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Original Research Article

Menstrual problems of school going unmarried adolescent girls and their treatment seeking behavior in Chandigarh, India

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ABSTRACT

Background: Menstruation is a vital part of the reproductive health of a woman. There is evident neglect of problems related to menstruation especially in young girls. Lack of awareness and non-availability of adolescent friendly health facilities and other factors hinder the treatment seeking behavior of adolescent girls. The objectives were to assess the prevalence and patterns of menstrual problems among school-going adolescent girls and to investigate their treatment seeking behavior for menstrual problems.
Methods: Present study is based on part of a detailed survey under ICMR sponsored project. A stratified multistage sampling design was adopted for selection of participants from the 12 of Chandigarh. A total of 655 girls who had attained menarche were selected. Information on background and menstrual characteristics was collected through personal interviews conducted in privacy using semi -structured survey schedule.
Results: About 36% of 655 surveyed girls attained menarche prior to age of 13 years. Prior knowledge regarding menses was reported by 80% girls and mother was the main source of information. Overall prevalence of menstrual problem in the present study was found 64.6%. Abdominal pain was the most common menstrual problem reported by 62.6% of participants having menstrual problems. Excessive menstrual flow was reported by 10.4% girls. Pre-menstrual problems were reported by 57.4% participants. Treatment seeking behaviour of the girls was poor and only about 25% of girls having menstrual problems approached for treatment. Reliance on home remedies followed by shyness / hesitation came out to be the major reasons of not approaching for treatment in the present study. Use of painkiller in the present study was found to be 34.8%.
Conclusions: Study concludes that menstrual problems among girls are highly prevalent. Adolescent girls should be offered possible treatment options with adolescent friendly approach. Reproductive health education in the school curriculum should be introduced for improving awareness regarding menstrual care practices. Mentorship program in the school set-up may result in desired improvements providing adolescent friendly health services for sharing their menstrual and other problems.

Keywords: Adolescent friendly health services, Menstrual problems, PMS, PCOS

INTRODUCTION

Menstruation is an immensely vital part of the reproductive life of a woman. Although, it is a natural process, it is still regarded as an event that renders a woman 'dirty'. The phenomenon is deeply encompassed in a concatenation of false myths, beliefs and socio-cultural restrictions, often leading to neglect of the menstruation-related practices and disorders, especially in a developing country as India.[1] Lack of awareness and the associated taboos are responsible for the hesitation, shyness and fear in sharing problems, which is commonly faced by the young girls.[2] Menstrual problems like

emotional disturbances, dysmenorrheal, pre-menstrual syndrome and polycystic ovary syndrome (PCOS) amongst adolescent girls have been discussed in several studies.[3-9] Menstrual problems during adolescence may adversely affect quality of reproductive life. A study[10] provides detailed account of menstruation in relation with the reproductive lives of women.

Treatment seeking behavior of adolescent girls for their menstrual complaints may be adversely influenced by rigid adherence of traditional norms and practices, ignorance, myths and taboos, lack of adolescent friendly health care facilities etc. Utilization of available health facilities by adolescents depends on attitude, awareness and health seeking behavior of adolescents. The negative attitude and false perceptions regarding menstruation hampers the treatment seeking behavior of the girls, leading to under-detection of the menstrual disorders. Most of the menstrual disorders are untreated because of limited access to adolescent friendly health services and lack of provision of female doctors in the health services. The high prevalence of menstruation-related disorders and low proportion of girls seeking treatment for their menstrual problems put the onus on the healthcare system of the country to adequately address the health issues and provide necessary education as well as resources to effectively tackle the situation. Understanding the health problems related to menstruation and the health seeking behavior of the adolescent girls will help us in planning effective programs for this vulnerable group.

Present study aims to assess the prevalence and patterns of menstrual problems and complaints among school-going adolescent girls of Union Territory of Chandigarh (India) and to investigate pattern of their treatment seeking behaviour for menstrual problems.

METHODS

Results of present study are based on a cross sectional survey conducted among unmarried adolescents aged 14-19 years studying in selected schools of Chandigarh under Indian Council of Medical Research (ICMR), India sponsored project "natural mentoring and its impact on health conditions of adolescents" undertaken during September 2010 to August 2013. Survey covered 1819 adolescent unmarried students out of which 655 girls who attained menarche are the study subjects of present study.

