74.8%) of the mothers of adolescent girls were homemakers, 14.6% were on private jobs, 5.7% were on government jobs, and 4.9% were self-employed/business.

The majority (74.8%) of the adolescent girls had their family income of above Rs 20,000 per month and 22% of them had their family income of Rs 10,000 to 20,000 per month. The majority (75.6%) of them were Hindus, 21.1% of them were Christians and 3.3% were Muslims by religion. About 46.3% of them had received information about menstruation before puberty whereas 53.7% of them did not receive information about menstruation before puberty. For the majority (50.8%) of them, the friends were the major source and for 38.6% of them, parents were the next most reported source. The majority (36.6%) of

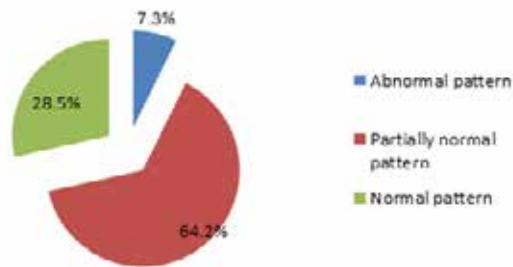
the adolescent girls had attained menarche at the age of 12 years, 33.3% at the age of 13 years, 20.4% at 11 years, 7.3% at 14 years, and 2.4% at 15 years.

Assessment of the menstrual pattern, practice, problems, and its impact on activities during menstruation of the adolescent girls

**Table 1:** Frequency and Percentage Distribution of the Adolescent Girls Based on The Menstrual Pattern

N=123		
Menstrual pattern	Frequency	Percentage
<b>Regularity of menses</b>		
a. Regular	90	73.2
b. Irregular	33	26.8
<b>Frequency</b>		
a. < 20 days	00	00
b. 20-25 days	25	20.3
c. 26-30 days	48	39.0
d. 31-35 days	50	40.7
<b>Duration</b>		
a. Up to two days	05	04.1
b. Up to three days	18	14.6
c. Up to four days	40	32.5
d. Up to five days	60	48.8
<b>Day of excess blood flow</b>		
	54	43.9
a. Second day	17	13.8
b. Third day	03	2.4
c. Second and third day	13	10.6
d. Second, third and fourth day		

Table 1 shows that the majority (73.2%) of the adolescent girls had regular menses, 40.7% of the adolescent girls had the frequency of 31-35 days, 48.8% of the adolescent girls had the duration of menses up to five days, and 43.9% of the adolescent girls had excess flow during the second day of the cycle.



**Figure 1:** Pie diagram showing the percentage distribution of the adolescent girls based on the overall menstrual pattern score

The total score was then categorized into three as <30% as a regular cycle; 30-70 as partially abnormal (meaning either frequency, duration, or amount of bleeding has minimal variations) this can be even stated as partially irregular; >70 as an irregular cycle.

The overall menstrual pattern score shows that the majority (64.2%) of the adolescent girls had a partially normal menstrual pattern, 28.5% of the adolescent girls only had a normal menstrual pattern and 7.3% of the adolescent girls had an abnormal menstrual pattern.

**Table 2:** Frequency and Percentage Distribution of the Adolescent Girls Based on Self Reported Practice during Menstruation

N=123		
Menstrual practice	Frequency	Percentage
<b>What do you use during periods</b>		
a. Cloth	Nil	Nil
b. Sanitary pads	123	100
<b>Frequency of changing napkin during excess bleeding</b>		
a. 1-2 times	30	24.4
b. 3-4 times	43	35.0
c. 5-6 times	41	33.3
d. More than six time	09	07.3
<b>Frequency of changing napkin during less bleeding</b>		
α. 1-2 times	55	44.7
β. 3-4 times	68	55.3
γ. 5-6 times	00	00.0
δ. More than six times	00	00.0
<b>Frequency of changing undergarments</b>		
a. Once a day	63	51.2
b. Twice a day		
<b>Using separate undergarments for menses</b>		
☺☹ Yes	64	52
☺☹ No	59	48
<b>Type of undergarment used</b>		
a. Cotton	103	83.7
b. Synthetic	020	16.3
<b>Washing hands after changing pads</b>		
	114	92.7
a. Yes	009	07.3
b. No		
<b>Cleaning the genitalia during menses</b>		
	68	55.3
α. Plain water	51	41.5
β. Soap and water	04	03.3
γ. Antiseptics		

