Original Article

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Community Section

Menstrual Pattern among Unmarried Women from Northern India

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ABSTRACT

Background: Menstruation disorders are also responsible for emotional, physical, behavioural and dietary practice changes. These changes affect their normal functioning and social life. The present study was carried out to find the prevalence of menstrual problems among unmarried girls of Chandigarh, India and to compare their knowledge and beliefs regarding menstruation in different sub–groups.

Methodology: A community based cross-sectional study was conducted among 744 unmarried females in Rural, Urban and Slum strata of UT Chandigarh, India. Data were collected using a self-administered structured questionnaire on menstruation. Chi–square value was used for testing statistical significance.

Results: The mean age of the respondents was 16.84±3.05 years. Maximum respondents (40.9%) were educated up to 10th standard/ High school. 448 (60.2%) were aware of menstruation before starting of menarche. Awareness was found to be significantly associated (p=0.02) with age. Socio–economic status and prior knowledge of respondents was also found to be significantly associated (p< 0.001). 61% (454) of the respondents had a regular flow during menses. Normal flow was reported by 70.2 %(522) of the respondents. Dysmenorrhea was found to be the most common problem suffered by 429 (57.7%) respondents.

Conclusion: Menstrual hygiene is an issue that needs to be addressed at all levels. A variety of factors are known to affect menstrual behaviors, the most influential ones being economic status. It is essential to design a mechanism to address and for the access of healthy menstrual practices.

Key words: Menstruation, Women, India, Knowledge

INTRODUCTION

Menstrual cycle is the cyclical shedding of endometrium every 28 ± 7 days in response to hormones. It is a natural phenomenon that occurs throughout the reproductive years of every woman`s life during which blood loss per cycle is not greater than 50 ± 30 ml with or without discomfort [1]. A woman on an average undergoes 400 menstrual cycles prior to menopause and the average menstrual cycle lasts for about 5 days.

Menarche is the onset of menstruation and it is one of the most significant milestones in a woman's life. The mean age at menarche varies from population to population and is known to be a sensitive indicator of various characteristics of population including nutritional status, geographical location, environmental conditions and magnitude of socio–economic inequalities in a society [1,2].

Knowledge of the length and variation of the menstrual cycle is necessary for patient education and for identifying deviations from normal to guide clinical evaluation [3]. Among the gynaecological problems, menstrual problems are said to be the major ones especially among adolescent females [3,4].

75% of adolescent girls are reported to have menstrual dysfunction and is known to affect the normal daily chores. Delayed, irregular, painful, and heavy menstrual bleeding are common occurrence among younger age and are the leading reasons for physician office visited by adolescents [4]. Dysmenorrhea is yet another major cause of activity restriction and school absenteeism in adolescent girls. However, the condition is often considered as physiological pain and generally ignored [4,5].

Menstrual patterns are influenced by a number of host and environmental factors [5]. Menstruation disorders are also responsible for emotional, physical, behavioural and dietary practice changes. These changes affect their normal functioning and social life. Rigid adherence of traditional norms and practices, ignorance about menstruation, inadequate health care facilities separately for unmarried girls etc also restricted their treatment seeking behaviour also [6].

Knowledge regarding the factors influencing menstrual symptoms is important in order to manage it effectively and help the women to make up the days less troublesome and tolerable. The present study was carried out to find the prevalence of menstrual problems among unmarried girls of Chandigarh, India and to compare their knowledge and beliefs regarding menstruation indifferent sub groups.

MATERIALS & METHODS

Study Design: A community based cross-sectional study design was adopted in Rural, Urban and Slum strata of UT Chandigarh, India.

Duration of Study: Study was conducted during April 2011 to March 2012 in total duration of 12 months.

Sampling Technique: Stratified Multistage Random Sampling Design with probability proportional to size (PPS) was adopted and respondents were selected with proportional allocation from different selected wards/strata. Whole area of Chandigarh was divided into four geographical strata. Within each stratum, four sectors/colonies/ villages were selected at random with proportional allocation to select a total of 16 clusters from the whole population.

Inclusion Criterion for Respondents: Only those unmarried girls who have already attained menarche more than one year back and whose parents were willing to participate in the study were included.

Optimum Sample Size

Optimum sample size was calculated on the basis of a pilot survey using the formula:

N (optimum) = (1.96)2 P (1-P)/L2

Where, P = Prevalence of adolescent girls having some menstrual health problem.