Profile of study population

Chandigarh is the most economically advanced Union Territory (UT) of India and also capital of two states: Punjab and Haryana. It is characterized by high population growth due to increasing migratory population and rapidly changing life style. According to Census (2011), total population of Chandigarh is 1055450 including 580663 males and 474787 females. The population growth rate of Chandigarh is reported to be 17.19%. Other demographic characteristics like sex ratio (F:M) 818: 1000,child sex ratio 880:1000, literacy rate 86.05% with male literacy 89.9% and female literacy 64.8% are also reported. There are more than 250 schools and colleges in UT Chandigarh. There are 190 schools including 106 Government, 7 Government aided, 6 Kendriya /Narvodaya schools and 71 Private schools imparting education up to 12th level. There were total 11,314 boys and 10,280 girls enrolled in senior secondary level in Chandigarh as on 30th September 2012.

Study design

Cross sectional Survey was conducted in 12 (8 government and 4 private) schools in Chandigarh.

Sampling design

A stratified multistage random sampling was adopted. Stratification was done on the basis of type of schools imparting education up to 12th standard. There were two strata, consisting of government and private schools of Chandigarh. Within each stratum, list of schools was prepared along with their respective sanctioned strength of students studying in classes 9th standard and above. Sampling frame of sampling units at each stage of selection was prepared. At the first stage of selection, a sample of 12 schools including eight Government and four Private schools were selected at random as first stage units with proportional allocation. Within each selected first stage units, a second stage sample of students of different classes of an optimum size with proportional allocation was selected as study units.

Sample size

Power analysis was done to calculate optimum sample size for the study. Sample size was calculated by using the following formula with approximation for large population:

$$\mathbf{n}\ \text{opt} = \frac{Z^2_{1-\alpha/2}\,(1-P)}{\in^2 P}$$

where,

P = Anticipated population proportion
1 - α = Confidence Coefficient
$\in$ = Relative precision, and
Z (.) is the value of standard normal variate.

Sample size of 655 girls was optimum based on 60% anticipated prevalence of menstrual problems, 90% confidence coefficient and 5% relative precision.

Information collected

Adolescent school-going girls were interviewed to collect information including socio-demographic characteristics: age, gender, literacy status of students as well as of their

parents, elder/younger siblings, religion, type of family, occupation of parents and socio-economic status and menstruation related information like prior knowledge, reactions, regularity of menses, complaints and problems faced during menstruation with main discussants for these problems and their health-seeking behavior.

Information was collected by personal interviews conducted in privacy using pretested semi -structured interview schedules. Only those unmarried girls who had already attained menarche and were willing to participate were interviewed provided their parents also gave consents.

Terminology

Menarche: The onset of menstruation called the 'menarche' is a visible event in a sequence of changes, which occur during adolescence and being a definitive timed phenomenon is often used as a valid indicator of sexual development. The onset of menstruation called menarche usually starts two years after beginning of the breast development at puberty or about one year after pubic hair appears usually occurs at age 12 or 13.

Menstrual flow: Estimation of flow whether it is normal, scanty or heavy is a subjective perception. Following criterion are taken for practical purposes –

- Normal Flow – When 2-3 pads / day are used.
- Scanty Flow – When 1 or less than 1 pad / day is used.
- Heavy Flow – When more than 3 pads / day are used. Passage of large clots always means heavy flow.

Statistical methods

Statistical methods like Normal-test, Student's t-test, Chi-square test, by using SPSS-16 Statistical Software were used.

Ethical issues

Ethical Guidelines of ICMR (2006) on human participants were followed. Consent of respondents for participation in the study was taken and confidentiality of responses was ensured. In case of adolescents below 18 years of age, consent was taken from parents and teachers also.[11] Only respondents who were willing to participate in the study were included in the study.

In the data collection process, steps were taken to ensure privacy of participants, confidentiality of responses and freedom to respond truthfully. Prior approval from Institutional Ethics Committee (IEC) of Government Medical College and Hospital (GMCH), Chandigarh was taken.

