

Menstrual Hygiene Practices Among Adolescent Girls of Urban and Rural Schools of Ludhiana, Punjab

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Abstract

Menstruation is still regarded as something unclean or dirty in Indian society, related with misconceptions and cultural restrictions. Lack of knowledge and poor hygienic practices during menstruation can lead to various gynaecological problems in the reproductive life of girls. In this community based cross-sectional study on 100 adolescent girls (50 from urban and 50 from rural) age 13-18 years of urban and rural schools were randomly selected (lottery method) from two conveniently selected schools of Ludhiana district of Punjab. Data was collected in March 2013. A structured questionnaire was used to collect the socio-demographic data, menstrual profile and Likert's scale was used to assess the menstrual hygiene practices. The descriptive statistics, unpaired *t* test, ANOVA test was used for analysis. Menstruation hygiene practice was found to be more in urban adolescent girls as compared to rural. Majority (*n*=17, 34%) of urban girls had excellent menstrual hygiene practices and 44 (88%) of urban girls were using commercially available sanitary pads as compared to 31 (62%) of rural girls. The majority of urban girls i.e. 31 (62%) and rural girls i.e. 38 (76%) had good menstrual hygiene practices. The mean score of menstrual hygiene practices of urban adolescent girls was higher i.e. 28.24 than the mean score of menstrual hygiene practices of rural adolescent girls (25.18). But the difference was statistically non-significant at *p*=0.05 level of significance. There was no association between menstrual hygiene practices and selected demographic variables. Efforts should be made to improve the menstrual hygiene practices of rural and urban adolescent girls so that vulnerability to reproductive tract infections be decreased and suffering of millions of women can be mitigated.

Adolescence in girls has been recognised as a turbulent period which signifies the transition from girlhood to womanhood. This transitional period is marked with the onset of menarche which is generally accepted by young girls, as a sign of maturity. However, some girls show negative responses such as shame, fear, anxiety and depression. Onset of menstruation is one of the most important changes occurring among the girls during the adolescence. The first menstruation (menarche) occurs between 11 and 15 years with a mean age of 13 years. In the Indian cultural milieu, are several traditions, myths, misconceptions, mystery and superstition prevail about menstruation. Mere mention of the topic has been a taboo in the past and even to this date the cultural and social influences appear to be a major hurdle for advancement of the knowledge of the subject (Munday et al, 2010).

Menstrual hygiene is defined as "sympathetic emotional and hygienic care given during menstruation". Menstruation is commonly called a period of menstrual flow. It consists of blood, mucus, endometrial fragments and vaginal epithelia. It is usually dark red and

has characteristics odour and contains 60 to 150 ml of fluid. Menstrual hygiene comprises care of genital area, use of sanitary napkins and personal hygiene. Genital area should be cleaned with antiseptic solution or soap and water before changing the pad at least twice a day and clean pads or clothes should be changed frequently whenever soaked with blood. Pads selected should be of proper size, length and quality. They should not be usually washed after usage but disposed of. The best method of disposal is burning. Menstrual fluid usually has very little odour until it contacts bacteria on the skin or in the air. Daily bathing or showering is adequate to control the odour. Bathing should be done in hot or warm water (Clement, 2012).

Sympathetic and careful handling of young girls experiencing first menstruation is of paramount importance. Menstrual hygiene should be taught by the mother or teacher explaining the physiological and other associated changes during a period.

Menstrual hygiene is an issue that every girl and woman has to deal with, but there is lack of awareness about the process of menstruation, the physical and psychological changes associated with puberty and management of menstruation. The taboos surrounding this issue in the Indian society prevent girls and

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women from articulating their menstrual needs. The problems of poor menstrual hygiene management have been ignored or misunderstood by the society as well the policy makers (Juyal et al, 2012).

Dasgupta & Sarkar (2008) also state that menstruation and menstrual practices are still clouded by taboos and socio cultural restrictions resulting in adolescent girls remaining ignorant of the scientific facts and hygienic health practices, which sometimes lead to adverse health outcomes .

Review of Literature

Drakshayani & Venkata (1994) assessed practices about menstruation among rural adolescent girls of high school in a sample of 64 adolescent girls in Guntur, Andhra Pradesh. Only 10 girls were using boiled and dried cloth as menstrual absorbent. Though almost all 64 girls received advice regarding menstrual hygiene from different sources, some of their practices were unhygienic. This shows that the mothers of these girls were lacking right knowledge and the same thing was transferred to their offspring. The girls should be educated about the significance of menstruation and development of secondary sexual characteristics, selection of a sanitary menstrual absorbent and its proper disposal through educational television programmes, school nurses / health personnel, compulsory sex education in school curriculum and knowledgeable parents.

