

“Menstrual problems and hygiene among rural adolescent girls of Tamil Nadu - A cross sectional study”

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Abstract

Background: Menstruation is a normal physiological process that begins during adolescence and many a times associated with various symptoms that occurs either before or during the menstrual flow. Many of the adolescent girls experience some problems associated with menstruation, which might indirectly have an impact in their academic excellence, sports activities and their self-esteem.

Aim: To study the types and the frequency of problems related to menstruation among the adolescent girls.

Methodology: A cross sectional study was undertaken among 500 adolescent girl students in the age group of 14 – 19 years who had attained menarche. The student’s data were collected by personal interviews by using a pre tested and a structured questionnaire. The questionnaire comprised of age, socio economic status, educational status, menarcheal age, menstrual pattern, premenstrual symptoms (PMS), dysmenorrhoea, impact of menstrual disorders on school attendance, consultation for menstrual problems and the hygienic practices followed during the time of menstruation Results: The mean age of menarche in our study population was 12.67 years. 62.2% of the adolescent girls had pre-menstrual symptoms. Among the various menstrual symptoms the most common were abdominal pain (94.6%), cramps (82.2%) and backache (77.8%). Among the various menstrual problems experienced by our study subjects dysmenorrhoea(65%) was the most common one followed by oligomenorrhoea(16%) and menorrhagia (11%). Only 41.6% of them had the habit of using sanitary pads and majority had said that the average pad/cloth (51.4%) used on those days were only 2 and 90% of the girls did not had the habit of cleaning the genitals with soap and water.

Conclusion: The pre-menstrual symptoms and the menstrual problems were quite commonly prevailing in this age group as well as the poor menstrual hygiene. So a proper awareness programme had to be conducted on a routine basis in all schools particularly the rural schools emphasising the importance of genital hygiene and the remedies for the common menstrual problems which occurs in adolescent age group.

Keywords: Menstruation, Adolescent girls, Rural area, Menstrual problems.

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Introduction

The word adolescent was derived from of a Latin word, *adolescere* which means “growing to maturity”¹. The World Health Organization defines the maturity phase from 10 years to 19 years of age². The onset of puberty is the starting point of adolescence, and the completion of education, getting an employment, marriage, and finally childrearing is the end of the adolescent stage³. Puberty is initiated in later phase of childhood period through a cascade of endocrine changes initiated by the hypothalamo-pituitary-ovulation axis that which leads to sexual maturation and reproductive capability in the females.

Human puberty is accompanied by major physical growth and substantial brain maturational changes, features that are unique in the animal world⁴. Beginning

of menstruation which is called as menarche, marks the most important step in the pubertal growth of a female. The age of menarche is generally between 10-16 years; however it may vary depending on geographic variation, environmental condition and nutritional status⁵.

Menarche is a part of the complex process of growing up. Menstruation is a normal physiological process that begins during adolescence and many a times associated with various symptoms that occurs either before or during the menstrual flow⁶. Adolescent girls are usually considered as a vulnerable group, particularly in India where still the female child is still being considered as neglected one in most parts of the rural and tribal areas in our country⁷.

After menarche, common menstrual abnormalities that the female adolescent usually would encounter are dysmenorrhea, irregularities in menstrual blood flow and the premenstrual symptoms. More than 75% of the adolescent girls experience some problems associated with menstruation⁸, which might indirectly have an impact in their academic excellence, sports activities and their self-esteem. Studies have suggested that menstrual disorder at the age of 15 or 16 act as a marker for hyperandrogenemia and hyperlipidemia in their later life⁹.

In today's world the life style changes particularly consumption of lot of junk foods and lack of physical activity and the amount of stress put up by the students in the school life were considered to be some of the major factors for menstrual disturbances in the adolescent girls¹⁰.