RESULTS

Socio-demographic characteristics of girls

Study included 655 girls who had attained menarche. Table 1 presents a detailed account of the socio-demographic characteristics of all the 655 girls surveyed. Among those 655 girls, the mean age of respondents was 14.93 years. There were 67.9% girls were from government schools and remaining 32.1% from a private schools. Also, 531 (81.1%) girls were from co-educational institutions. Overall, 43.4% of the respondents were from class 9th followed by 33.0% from class 10th, 17.1% from class 11th and 6.6% from professional courses. Also, 605 (92.4%) girls were of English medium and 45 (6.9%) from were of Hindi medium schools. Only 148 (22.6%) were from joint families. There were 507 (77.4) girls of Hindu community followed by 119(18.2%) belonging to Sikh community and 16 (2.4%) from Muslim community. Fathers of 23.2% girls and mothers of 20.6% girls were graduates. Overall, fathers of 53.4% girls were in service whereas mothers of 73.7% girls were housewives. Among all 655 girls, 518 (79.1%) belonged to high socio-economic status. There were 70. 7% girls who had elder sister and 177 (27.0%) had younger sister.

Table 1: Socio-demographic characteristics of girls.

Characteristics	No.	%
Type of school		
Government	445	67.9
Private	210	32.1
Total	655	100.0
Type of institution		
Girls	124	18.9
Co-Educational	531	81.1
Age in years		
12	3	0.5
13	71	10.8
14	215	32.8
15	170	26.0
16	125	19.1
17	39	6.0
18	13	2.0
19	19	2.9
Mean ±SD	**14.93±1.37**	
Class/standard		
9th	284	43.4
10th	216	33.0
11th	112	17.1
Professional	43	6.6
Medium of education		
Hindi	45	6.9
English	605	92.4
Punjabi	5	0.8
Type of family		
Joint	148	22.6
Nuclear	498	76.0

Extended	9	1.4
Religion		
Hindu	507	77.4
Muslim	16	2.4
Sikh	119	18.2
Christian	9	1.4
Others	4	.6
Caste		
General	542	82.7
SC	84	12.8
ST	5	0.8
OBC	24	3.7
Educational level of father		
No response	18	2.7
Illiterate	12	1.8
Primary	27	4.1
Middle	61	9.3
High School	117	17.9
Intermediate	110	16.8
Graduate	151	23.1
Post Graduate	73	11.1
Professional	86	13.1
Education level of mother		
No response	9	1.4
Illiterate	65	9.9
Primary	33	5.0
Middle	80	12.2
High School	132	20.2
Intermediate	70	10.7
Graduate	135	20.6
Post Graduate	84	12.8
Professional	47	7.2
Occupation of father		
Housewife/unemployed		
Service	376	57.4
Business	163	24.9
Laborer	23	3.5
Skilled worked	31	4.7
Others	32	4.9
No response	30	4.6
Occupation of mother		
No response	6	0.9
Housewife	483	73.7
Service	129	19.7
Laborer	3	0.5
Skilled worked	5	0.8
Others	13	2.0
Staying with family		
Yes	634	96.8
No	15	2.3
No response	6	0.9
Other than family		
No response	0	0.0
Hostel	11	73.3
Relative	4	26.7
With parents		
No. of family members		
1-3	13	1.9
3-5	447	68.2
6-8	116	17.7
9 and above	79	12.1
Socio-economic status (SES)		
Low	42	6.4
Middle	95	14.5
High	518	79.1
Elder sister		
No	463	70.7
Yes	192	29.3
Younger sister		
No	478	73.0
Yes	177	27.0

Menstrual characteristics

Menstrual characteristics of respondents are provided in Table 2. Study reported maximum number of girls (36.2%) who had attained menarche at the age of 13 years followed by 24.9% girls who attained it at the age of 12. It was observed that 80.0% of total girls who had attained menarche had its prior knowledge and the main source of knowledge regarding menarche was mother reported by 50.8% respondents, followed by teacher (29.0%) and friends (26.9%). About 59% girls reported mother to be the main discussant regarding menstrual problems. However, it was seen that maximum satisfaction was attained by discussion of menstrual related problems with female relatives followed by elder sister (92.6%). Menstruation was considered to be a normal phenomenon by 346 (52.8%) girls while 205 (31.3%) considered it as an essential sign of adulthood and 190 (29%) were of opinion that it was essential for reproduction /fertility.