L = Permissible error in estimation.

A sample of an optimum size of 744 respondents was selected by

the sampling technique mentioned above. Optimum sample size for the proposed study is calculated on the basis of anticipated population proportion of 75% respondents having at least one menstrual complaint with prior experience, assuming 95% confidence coefficient and 5% permissible error.

Survey Technique: House–to–house surveys were conducted to collect the desired information by personal interview method. Respondents were interviewed individually in privacy using pre-designed, pre–tested, semi-structured interview schedule. Interview schedule was finalized after conducting a qualitative survey to explore relevant questions and to get insight of the problem. A well-trained team of female investigators including co-investigators as well as medical social worker / other female staff of the department were involved in data collection.

Data was analyzed by using SPSS 16. Chi–square value was used for testing statistical significance.

Ethical Consideration

Informed consent following the Ethical Guidelines of World Medical Association Declaration of Helsinki was taken. In case of respondents below 18 years of age, consent from their parents was taken. For respondents aged 18 years and above, informed consent was taken from respondents. Only respondents giving consent were interviewed in privacy ensuring confidentiality. Respondents were not examined for diagnosis of gynecologic morbidity in this community–based study due to some ethical issues involved.

RESULTS

A total of 744 respondents took part in the study. The mean age of the respondents was 16.84±3.05 years. Maximum respondents (40.9%) were educated up to 10th standard/High school. 80.8% were living in the nuclear families [Table/Fig-1].

Among all 744 respondents, 448 (60.2%) were aware of menstruation before starting of menarche [Table/Fig-2].

CHARACTERSTIC	NO.	%
Age		
10-12	20	2.7
13-15	282	37.9
16-18	240	32.3
18-21	162	21.8
22-25	40	5.4
Mean ± SD	**16.84 ± 3.05**	
Educational Status		
Illiterate	82	11.0
Drop-out from school	60	8.1
Primary	46	6.2
Middle	69	9.3
High School/10th standard	304	40.9
10+2	74	9.9
Graduation	8	1.1
Post graduation	7	0.9
Professional Courses	94	12.6
Medium if studying presently (n=556)		
Hindi	356	63.4
English	122	20.4
Panjabi	78	16.1
Type of Family		
Joint	133	17.9
Nuclear	601	80.8
Extended	10	1.3
Educational Status of Father		
Illiterate/Just literate	119	16.0
Primary	55	7.4
Middle	96	12.9
High School	169	22.7
Intermediate	116	15.6
Graduate	117	15.7
Post Graduate	58	7.8
Professional Degree	14	1.9
Educational Status of Mother		
Illiterate/Just literate	187	25.1
Primary	136	18.3
Middle	121	16.3
High School	134	18.0
Intermediate	32	4.3
Graduate	73	9.8
Post Graduate	36	4.8
Professional Degree	25	3.4
Occupation of Father	744	100.0
Unemployed	30	4.0
Service	373	50.1
Business	162	21.8
Labourer	111	14.9
Skilled Worker	53	7.1
Others	15	2.0
Occupation of Mother	744	100.0
Housewife	433	58.2
Service	87	11.7
Business	10	1.3
Labourer	80	10.8
Skilled Worker	106	14.2
Others	28	3.8
Socio-economic Status	744	100.0
Low	219	29.4
Middle	364	48.9
High	161	21.6
Total	744	100.0
Family Size		
Upto 3	100	13.4
4-5	384	51.6
6-8	229	30.8
above 8	31	4.2
BMI		
Below18.5	240	32.2
18.5-25.0	476	64.0
25 and above	28	3.8
Overall	**744**	**100.0**

[Table/Fig-1]: Respondents by socio-demographic characterstics

Prior Knowledge	No.	%
No	296	39.8
Yes	448	60.2
Total	**744**	**100.0**
Source of Information(n=448)		
Mother	210	46.8
Elder Sister/ Female Relatives	116	25.9
Friends	127	28.3
Information media	72	16.1
Others	19	4.2