The awareness level about menstruation prior to menarche was found to be very much low among the rural adolescents in the developing countries like India¹¹. Lack of menstrual hygiene is one of the major risk factor for the development of reproductive tract infections in the adolescent females¹². Better knowledge and practices on menstrual hygiene reduce the risk of acquiring reproductive tract infections¹³. According to a multi-centric survey carried out in different countries menstrual disturbances was found to be the first and fore most common cause for morbidity among adult women^{14,15}. In rural India, where a female child and its problems were ignored there is an urgent and unmet need to understand their menstrual pattern and problems, in such a way that it should be addressed by the health care system by framing suitable guidelines for them.

Aim

To study the types and the frequency of problems related to menstruation among the adolescent girls.

Methodology

A cross sectional study was undertaken among 500 adolescent girl students in the age group of 14 – 19 years who had attained menarche. A government middle and higher secondary school for girls which was very near to our medical college was chosen for conducting our study. All the students in that school in the above said age group were included in the study. It comprises of 545 girl students and in that 45 of them were either not willing to participate in the study or they were absent during the study period and so 500 students had participated in the study. The study was conducted for a period of 6 months between June 2015 – December 2015. The study was carried out after getting the approval and clearance from our institutional ethical committee

The student's data were collected by personal interviews by using a pre tested and a structured questionnaire. The questionnaire comprised of age, socio economic status, educational status, menarcheal age, menstrual pattern, premenstrual symptoms (PMS), dysmenorrhoea, impact of menstrual disorders on school attendance, consultation for menstrual problems and the hygienic practices followed during the time of menstruation. An International Classification of disease-10 symptoms checklist for PMS¹⁶ was used to identify girls with pre-menstrual symptoms. Clinical criteria were used to record other problems pertaining to menstruation.

All the data were entered in the SPSS version 16 statistical software and the parametric variables were used for calculating the mean, standard deviation and the percentage and for the non-parametric variables chi-square test was used to derive the statistical significance.

Results

The age wise distribution of the study population is shown in Table 1. The mean age of the adolescent girls in our study subjects was 17.23±2.31 years. It is also seen from the table that there was almost equal distribution of all age groups from 14 to 19 years. In our study subjects the minimum age of menarche was 11 years and the maximum age was 16 years with the mean age of 12.67 years and for majority of the girls the age of menarche was between 12 and 13 years (Table 2).

BMI being the most important factor related to menstrual problems in the adolescent girls. Similarly in our study also we found girls with underweight, overweight and obese had most of the menstrual problems when compared with the girls with normal weight. In our study subjects majority of them were underweight (37%), whereas only 16.4% were overweight and 14.2% were obese (Table 3).

In our study 62.2% of the adolescent girls had pre-menstrual symptoms, which was measured by using the questionnaire designed by WHO for assessing the PMS. Among the various menstrual symptoms the most common were abdominal pain (94.6%), cramps (82.2%) and backache (77.8%). The other menstrual symptoms experienced by our study subjects were headache, irritability and breast tenderness (Table 4).

Among the various menstrual problems experienced by our study subjects dysmenorrhoea(65%) was the most common one followed by oligomenorrhoea(16%) and menorrhagia (11%) (Table 5). The impact of the menstrual problems had directly reflected on their school attendance. The girls were being absent for school during the days when they experienced the menstrual symptoms (Table 6).

The practices on menstrual hygiene were comparatively poor among the rural adolescent girls. Only 41.6% of them had the habit of using sanitary pads and majority had said that the average pad/cloth (51.4%) used on those days were only 2 and 90% of the girls did not had the habit of cleaning the genitals with soap and water regularly during the menstrual flow days and majority had the habit of disposing the pads (45%) along with the routine waste and 32% told that they wash the cloth and reuse it. So, these things reflect an unhygienic practice followed during the period of menstrual flow among the adolescent girls (Table 7).