Among all respondents, 423 (64.6%) reported to have at least one problem related with menstruation. Among 423 girls reporting problems, 265 (62.6%) respondents suffered from abdominal pain during menstruation, followed by 185 (42.6%) of those who suffered from backache and headache and 160 (37.8%) suffered from leg pains/cramps. Change in mood during menstruation was reported by 111 (26.2%) girls reporting problems while general weakness during menstruation was reported by 97 (22.9%) of respondents. Menstrual problems continued for 2-3 days in case of 176 (41.7%) girls. Among 423 girls reporting menstrual problems, 243 (57.4%) reported to have suffered from problems before menstruation. Pre-menstrual problems included abdominal pain (96.7%), depression/mood swing (18.5%), breast tenderness (5.3%), temperature change (4.9%) and bloating of the body (6.2%). It was observed that 522 (79.7%) of girls had a regular menstrual cycle history. Menstrual irregularities were reported by 92(14.0%) girls. Excessive menstrual flow was reported by 68(10.4%) girls. The duration of the menses was mostly 4-5 days reported by 405 (61.8%) girls with normal flow reported by maximum (81.4%) girls.

Table 2: Menstrual characteristics of girls.

Characteristic	No.	%
Age at menarche (N=655)		
No response	32	4.9
8-11	17	2.6
12	163	24.9
13	237	36.2
14	129	19.7
15	29	4.4
16	4	0.6
Prior knowledge regarding menstruation (N=655)		
Yes	524	80.0
No	131	20.0
Total	655	100.0
Source of information(N=655)		
Mother	266	50.8
Elder sister	69	13.2
Friends	141	26.9
Female relatives	17	3.2
Teacher	152	29.0
Any other	26	5.0
Discussant(N=655)		
Mother	385	58.8
Elder sister	54	8.2
Female relatives	12	1.8
Friends	98	15.0
Others	6	0.9
Person specific satisfaction		
Mother (N=385)	311	80.8
Elder sister(N=54)	50	92.6
Female relatives(N=12)	12	100.0
Friends(N=98)	82	83.7
Attitude towards menstruation (N=655)		
No response	7	1.1
Normal phenomenon	346	52.8
Essential sign of adulthood	205	31.3
Sign of virginity	19	2.9
Essential for fertility in women	190	29.0
Sign of impurity	27	4.1
Any other	16	2.4
Type of menstrual problem (N=423)		
Abdominal pain	265	62.6
Backache	180	42.6
Headache	180	42.6
Nausea / vomiting	19	4.5
General weakness	97	22.9
Leg Pains / cramps	160	37.8
Change in mood	111	26.2
Any other	6	1.4
Days menses problems continue (N=423)		
No response	135	31.9
1	176	41.7
2-3	103	24.3
4-7	9	2.1
Mean ± SD	**1.65 ± 1.18**	
Problem faced before menstruation (N=423)		
Yes	243	57.4
No	180	42.6
Problem faced before menstruation (N=243)		
Abdominal pain	235	96.7
Depression or mood swing	45	18.5
Breast tenderness	13	5.3
Temperature change	12	4.9
Bloating of body	15	6.2
Any other		
Menstrual history(N=655)		
No response	41	6.3
Regular	522	79.7
Irregular	92	14.0
Duration of menstrual cycle in days(N=655)		
No response	50	7.6
1-3	64	9.8
4-5	405	61.8
6 or more	136	20.8
Menstrual flow(N=655)		
Scanty	18	2.7
Normal	533	81.4
Excessive	68	10.4
No response	36	5.5

Table 3: Treatment seeking behaviour of for menstrual problems.

Treatment seeking behaviour	No	%
Treatment taken (N= 423)		
No response	79	18.7
Yes	107	25.3
No	237	56.0
Source of treatment (N=107)		
Allopathic Treatment	82	76.6
Ayurveda	11	10.3
Herbal medicines	2	1.9
Yoga/Physical Exercise	1	0.9
Home-remedy	23	21.5
Any other	9	8.4
Reasons of not approaching (N=237)		
No response	110	46.4
Hesitation/shyness	32	13.5
Use home remedy	39	16.5
Nobody to accompany	7	3.0
Fear	7	3.0
Shyness	2	0.8
Non-availability of female doctors	3	0.3
Any others	18	7.6
Use of pain killers (N=423)		
Yes	147	34.8
No	207	48.9
No response	69	16.3
Source of advice if using painkillers (N=147)		
Doctors	61	41.5
Self-medication	20	13.6
Female family members	46	31.3
Friends	5	3.4
Total	132	89.8