Lawan et al (2010) conducted a study in Kano, North-western Nigeria about menstruation and menstrual hygiene amongst adolescent school girls. Most girls used sanitary pads as absorbent during their last menses, changed menstrual dressing about 1-5 times per day and three quarter increased the frequency of bathing. Dasgupta & Sarkar (2008) conducted a descriptive, cross sectional study about menstrual hygiene in rural health unit and training centre, Singur, West Bengal among 160 adolescent girls of a secondary school with the help of a pre-designed and pre-tested questionnaire. Out of 160 respondents, 108 (67.5%) girls were aware about menstruation prior to attainment of menarche. Mothers were the first informant regarding menstruation in case of 60 (37.5%) girls; 138 (86.25%) girls believed it as a physiological process, 78 (48.75%) girls knew the use of sanitary pads during menstruation and only 18 (11.25%) girls used sanitary pads during menstruation. For cleaning purpose, 156 (97.5%) girls used bath soap and water. Regarding restrictions practiced, 136 (85%) girls practiced different restrictions during menstruation. Menstrual hygiene, a risk factor for reproductive tract infection, is a vital aspect of health education for adolescent girls. Educational television programmers,

trained school nurses / health personnel, motivated school teachers and knowledgeable parents can transmit the vital message of correct menstrual hygiene to the adolescent girl.

Kumar & Srivastava (2011) in their study in Ranchi among 117 adolescent girls (aged 11-20 years) and 41 mothers from various communities and classes in residential colonies and urban slums concluded that cultural and social practices regarding menstrual depend on girl's education, attitude, family, environment, culture and belief.

Table 1: Criteria to assess the level of menstrual hygiene practices

Level of menstrual hygiene practices	Score	Percentage (%)
Excellent	31-40	76-100
Good	21-30	51-75
Average	11-20	26-50
Poor	0-10	0-25

Table 2: Distribution of urban and rural girls according to socio-demographic profile (N = 100)

Socio-demographic variables	Urban (n=50) f (%)	Rural (n=50) f (%)
Age (in years)		
13-14	11 (22)	20 (40)
15-16	35 (70)	22 (44)
17-18	04 (08)	08 (16)
Level of education		
IX Class	21 (42)	30 (60)
X Class	29 (58)	20 (40)
Religion		
Hindu	37 (74)	06 (12)
Sikh	12 (24)	40 (80)
Muslim	01 (02)	02 (04)
Others	-	02 (04)
Type of family		
Joint	22 (44)	13 (26)
Nuclear	28 (56)	37 (74)
Socio economic status (Income in Rs./year)		
<5000	15 (30)	42 (84)
5001-10000	27 (54)	08 (16)
10001-15000	05 (10)	-
>15001	03 (06)	-
Educational status of mother		
Illiterate	27 (54)	12 (24)
Elementary	11 (22)	28 (56)
Secondary	06 (12)	09 (18)
Senior secondary	03 (06)	-
Graduate and above	03 (06)	01 (02)
Educational status of father		
Illiterate	06 (12)	09 (18)
Elementary	17 (34)	22 (44)
Secondary	20 (40)	11 (22)
Senior secondary	06 (12)	08 (16)
Graduate and above	01 (02)	-
Working status of mother		
Working	22 (44)	09 (18)
Non-working	28 (56)	41 (82)

Omidvar & Begum (2010) in a cross-sectional study in South India on 350 students (academic year 2009-2010) covered unmarried students in the age group of 15-22 years. The authors concluded that healthy practices are important for health and well-being of individuals.

Manjula, et al (2011) conducted a cross-sectional study in pre-university colleges present in Davangere city, Karnataka on 362 students. Results showed that 68 percent of them attained menarche by 12 years of

age and 97 percent of them with normal menstrual flow. About 97 percent of them complained of dysmenorrhoea and 80 percent had taken treatment. About 60 percent of them used sanitary napkins during menstruation and knew the correct methods of disposal. Considering the needs and interest to use sanitary pads, it should be made available to all segments of society by social marketing.

Thakre & Sushama (2012) conducted a cross-sectional study in Saoner, Distt. Nagpur (MS) on 387 Jawahar Kanya school-going girls about menstrual hygiene practice girls from 8th and 9th standard. A pre-designed, pre-tested and structured questionnaire was used in the study for data collection. Significantly more (60.6%) urban girls were using sanitary pads as compared to rural (30.8%) girls ($p=0.001$). Cleaning of external genitalia was unsatisfactory in higher number of rural girls (79.4%) than urban girls (58.1%). Majority of the girls (77.8%) had one or the other problem related to menstrual cycle. Dysmenorrhoea in 61 percent, PMS in 55.8 percent and other 55.3 percent. Three (1%) girls had menstrual period for less than two days where as the bleeding of 27 (7%) subjects lasted for more than six days. Abnormal bleeding was reported by 35 (9%), 15 percent had irregular cycles and a few had missed their cycles.

Deo & Ghattargi (2005) in a cross-sectional study at Swami Ramadan Teerth Rural Medical College Ambajogi on 94 girls from urban school and 74 from rural school selected randomly found that 40 (42.5%) urban and 41 (55.4%) rural girls were aware about menstruation prior to attainment of menarche. In urban girls mothers was the main source of information about menstruation (27.5%), while it was the teacher in the rural counterparts (27.01%). Other sources were friend, relatives and books.