Table 1: Age wise distribution of the study population

Age in years	Frequency	Percentage	Mean	SD
14	85	17%	17.23	2.31
15	69	13.8%		
16	72	14.4%		
17	84	16.8%		
18	100	20%		
19	90	18%		
Total	500	100%		

Table 2: Distribution of the study population based on their age of menarche

Age in years	Frequency	Percentage	Mean	SD
11	54	10.8%	12.67	2.01
12	159	31.8%		
13	143	28.6%		
14	89	17.8%		
15	42	8.4%		
16	13	2.6%		
Total	500	100%		

Table 3: Distribution of the study population based on their BMI

BMI	Frequency	Percentage	Menstrual problems		P value
			Present	Absent	
<18.5	185	37%	147(79.4%)	38(20.5%)	<.0001
18.5 – 23.9	162	32.4%	85(52.4%)	77(47.5%)	0.328
24 – 29.9	82	16.4%	59(71.9%)	23(28%)	<.001
30 – 34.9	65	13%	45(69.2%)	20(30.7%)	<.001
35 – 39.9	6	1.2%	4(66.6%)	2(33.3%)	<.01
>=40	0	0			
Total	500	100%			
Mean±SD	21.89±2.74				

P value derived by using Chi-square test

Table 4: Distribution of the study population according to their Pre-menstrual and Menstrual symptoms

Symptoms	Frequency	Percentage
Pre- menstrual symptoms	311	62.2%
Menstrual symptoms		
1. Abdominal pain	473	94.6%
2. Abdominal cramps	411	82.2%
3. Backache	389	77.8%
4. Headache	208	41.6%
5. Irritability	188	37.6%
6. Breast tenderness	132	26.4%

Table 5: Distribution of the study population based on their various menstrual problems

Menstrual problems	Frequency	Percentage
Dysmenorrhoea	325	65%
Polymenorrhoea	20	4%
Oligomenorrhoea	80	16%
Secondary Amenorrhoea	15	3%
Menorrhagia	55	11%
Hypomenorrhoea	30	6%

Table 6: Impact on school attendance due to various menstrual problems among the study subjects

Menstrual problems	School attendance	Frequency	P value
Dysmenorrhoea (n=325)	Present	118 (36.3%)	<.0001
	Absent	207 (63.6%)	
Polymenorrhoea (n=20)	Present	13 (65%)	<.001
	Absent	7 (35%)	
Oligomenorrhoea (n=80)	Present	52 (65%)	<.001
	Absent	28 (35%)	
Secondary amenorrhoea (n=15)	Present	15 (100%)	<.001
	Absent	0	
Menorrhagia (n=55)	Present	8 (14.5%)	<.0001
	Absent	47 (85.4%)	
Hypomenorrhoea (n=30)	Present	28 (93.3%)	<.0001
	Absent	2 (6.6%)	

P value derived by applying Chi-square test

Table 7: Distribution of the study population based on their menstrual hygiene practices during menstruation

Menstrual hygiene practices	Frequency	Percentage
Use of sanitary pads	Yes	208 41.6%
	No	292 58.4%
Number of pads/cloths per day	1	187 37.4%
	2	257 51.4%
	3	56 11.2%
Cleaning of external genitalia with soap and water during every time of changing the pads	Yes	52 10.4%
	No	448 89.6%
Disposal of sanitary pads	Dispose it with other routine waste	228 45.6%
	Burning it	42 8.4%
	Flushing in toilet/hiding it	71 14.2%
	Washing the cloth and reusing it	159 31.8%

Discussions

This large population study among the adolescent girls of rural area found that menstrual problems and pre-menstrual symptoms are quite commonly prevalent among them and it has directly influenced their absence in the school attendance and they also had a very poor menstrual hygiene practices during the period of menstrual flow.

The mean age of menarche in the present study was 12.67 years. The results are almost in par with the study done by Singh M.M. et al¹⁷, in which he quoted that the mean age of menarche was 13.6 years and in another study done in rural Orissa, the mean age of menarche was found to be 12.97 years¹⁸. A study done by Zegeye DT et.al in Ethiopia had found the mean age of menarche was 14.7 years and this difference might be due to the varied geographic location and the very poor socio – economic status prevailing there¹⁹. Menarche is celebrated as an occasion in Tamil Nadu particularly in rural areas in a grand manner, but very little information

about the physiological processes which are taking place during menstruation and hygienic practices which are to be followed were given to them.