Awareness of medication for pre-pone/ postpone of menses (N=423)		
Yes	33	7.8
No	362	85.6
No response	28	6.6

Treatment seeking behavior

Treatment seeking behavior of respondents is given in Table 3. Only 107 (25.3%) out 423 respondents with menstrual complaints, opted for treatment for menstruation related problems. Among girls who opted for treatment, 76.6% relied on allopathic treatment, followed by 21.5% on home remedies for their problems, 10.3% of the respondents took herbal medicines and only 0.9% relied on yoga/physical exercises for treating the problems. Among respondents who did not opt for any treatment, 16.5% reported the usage of home remedies as the primary reason for not approaching for treatment, followed by hesitation/shyness reported by 13.5% of the respondents. Among 423 girls having menstrual problems, 147 (34.8%) girls reported use of pain-killers for relief of pain during menstruation. Among 147 girls who used pain-killers, only 61 (41.5%) while 20 (13.6%) took the pain-killers on their own. Only 33 (7.8%) of 423 girls having menstrual problems were aware of medication for pre-poning /postponing of menses. However, reported practice of medication for preponing or postponing of menstrual cycle was not prevalent.

Table 4: Bivariate analysis of risk factors of menstrual problems.

Characteristics	No	Menstrual Problems		χ^2 (P-value)
		Yes N (%)	No N (%)	
Age				
10-14	459 (70.1%)	297 (64.7)	162 (35.3)	
15-19	196 (29.9%)	126 (64.3)	70 (35.7)	χ^2 = 0.01 (P=0.49)
Mean ± SD		14.89±1.32	14.99±1.45	
School Type				
Government	445 (67.9%)	292 (65.6)	153 (34.4)	
Private	210 (32.1)	131 (62.4)	79 (37.6)	χ^2 = 0.52 (P=0.23)
Religion				
Hindu	507 (77.4%)	335 (66.1)	172 (33.9)	
Muslim	16 (2.4%)	12 (75.0)	4 (25.0)	
Sikh	119 (18.2%)	66 (55.5)	53 (44.5)	
Christian	9 (1.4%)	6 (66.7)	3 (33.3)	
Others	4 (0.6%)	4 (100.0)	0 (0.0)	
Medium				
Hindi	45 (6.9%)	27 (60.0)	18 (40.0)	
English	605 (92.4%)	393 (65.0)	212 (35.0)	
Punjabi	5 (0.8%)	3 (60.0)	2 (40.0)	χ^2 = 0.49 (P=0.78)
Type of Family				
Joint/ Extended	157 (22.6%)	122 (77.7)	35 (22.3)	
Nuclear	498 (76.0%)	301 (60.4)	197 (39.6)	χ^2 =15.56 (P<0.001)
Educational Status of Mother				
Illiterate / Just Literate	107 (16.3%)	77 (72.0)	30 (28.0)	
Literate	548 (83.7%)	346 (63.1)	202 (36.9)	χ^2 = 3.1 (P=0.08)
Occupation of Mother				
Housewife	489 (74.7%)	319 (65.2)	170 (34.8)	
Working	166 (25.3%)	104 (62.7)	62 (37.3)	χ^2 = 0.36 (P=0.30
Socio-economic Status				
Low	42 (6.4%)	34 (80.9)	8 (19.1)	
Middle	95 (14.5%)	77 (81.1)	18 (18.9)	
High	518 (79.1%)	312 (60.2)	206 (39.8)	χ^2 = 20.47 (P<0.001)
Elder Sister				
Yes	192 (29.3%)	127 (66.1)	65 (33.9)	
No	463 (70.7%)	296 (63.9)	167 (36.1)	χ^2 =0.32 (P=0.29)
Significant Person in Life				
Yes	235 (35.9%)	158 (67.2)	77 (32.8)	
No	371 (56.6%)	233 (62.8)	138 (37.2)	

No response	49 (7.5%)	32 (65.3)	17 (34.7)	χ^2 = 1.23 (P=0.53)
Mentor				
Yes	74 (11.3%)	59 (79.7)	15 (20.3)	
No	581 (88.7%)	364 (62.6)	217 (37.4)	χ^2 = 8.37 (P=0.002)
Overall	**Total**	**655 (100.0%)**	**423 (64.6)**	**232 (35.4)**

Table 5: Logistic regression analysis of risk factors of menstrual problems.