Menstrual practice	Frequency	Percentage
Method of disposing of the sanitary napkin		
a. Wrap in paper and discard in the dustbin	114	92.7
b. Discard used sanitary pad directly in the dustbin	007	05.7
c. Flush sanitary pad in the toilet	002	01.6

Table 2 shows that all the adolescent girls were using sanitary napkins during menses, 33% of them changed the napkin 3-4 times a day during excess bleeding, 55.3% changed the napkin 3-4 times a day during less bleeding, 51.2% changed the undergarments twice a day during menses, 52% reported that they use separate undergarments during menses, 83.7% reported that they use cotton undergarments, 92.7% reported that they wash their hands after changing the napkin, 55.3% used plain water to clean the genitalia, and 92.7% wrapped the napkin in paper and discarded it in the dustbin.

Table 2 shows that all the adolescent girls were using sanitary napkins during menses, 33% of them changed the napkin 3-4 times a day during excess bleeding, 55.3% changed the napkin 3-4 times a day during less bleeding, 51.2% changed the undergarments twice a day during menses, 52% reported that they use separate undergarments during menses, 83.7% reported that they use cotton undergarments, 92.7% reported that they wash their hands after changing the napkin, 55.3% used plain water to clean the genitalia, and 92.7% wrapped the napkin in paper and discarded it in the dustbin.

The bar diagram shows that 43.9% of the adolescent girls had reported having clots during menstruation, 74.8% of them had reported having dysmenorrhoea, 58.5% had reported having acne, 55.3% of them had reported having irritability, and 74.8% of them had reported having tiredness.

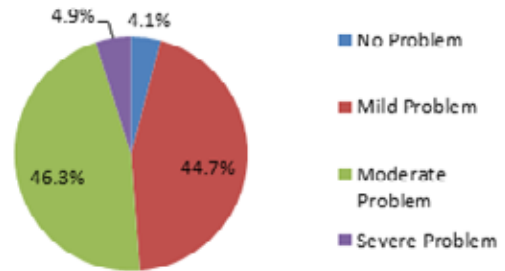


Figure 3: Percentage distribution of the adolescent girls based on the overall menstrual problem

N=123

A checklist was used to collect the information about menstrual problems. The total scores obtained were then classified as 0 – No problem; 1-25% - Mild problem; 26-50% - Moderate problem; 51-75% - Severe problem, and >75% - Very severe problem

The Pie chart shows that 4.1% had no problems, 44.7% had mild problems, 46.3% had moderate problems, and 4.9% had severe problems during menses.

Bar diagram shows that during menses 17.1% were absent from school, 8.9% missed some hours of classes in a day, 43.1% skipped sports activities, 23.6% avoided social activities, 43.9% avoided travel, and 43.1% reported disturbed sleep.

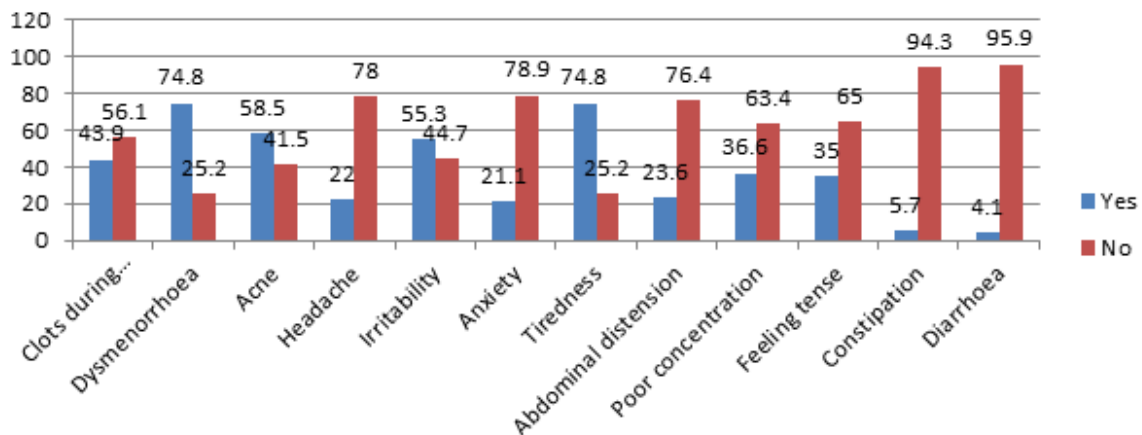


Figure 2: Percentage distribution of the adolescent girls based on the menstrual problems