In our study we found that the adolescent girls with underweight, overweight and obese had experienced more menstrual problems when compared to girls with normal weight and this results are almost in par with the study done by Rupa Vani K et al, she also quoted that increase in junk food consumption, lack of physical activity and dieting are factors responsible for various menstrual problems in adolescent girls²⁰.

Among the various pre-menstrual symptoms experienced by our study subjects the most common were abdominal pain, cramps and back-ache, almost similar type of results are seen in the studies done on adolescent girls of rural Bijapur by Patil MS²¹ and another study by Kirti Jogdand in urban slum of Guntur district²².

Dysmenorrhoea was one of the most common menstrual disturbance experienced by our study subjects

followed by oligomenorrhoea and menorrhagia. It is almost in par with the other previous reports²³⁻²⁵. In the present study most of the adolescent girls were being absent for schools during their menstrual flow period and the similar type of result was reported by the studies done by Drosdzol A et al²⁶, Jacks TH et al²⁷ and Slap GB²⁸.

The hygiene practices during the menstrual flow among the adolescent girls in our study had shown that less than 50% of them had the habit of using sanitary pads during the menstrual flow time and among those who were using the sanitary pads only 50% had used more than 2 pads per day and the results were similar to that of studies done by Khanna A et al²⁹ and Mudey AB et al³⁰. The practice of cleaning the genitals with soap and water during the menstrual flow time was not satisfactory and it is consistent with the studies conducted by other authors^{30,31}.

Conclusion

The present study revealed that majority of the adolescent girls had attained the menarche at the right age. The pre-menstrual symptoms and the menstrual problems were quite commonly prevailing in this age group, which make themselves feel weak and refrain them from doing their routine work. Poor menstrual hygiene in our study subjects would make them at risk of developing certain reproductive tract infections. So a proper awareness programme had to be conducted on a routine basis in all schools particularly the rural schools emphasising the importance of genital hygiene and the remedies for the common menstrual problems which occurs in adolescent age group.

References

1. "Adolescence" Merriam-Webster.com. 2012. Available online on <http://www.merriam-webster.com/dictionary/adolescence>. Last accessed on Feb 21, 2016.
2. World Health Organization. The second decade: improving adolescent health and development. Geneva: World Health Organization, 2001.
3. Sawyer SM, Afifi RA, Bearinger LH, Blakemore SJ, Dick B, Ezech AC, Patton GC. Adolescence: a foundation for future health. *Lancet* 2012;379:1630-40.
4. Patton GC, Viner RM. Pubertal transitions in health. *Lancet* 2007;369:1130-9.
5. Thomas F, Renaud F, Benefice E, de Meeüs T, Guegan JF: International variability of ages at menarche and menopause: patterns and main determinants. *Human Biology* 2001;73:271-90.
6. Patil S N, Wasnik V, Wadke R. Health problems amongst adolescent girls in rural areas of Ratnagiri district of Maharashtra India. *Journal of clinical and diagnostic research*. October, 2009; 3:1784-1790.
7. Sharad Bhausaheb Pandit. Common Menstrual Problems among Adolescent Students. *Sinhgad e Journal of Nursing*, Vol. IV, Issue I, June 2014.
8. Lee LK, Chen PCY, Lee KK, Kaur J. Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *Singapore Med J*. 2006 Oct; 47(10): 869-74.
9. Pinola P, Lashen H, Bloigu A, Puukka K, Ulmanen M, Ruokonen A, et al. Menstrual disorders in adolescence: a

marker for hyperandrogenaemia and increased metabolic risks in later life? Finnish general population-based birth cohort study. *Hum. Reprod.* 2012 Nov; 27(11): 3279-86.