Factor	B	S.E.	Sig.	Exp (B)	95.0% C.I. for EXP (B)	
					Lower	Upper
Government school Vs others	0.152	0.199	0.443	1.165	0.789	1.719
Hindi medium Vs others	0.461	0.351	0.189	1.586	0.797	3.158
Joint family Vs others	-0.843	0.225	0.000	0.431	0.277	.669
Low / middle SES Vs high SES	-1.047	0.252	0.000	0.351	0.214	.575
Hindu Vs others	-0.343	0.203	0.092	0.710	0.476	1.057
Elder sisters (Yes or No)	0.081	0.189	0.671	1.084	0.748	1.571
Illiterate mother Vs literate mothers	-0.300	0.309	0.330	0.741	0.405	1.356
Housewife Vs working mothers	0.016	0.206	0.940	1.016	0.679	1.521
Significant person (Yes or No)	0.091	0.183	0.616	1.096	0.766	1.567
Having mentor (Yes or No)	0.818	0.315	0.009	2.266	1.222	4.202
Constant	-0.951	0.416	0.022	0.387		

Factors associated with menstrual problems

Bivariate analysis of factors associated with menstrual problems is given in Table 4. Overall, mean ages of girls with and without menstrual problems was found to differ significantly (P=0.49). Prevalence rates of menstrual problems among girls aged 10-14 years (64.7%) and 15-19 years (64.3%) were not found to differ significantly. Girls studying in government schools were slightly more sufferers (65.6%) of problems as compared to those studying in private school (62.4%). There was no significant association (P=0.23) between type of school and menstrual problems. Maximum number of respondents were from the Hindu religion (77.4%), followed by Sikh religion (18.2%) and Muslim religion (2.4%). Menstrual problems were found to be the highest among the girls from Muslim religion (75.0%). However, the prevalence was least (55.5%) among the girls belonging to Sikh community. Menstrual problems were not found to be significantly associated with medium of education. There were 393 (65.0%) out of 605 girls studying in English medium school who reported menstrual problems and this was found to be maximum. Type of family was significantly associated (P<0.001) with menstrual problems. Prevalence rate of menstrual problems of girls with illiterate/just literate mothers was comparatively higher (72.0%) as compared to prevalence rate among girls whose mothers were literates (63.1%). However, literacy of mothers was not found to be a significant correlate of menstrual problems among girls. It was also not found to be significantly associated with the occupation of mothers (P=0.30). Having significant person in life, also, not influenced the prevalence of menstrual problems significantly but mentorship had a significant role (P=0.002) in determining menstrual problems. Socio-economic status was also a significant correlate of menstrual problems and problems were highest among middle class. Having an elder sister also didn't play a significant role (P=0.29) for problems among younger sisters. Based on bivariate analysis, age of girls, socio-economic status of family, type of family and having mentor in life were significant factors associated with menstrual problems among girls. These factors were further assessed base on multivariate logistic regression analysis.

Logistic regression analysis of risk factors of menstrual problems

Logistic regression analysis was used to analyze risk factors for menstruation-related problems (Table 4). It was found out that girls from joint families, of low/middle socio-economic status and those who had mentors were at significantly lower risk of menstrual problems. Other factors were not found to be significant risk factors for menstrual problems.

DISCUSSION

In the present study, 655 girls with a mean age of 14.93 years were included. Prevalence of menstrual problem in the present study was found 64.6%. The study reported high prevalence of menstrual as well as pre-menstrual problems amongst the school-going unmarried adolescent girls in UT, Chandigarh. However, due to lack of awareness as well as various other reasons like use of home remedies, hesitation/shyness/fear and limited availability of female doctors, most of the girls did not

approach for treatment. Abdominal pain was the most common problem/complaint. Other problems were less prevalent as pre-menstrual complaints. Study observed 80.0% girls had prior knowledge of menarche and mother came out to be the main source of knowledge regarding menarche reported by 50.8% respondents and main discussant for menstrual problems. Girls felt maximum satisfaction with sharing problems with female relatives and elder sisters not with mothers. Excessive menstrual flow was reported by 10.4% girls. About 36% respondents did not complain any problem. The health seeking behaviour of the girls in the study was poor. Reliance on home remedies followed by shyness / hesitation came out to be the major reasons of not approaching for treatment in the present study.