N=123



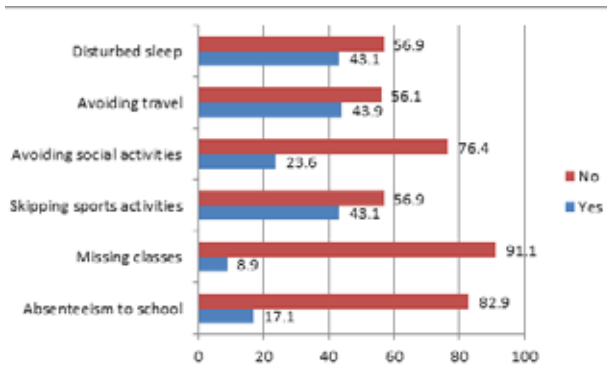


Figure 4: Percentage distribution of the adolescent girls based on the impact on activities during menstruation.

N=123

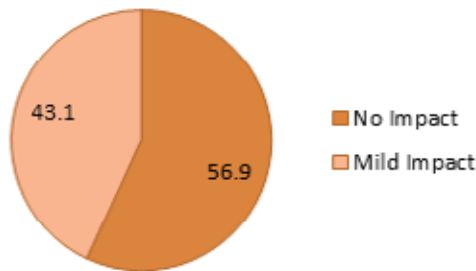


Figure 5: Percentage distribution of the adolescent girls based on the overall impact on activities during menstruation.

N=123

The total scores obtained were then classified as 0 – No impact (no changes in activities during menstruation); 1-25% - Mild problem; 26-50% - Moderate problem; 51-75% - Severe problem, and >75% - Very severe problem.

The Pie chart shows that 56.9% reported that menstruation had no impact on the daily activities whereas 43.1% reported a mild impact on daily activities.

### Assessment of relationship among variables

Relationship between menstrual pattern and problem

Variables	Correlation coefficient value (Pearson correlation)
Menstrual pattern	r= -0.122
Menstrual problem	p=.180 Not significant

There was a weak negative correlation between menstrual pattern and problem r= -0.122 which was not significant. We can infer that if the menstrual pattern is normal, there is a reduction in the menstrual problem.

### Relationship between menstrual problem and impact on activities during menstruation

Variables	Correlation coefficient value (Pearson Correlation)
Menstrual problem	r= -0.600
Impact on activities during menstruation	p=.001 significant

There was a positive correlation between menstrual problem and impact on activities during menstruation r= 0.600 which was significant at p<.001 level of significance. We can infer that as the menstrual problem increases there is an increased impact on the activities during menstruation.

### Assessment of the association between menstrual pattern, problems, and impact on activities with demographic variables

The association of menstrual pattern, problems, and impact on activities during menstruation with demographic variables revealed that there was a statistically significant association between age at menarche and menstrual pattern at p<.05 level of significance and family income and menstrual problems at p<.001 level of significance. There was no significant association between the menstrual pattern, problem, and activities during menstruation with other variables like age, educational status of mother and father, occupation of father and mother, religion, and demographic variables.

### Discussion

Menstruation is a normal physiological process during adolescence, which is a transition period. Variation in the menstrual pattern during this period precipitates menstrual problems. Menstrual problems in turn influence the activities of adolescents. Also, proper hygienic practices are important to reduce infections. Hence, this study was conducted to find the menstrual pattern, menstrual practices, menstrual problems, and their influence on the activities. The study findings revealed that the adolescents were in the age group of 13-16 years and all of them had attained menarche. The findings of the study also showed that 53.7% of the adolescent girls did not receive information about menstruation before puberty and the major source

of information regarding menstruation were friends and parents. This was close to the study findings of previous studies (Sharma et al., 2019; Walia et al., 2015) had reported that the major source of information related to menstruation were parents or guardians and friends.

The results also revealed that 32.5% and 48.8% of the adolescent girls had the duration of menses up to four and five days, respectively. A study on a menstrual pattern among adolescents observed that the majority 88.8% had a normal duration of menstruation of up to 4-5 days (Sharma et al., 2019).