[Table/Fig-2]: Respondents by prior knowledge regarding menstruation

Characteristics	Total (n=744)	Prior Knowledge		χ^2 (p-value)
		No	Yes	
Age				
10-12	20	12 (60.0)	08 (40.0)	χ^2= 12.09 (p=0.02)
13-15	282	93 (33.0)	189 (67.0)	
16-18	240	100 (41.7)	140 (58.3)	
18-21	162	71 (43.8)	91 (56.2)	
22-25	40	20 (50.0)	20 (50.0)	
Mean ± SD	**16.84 ± 3.05**	**17.15 ± 3.28**	**16.63 ±2.87**	
Educational Status				
Literate / Just Literate	188	124 (66.0)	64 (34.0)	χ^2= 73.4 (p=0.000)
School Level	447	144 (32.2)	303 (67.8)	
College Level	109	28 (25.7)	81 (74.3)	
Medium (n=556)				
Hindi	356	120 (33.7)	236 (66.3)	χ^2= 5.4 (p=0.06)
English	122	36 (29.5)	86 (70.5)	
Panjabi	78	16 (20.5)	62 (79.5)	
Total	**556**			
Type of Family				
Joint	133	50 (37.6)	83 (62.4)	χ^2= 0.73 (p=0.69)
Nuclear	601	241 (40.1)	360 (59.9)	
Extended	10	05 (50.0)	05 (50.0)	
Educational Status of Mother				
Literate / Just Literate	323	174 (53.9)	149 (46.1)	χ^2= 47.3 (p<0.001)
School Level	287	82 (28.6)	205 (71.4)	
College Level	134	40 (29.9)	94 (70.1)	
Occupation of mother				
Housewife	433	154 (35.6)	279 (64.4)	χ^2= 7.7 (p=0.006)
Others	311	142 (45.7)	169 (54.3)	
Family Size				
Upto 3	100	59 (59.0)	41 (41.0)	χ^2= 24.2 (p<0.001)
4-5	384	126 (32.8)	258 (67.2)	
6-8	229	97 (42.4)	132 (57.6)	
above 8	31	14 (45.2)	17 (54.8)	
Mean ± SD	**5.15 ± 1.67**			
Socio–economic Status				
Low	219	111 (50.7)	108 (49.3)	χ^2= 17.1 (p<0.001)
Middle	364	135 (37.1)	229 (62.9)	
High	161	50 (31.1)	111 (68.9)	
Discussant				
Mother	405	159 (39.3)	246 (60.7)	χ^2= 0.11 (p=0.76)
Others	339	137 (40.4)	202 (59.6)	
Home Environment				
Religious	414	169 (40.8)	245 (59.2)	χ^2= 0.42 (p=0.55)
Non-Religious	330	127 (38.5)	203 (61.5)	
Internet Exposure				
Yes	75	27 (36.0)	48 (64.0)	χ^2= 0.49 (p=0.53)
No	669	269 (40.2)	400 (59.8)	
Age at Menarche				
Upto 13 years	518	201 (38.8)	317 (61.2)	χ^2= 0.69 (p=0.41)
14 years & above	226	95 (42.0)	131 (58.0)	
Mean ± SD	**13.02± 1.13**	**12.97±1.25**	**13.06±1.13**	
Overall	**744**	**296 (39.8)**	**448 (60.2)**	

[Table/Fig-3]: Prior knowledge of respondents by selected characteristics (n=744)

Awareness was found to be significantly associated (p= 0.02) with age. Maximum degree of awareness (67.0%) was found among respondents aged 13–15 years.

Respondents of higher age were more likely to have prior knowledge as compared to respondents of lower ages. Awareness was also highly associated with educational status. Among college going girls the proportion of awareness was found to be 74.3% followed by 67.8% among girls studying in schools.

Awareness was found to be very low only 34% among those who were either illiterate or just literate. Among currently studying students Punjabi medium students were having maximum awareness (79.5%) as compared to those of Hindi medium (66.6%). Lowest proportion of girls having prior knowledge of menstruation was found to be 66.3% among Hindi medium students.

However, medium of education was not found to be significantly associated (p= 0.06) with prior knowledge of respondents.

Degree of awareness was found to be maximum among respondents from joint families. Awareness was also found to be significantly associated with occupation of mothers (p= 0.006). Prior knowledge regarding menses was found among 64.4% of the respondents whose mothers were housewives compared to 54.3% among the respondents whose mothers were in any other profession.

Family size was also found to be a significant correlate (p< 0.001) of prior knowledge of menstruation. Maximum awareness was among those respondents who were from families of size 4 to 5. In case of large family size and also in case of single child families awareness was found to be comparatively low which may explain the effect of siblings in the family and probably the problem sharing in case of sister.