Prevalence rate of menstrual problems was obtained to be 64.6%. This issue requires immediate attention as large proportion of menstruation- problems remains undetected. In a study in Pondicherry, 73.3% of the girls reported some or other kind of menstrual problem.[12] High reported prevalence of menstrual problems among girls suggests an immediate attention needs to be taken to promote a healthy reproductive life amongst the girls.

Our study reported that 80.0% girls had prior knowledge about menarche. Whereas, an earlier study in rural parts of East Delhi reported poor prior knowledge about menarche , only 29% awareness among adolescent girls.[13]

A recent study also reported only 22.3% awareness of menstrual cycle before attaining menarche.[14] In another study in rural area of Belgaum District also reported that awareness regarding menstruation was very poor among the girls.[15] The study also reported generalized negative perception and low awareness regarding menstruation in a majority of the population of India leading to ignorance of this crucial event. This has caused an upsurge in the menstrual related problems in the Indian girls.[2,16,17] High degree of awareness about menarche observed in our study may be attributed to variations in the urban/rural residence as well as the socio-economic status. Low socio-economic status is linked with low literacy rates, thus, decreased reporting of the menstrual problems. Our study represents dominance by urban girls of high SES.

In the present study, more than half of the girls gained knowledge regarding menstruation from mothers and also discussed their problems with mothers. This observation was in accordance with a study reporting maximum percentage of girls relying on their mothers as the main source of information about menstruation.[18] It has been seen that the girls discuss their problems with their mother, friends and relatives.[3] Therefore, it is essential to provide correct knowledge about menstrual problems to mothers so that this can be properly passed on to the adolescent girls.

Maximum number of girls in the present study reported to have suffered from abdominal pain during menstruation followed by backache/headache and leg cramps. Abdominal pain was the most common problem reported by 62.6% respondents ever faced menstrual problem during last one year and it was also the most common problem pre-menstrual problem. Abdominal pain was also found to be the most common problem related to menstruation suffered by 57.7% respondents in our earlier study.[8] These results are also in accordance with the study reporting 44.3% girls experiencing dysmenorrhea followed by 29.4% suffering from back ache during menstruation.[15] Another study conducted in Thiruvananthapuram revealed similar kind of problems faced by the school girls during menses.[16] It was reported that 72.4% of the girls experienced dysmenorrhea followed by back pain by 40.6% of the girls. A study in Nagpur reported 61% of the girls experienced dysmenorrheal.[19] Also, the results obtained in the present study are also in agreement with several other studies.[13,20,21]

It was seen in the present study that 57.4% of the girls faced problems before menstruation and 96.7% of them suffered from abdominal pain followed by depression and mood swings. These pre-menstrual problems/complaints began one day before menses in 41.6% of surveyed girls. A similar account of premenstrual problems has been reported among girls in Nagpur where 55.8% of the adolescent girls reported to have experienced pre-menstrual symptoms.[19] The result from the present study was also consistent with another study from Wardha that documented pre-menstrual symptoms in 56.2% of the participants.[22]

Menstrual flow was reported to be normal by 81.4% of the total respondents in the present study. This observation was in accordance with another study from Kolkata in which maximum number of girls had normal flow during menstruation.[23] Although, menstrual history was recorded to be regular in fourth-fifths of the girls in the present study, it was irregular among majorly of girls in that study.[23]

In the present study, only 25.3% of the girls reported to have taken treatment for menstruation related problems mainly allopathic treatment by 76.6% of girls seeking treatment. In our earlier study, about 37% girls having some menstrual problems/complaints opted for treatment and 87.5% of those approached to allopathic care. Available literature has reported that females who take treatment, mostly go for allopathic cure.[3] About 32.7% subjects never took a treatment in spite of having problems related with menstruation found in an another study.[6] Various earlier studies reported limited use of health services for menstrual problems. A study among undergraduate students of Moradabad revealed that only 37.9% of the girls used some medication for relief from menstrual problems.[2] A study conducted in Thiruvananthapuram also found out that very less number (11.5%) of girls opted for treatment.[16] Use of painkiller in the present study was found to be 34.8% which is