The overall menstrual pattern score showed that the majority (64.2%) of the adolescent girls had a partially normal menstrual pattern, 28.5% of the adolescent girls only had a normal menstrual pattern and 7.3% of the adolescent girls had an abnormal menstrual pattern. A study on a menstrual pattern among adolescents observed that as many as 64.2% of girls had irregular menstrual cycles (Sharma et al., 2019).

The study findings revealed that all the adolescent girls were using sanitary napkins during menses. The findings are supported by the previous study on patterns and problems of menstruation among adolescent schoolgirls and found that the majority of girls used sanitary pads as absorbent during the cycle (Singh et al., 2019).

The findings of the study showed that 43.9% of adolescent girls had clots during menstruation. The study also revealed that 74.8% had dysmenorrhoea and 22% had a headache, which was also found in the following studies. Rafique and Al-Sheikh (2018) found that 91% of the students were suffering from some kind of menstrual problem. The menstrual problems reported were dysmenorrhea (89.7%) and stress (39%). Singh et al., 2019 in the study on patterns and problems of menstruation among adolescent schoolgirls observed that dysmenorrhoea was the commonest problem and was reported by 76.1% of the girls. Omidvar et al., 2018 observed that 66.8% of the adolescent girls had dysmenorrhea and the majority (79%) were experiencing dysmenorrhea during menstruation. Another study found that 81.3%

had abdominal pain during menstruation and 6.6% had headaches (Wasnik, Dhumalae, & Jawarkar, 2015).

The study findings also revealed that 58.5% had acne, 55.3% had irritability, 21.1% had anxiety, 74.8% had tiredness, 23.6% had abdominal distension, 35% had a feeling of tension, 5.7% had constipation, 4.1% had diarrhoea and 36.3% had poor concentration during menses, which is supported by the previous study findings that, with close to 50% of the girls complained of an inability to concentrate during menstruation, when in school (Sharma et al., 2019).

The study findings showed that during menses 17.1% of the adolescent girls absented from school, which is supported by the findings of the study by Sharma et al., 2019 reported that menstruation was not only related to absenteeism (among 10% of girls) but also affected the quality of school time. Also, 8.9% missed some hours of the classes, 43.1% skipped sports activities, 23.6% avoided social activities, 43.9% avoided travel and 43.1% reported disturbed sleep.

There was a weak negative correlation between menstrual pattern and menstrual problem  $r = -0.122$  which was not significant and revealed that when the menstrual pattern is normal, there is a reduction in the menstrual problems. Hence, the assumption stated that normal the menstrual pattern, lesser the menstrual problems and this was supported by the study findings

There was a positive correlation between menstrual problem and impact on activities during menstruation  $r = 0.600$  which was significant at  $p < .001$  level of significance. We can infer that as the menstrual problem increases there is an increased impact on the activities during menstruation. Hence, the assumption stated that more the menstrual problems, lesser are the activities during menstruation and this was supported by the findings of the present study.

The association revealed a statistically significant association between age at menarche and menstrual pattern at  $p < .05$  level of significance. Hence, the assumption stated that the age at menarche influences the menstrual pattern was supported by the study findings. There was a statistically significant association

between family income and menstrual problems at a  $p < .001$  level of significance. Hence, the assumption stated that the economic status influences the menstrual pattern and this was supported by the study findings of the present study.

There was no significant association between the menstrual pattern, problem, and activities during menstruation with other demographic variables like age, educational status of mother and father, occupation of father and mother, and religion.

## Conclusion

Menstruation being an important milestone in the life of adolescent girls and menstrual problems are common among adolescent girls. A comprehensive program by the school on education on menarche and menstrual problems will help girls to cope better and to seek proper medical assistance. There is a need to impart health education to girls to reduce menstrual problems and to attain other desired outcomes. Screening programs for problems related to menstruation should be started under the School Health Program at the school level. Proper hygienic practices and the selection of disposable sanitary menstrual absorbents should be discussed in health education programs. Some adolescent-friendly health programs focusing on menstrual problems should also be initiated. The present study concluded that for the majority of the adolescent girls, the menstrual pattern was partially abnormal and the majority had reported some problems during menstruation with dysmenorrhea being the predominant one and had reported some impact on the activities during menstruation with special reference to absenteeism from school. All adolescent girls were educated on the management of menstruation and hygienic practices. The limitation of this study is that the information was obtained retrospectively and at one time.

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