10. Anderson JW, Patterson K. Snack foods: comparing nutrition values of excellent choices and "junk foods." *J Am Coll Nutr.* 2005 Jun;24(3):155-56.
11. Deo D, Ghataraj DC. Perceptions and practices regarding menstruation: a comparative study in urban and rural adolescent girls. *Indian J Community Med.* 2005;30:33-4.
12. Naik MK. A study of the menstrual problems and hygiene practices among adolescents in secondary school. *Thiruvananthapuram Indian J Pediatr.* 2012;1:79.
13. Dasgupta A, Sarkar M. Menstrual hygiene: how hygienic is the adolescent girl? *Indian J Community Med.* 2008;33(2):77-80.
14. Kumar R, Singh M, Kaur A, Kaur M. Reproductive health behavior of rural women. *J Indian Med Assoc.* 1994;93:128-31.
15. Bhatia JC, Cleland J. Reported symptoms of gynecological morbidity and their treatment in South India. *Stud Fam Plann.* 1995;26:203-16.
16. World Health Organization. International Statistical Classification of Disease and Related Problem; 10th revision (ICD-10). Geneva: WHO:1992. Available from: www.cdc.gov/nchs/icd/icd10.htm. Accessed on 14 February, 2011.
17. Singh M.M. et al "Awareness and health seeking behaviour of rural adolescent school girls on menstrual and reproductive health problems", *I.J.M.R.*, 1999. Vol. 53, Issue 10, 439-43.
18. Dutta Himansu Sekhar, "Sexual health status of adolescent girls in rural Orissa", <http://www.orissavha.org/studies/shstudy/202001-2.doc>.
19. Desalegn Tegabu Zegeye, Berihun Megabiaw and Abay Mulu; Age at menarche and the menstrual pattern of secondary school adolescents in northwest Ethiopia; *BMC Women's Health* 2009;9:29.
20. Rupa vani K.1, Veena K.S.2, Subitha L.3, Hemanth kumar V.R.4, Bupathy A. Menstrual abnormalities in school going girls – Are they related to dietary and exercise pattern? *Journal of Clinical and Diagnostic Research.* 2013 Nov, Vol-7(11):2537-2540.
21. Patil MS, Angadi MM. Menstrual pattern among adolescent girls in rural area of Bijapur. *Al Ameen J Med Sci.* 2013;6(1):17-20.
22. Keerti Jogdand, Pravin Yerpude. A community based study on menstrual hygiene among adolescent girls. *Indian J Maternal Child Health.* 2011;13(3):1-6.
23. Sharma P, Malhotra C, Taneja DK, Shah A. Problem related to menstruation among adolescent girls. *Indian J Pediatr.* 2008;75:125-9.
24. Khanna A, Goyal RS, Bhawsar R. Menstrual practices and reproductive problems: A study of adolescent girls in Rajasthan. *J Health Management.* 2005;7:91-7.
25. Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? *Indian J Commun Med.* 2008;33:77-80.
26. Drosdzol A, Nowosielski K, Skrzypulec V, Plinta R; Premenstrual disorders in Polish adolescent girls: prevalence and risk factors; *J Obstet Gynaecol Res.* 2011;37:1216-21.
27. Jacks TH, Obed JY, Agida ET, Petrova GV; Dysmenorrhoea and menstrual abnormalities among postmenarcheal secondary school girls in Maiduguri Nigeria. *Afr J Med Med Sci.* 2005;34:87-9.
28. Slap GB. Menstrual disorders in adolescence. *Best Pract Res Clin Obstet Gynaecol.* 2003;17:75-92.

29. Khanna A, Goyal RS, Bhawsar R. Menstrual practices and reproductive problems: A study of adolescent girls in Rajasthan. *J Health Management*. 2005;7:91-7.
30. Mudey AB, Keshwani N, Mudey GA, Goyal RC. A crosssectional study on the awareness regarding safe and hygienic practices amongst school going adolescent girls in the rural areas of Wardha district. *Global J Health Science*. 2010;2:225-31.
31. Narayan KA, Shrivastava DK, Pelto PJ, Veerapmmal S. Puberty rituals, reproductive and health of adolescent school girls of south India. *Asia Pacific Population Journal*. 2001;16:225-38.