incontrast with 23% observed earlier study.[6] Reasons for not approaching for treatment in the present study included mainly lack of awareness, use of home remedies, hesitation/shyness/fear. Poor treatment seeking rate may be due to approaching for treatment limited to well-educated portion of the society because a significant proportion of Indian female population is hesitant to approach for any treatment because of the taboos and cultural beliefs associated with menstruation. In a culturally diverse country as India, various myths and taboos surround these sensitive topic of menstruation.[24] Maximum percentage of the school girls who did not opt for any treatment for menstrual problems cited use of home remedies as a reason for not approaching for professional help, followed by hesitation/shyness in discussing problems in our study. It has been seen that due to hesitation in discussing the problems, girls either do not take medication or take some pills for pain relief on their own without any professional consultation.[2] Considerable percentage of the girls relies on home remedies for treating the problems related to menstruation, followed by ayurvedic /homoeopathic treatment.[3]

Use of painkiller in the present study was found to be 34.8%, which is in contrast with earlier studies.[6,8] In the present study, it was found out that around 13.6% participants practiced self-medication. Main source of advice for consuming painkillers during menstruation was reported to be doctors by 41.5% of these girls taking painkillers. These statistics regarding medication during menstruation are in accordance with Moradabad study where 37.9% of the girls took medicines for relief of menstrual pain and mostly practiced self-medication.[2] However, another study conducted in Wardha reported self-medication in 7.13% of the adolescent girls.[22] It has been seen that the girls lack knowledge related to medication available for preponing or postponing menses. In the present study, only 7.8% girls were aware of medication for preponing /postponing of menses amongst the school-going girls. Very little was known regarding this aspect of menstruation-related medications. Awareness of medication for preponement/postponement menses was reported 13.2% among unmarried girls in Chandigarh in an earlier study.[8] Shyness was reported to be the main reason for not approaching to doctors for treatment of menstrual problems reported by 57.7% respondents in our earlier study.[8]

Present study reported that girls from joint families, of low/middle socio-economic status and those who had mentors were at significantly lower risk of menstrual problems. Significant risk reduction for menstrual problems among those having mentors in school set-up indicates possible improvements by mentorship programs in the school set-up providing a necessary platform for the adolescents to share their menstrual and other problems. Very little information is available regarding the type of menstrual education that is being provided in schools country-wide. Role of mentors also need to be investigated. This can be highly beneficial for reducing various reproductive health problems prevalent among adolescent girls. The adolescent girls living in joint families reportedly had less risk for menstrual problems than those living in nuclear families may be due to better chances of sharing their problems and better psychosocial conditions expected in joint families as expected. Moreover, girls from high SES class may be at higher risk of menstrual problems due to less chances of sharing of problems or due to high degree of awareness and reporting of problems.

Present study has several limitations because of reporting bias in problems and treatment sought by respondents and clinical examinations could not be done in this community based study. Moreover, there are chances of under estimation as some menstruation- problems remain undetected due to sharing menstrual issues due to traditional norms, cultural beliefs associated with menstruation, shy nature and felt hesitation of respondents. Adverse impact of menstrual problems on reproductive life of women could not be assessed in the present study. Exact reasons of lower risk of mentorship and in low SES class needs to be investigated further and may be subject matters of future studies.

CONCLUSION

Study concludes that menstrual problems among girls are highly prevalent among adolescent girls in schools of Chandigarh. High reported prevalence of menstrual problems suggests an action to promote a healthy reproductive life amongst the girls. There is an urgent need to create awareness of menstrual problems and safe menstrual practices among girls as well as mothers. They should be imparted health education to avoid their misconceptions regarding menstruation. Adolescent girls should be offered possible treatment options with adolescent friendly approach. Reproductive health education in the school curriculum should be introduced for improving awareness of the adolescents and simplifying the approach for seeking professional help. Mentorship program in the school set-up may result in desired improvements providing adolescent friendly health services for sharing their menstrual and other problems. Screening programs for menstrual related problems should also be started at school level to reduce upsurge of menstrual problems among Indian girls.

Key points

- Menstrual problems among girls are highly prevalent and adolescent girls do not report /approach for treatment because of several reasons.
- Girls and their mothers should be imparted health education for clearing up their misconceptions and be offered them possible treatment options

- Girls should be offered treatment options and reproductive health education should be introduced in the school curriculum for increasing their awareness and addressing their several reproductive health needs with adolescent friendly approach.

- Mentorship program in school set-up may result in desired improvements providing adolescent friendly health services for sharing their menstrual and other problems.

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