Socio–economic status and prior knowledge of respondents was also found to be significantly associated (p< 0.001). Respondents from high socio economic status were having maximum percentage of awareness (68.9%) as compared to only 49.3% in low socio economic status category.

No significant association was found between discussant and prior knowledge it may be due to discussion regarding menstrual problems only after attaining menarche and probably mothers do not discuss menstrual issues with their daughters at pre-menarcheal stage. Religious environment at home and exposure to internet were not playing significant role as far as creating awareness regarding menstruation is concerned [Table/Fig-3].

In the study 61% (454) of the respondents had a regular flow during menses. Average duration was 3.96 ±1.72 days. Normal flow was reported by 70.2% (522) of the respondents [Table/Fig-4].

Menstrual History	No	%
No response	131	17.6
Regular	454	61.0
Irregular	159	21.4
DURATION		
No response	82	11.0
1	16	2.2
2	12	1.6
3	90	12.1
4	149	20.0
5	330	44.4
6	65	8.7
Mean ± SD	3.96 ± 1.72	
Menstrual Flow		
Scanty	26	3.5
Normal	522	70.2
Excessive	54	7.3
No response	142	19.1
Total	744	100.0

[Table/Fig-4]: Respondents menstrual history

Type of problem faced	No (n=744)	%
Dysmenorrhea	429	57.7
Feeling of sickness	223	30.0
Backache	143	19.2
Nausea / vomiting	85	11.4
General Weakness	79	10.6
Headache	74	9.9
Change in mood	65	8.7
Leg Pains / Cramps	65	8.7
Discomfort	23	3.1
Feeling of anxiety/ Stress	21	2.8
Others	11	1.5
Facing either of the above problem	**477**	**64.1**
No problem	**267**	**35.9**

[Table/Fig-5]: Respondents by menstrual problems/complaints during last one year

Among all respondents, 477 (64.1%) were having at least one problem related to menstruation.Dysmenorrhea was found to be the most common problem suffered by 429 (57.7%) respondents. Feelings of sickness before starting of menstruation were felt by 223 (30.0%) respondents which may indicate high prevalence. Most of respondents (66.7%) reported these complaints one day prior to starting of menstrual cycle with mean number of 1.65 ±1.18 days [Table/Fig-5].

DISCUSSION

Racial and regional differences have been reported to affect the menarche age [7]. Factors such as heredity, environmental conditions, body stature, socioeconomic status, nutritional and health status, family size, level of education, and psychological well being are known to influence menarche age [7,8].

The mean age for menarche observed in the present study from Chandigarh was 13.02 ± 1.13 years. Small differences have been reported in various studies from across India varying from 13.06 ± 1.43 years in West Bengal [9] to 13.4 years in Goa [10], 13.5 years in Chennai [11], 13.6 years in East Delhi [12] and 13.7 years in Rohtak [13].

Overall prevalence of the menstrual disorders in the present study was found to be 64.1% in the present study. Dysmenorrhea is an important menstrual disorder in adolescence, and common in young women with ovulatory cycles. It is an important public health problem among the female population. Prevalence of dysmenorrhea among the respondents in the present study was 76.9% compared to 61% reported from Chennai and 63.5% from Delhi [11,12].

Socio–economic status and prior knowledge of respondents were also found to be significantly associated ($p < 0.001$). Respondents from high socio economic status were having maximum percentage of awareness (68.9%) as compared to only 49.3% in low socio–economic status category.

Awareness regarding menarche is common among young girls before encompassing it. In the present study it was 60.2%. The major source for information was mothers, friends, or the information media, such results were also reported by other works [12,14–17]. Mothers and friends/peers generally lack the knowledge regarding menstruation since they have also not been told about this process in life [13,16]. Inaccurate and incomplete information provided to the girls through limited sources can lead to health problems and complications. Parents and print/ electronic media can act as better source of knowledge transfer among adolescent girls, since most of girls have access to both. [12,13]. But it is very important that the information is correct. For this parents should be educated first related to adolescent issues. Role of media can also be vital in this area.

CONCLUSION

Menstrual hygiene is an issue which needs to be addressed at all the levels. A variety of factors are known to affect menstrual behaviours, the most influential ones being economic status. The menstrual disorders among female adolescents are common. The findings of the study suggest that awareness among girls on issues related to sexual and reproductive health through proper population education need to be created and for this, emphasis may be given on various mass media/information, education and communication programmes.

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