In a study in ZP High School, Ambelohale from rural area and Sharda Mandir Girls High Aurangabad on 189 rural and 132 urban girls of 8 to 10 standard Salve et al (2012) found that regularity of menstruation was better in rural girls i.e. 87 (94%) compared to urban girls i.e. 53 (56%). Percentage of using market available sanitary napkins was more in urban girls 56 (60%) compared to rural girls 6 (06%) whereas homemade sanitary napkins were used by 87 (94%) rural girls and 38 (40%) urban girls and this difference was statistically significant amongst rural girls; female teacher was the main source of knowledge 89 (47%) while it was mother in urban area 48 (36%). Knowledge about reproductive system, age was better amongst urban girls while sanitary facilities like attached toilets, full wall bathroom, sufficient water etc. were less in rural areas, differences being statistically significant.

Table 3 : Distribution of urban and rural girls according to menstrual profile (N = 100)

Menstrual profile variables	Urban f (%)	Rural f (%)
Onset of menarche (in years)		
12	10 (20)	03 (06)
13	20 (40)	24 (48)
14	16 (32)	20 (40)
15	04 (08)	03 (06)
Average duration of menstruation (in days)		
3-5	-	13 (26)
> 5	50 (100)	37 (74)
Type of sanitary protection material using		
Cotton	02 (04)	04 (08)
Cloth material	08 (16)	15 (30)
Sanitary pads	40 (80)	31 (62)
Informant regarding menstruation		
Parents	34 (68)	44 (88)
Siblings	03 (06)	-
Teachers	12 (24)	04 (08)
Friends	01 (02)	02 (04)
No. of pads used during menstruation (in a day)		
>5	-	01 (02)
3-5	48 (96)	28 (56)
<2	02 (04)	21 (42)
Dysmenorrhoea?		
Yes	30 (60)	31 (62)
No	20 (40)	19 (38)

Table 4 : Distribution of urban and rural girls according to their level of menstrual hygiene practices (N=100)

Level of menstrual hygiene practices	Urban f (%)	Rural f (%)
Excellent (31-40)	17 (34)	04 (08)
Good (21-30)	31 (62)	38 (76)
Average (11-20)	02 (04)	08 (16)
Poor (0-10)	0 (0)	0 (0)

Maximum Marks = 40; Minimum Marks = 0

Table 5: Comparison of menstrual hygiene practices among urban and rural school girls (N=100)

Group	n	Mean $\pm$ SD	Unpaired t-test	p-Value
Urban	50	28.24 $\pm$ 3.8	2.58	0.843NS
Rural	50	25.18 $\pm$ 0.59		

Maximum Marks = 40; Minimum Marks = 0;

NS- Non significant

Abdel-Hady E et al (2005) in a study at Mansoura, Egypt on menstrual hygiene among 664 adolescent schoolgirls of aged 14-18 years revealed that significant predictors of use of sanitary pads were availability of mass media at home, high and middle social class and urban residence. Use of sanitary pads may be increasing, but not among girls from rural and poor families and other aspects of personal hygiene were generally found to be poor. Instruction in menstrual hygiene should be linked to an expanded programme of health education in schools.

Objectives

The objectives of the study were to (a) assess the menstrual hygiene practices among adolescent girls (b) compare the menstrual hygiene practices (c) find out association between menstrual hygiene practices and selected demographic variables among adolescent girls of urban and rural schools of Ludhiana; (d) prepare information, education and communication regarding menstrual hygiene practices.

Materials and Methods

In this cross-sectional, community based study among adolescent girls in rural and urban field practice area of Dayanand Medical College and Hospital, Ludhiana (Punjab) two conveniently selected schools were: urban - Government senior secondary school, Haibowal Khurd, and rural - Government High School, Pohir, of district Ludhiana (Punjab). The schools were selected on the basis of availability of adolescent girls, permission to conduct the study and convenience in terms of distance. The population for the study was 100 adolescent girls (13-18 years) selected randomly from selected schools of District Ludhiana, 10 adolescent girls from each classes (6, 7, 8, 9 & 10) in both rural and urban schools. The group included only those girls who were present at the time of data collection and who were willing to participate in the study. Total two measures were used to collect data from the subjects.

A comparative design was used to assess the menstrual hygiene practices among adolescent girls of urban and rural schools of Ludhiana. Convenient sampling technique was used to draw the sample from target population based on inclusion and exclusion criteria.

Inclusion criteria: Adolescent girls of age group 13-18 years who were willing to participate in the study and who were available during data collection.

Exclusion criteria: Girls who were not willing to participate in the study and who were not available during data collection

Description of the tool: The tool and method for data

collection consisted of the following parts.

Part A: Structured Questionnaire to assess Socio-demographic profile (age, level of education, religion, type of family, socio-economic status, educational status of parents, working status mother and menstrual profile (onset of menarche, average duration of menstruation, what type of sanitary protection material you use during menstruation, who provide information regarding menstruation, number of pads used during menstruation period (in day), do you have dysmenorrhoea during menstruation);

Part B: Likert's scale to assess the menstrual hygiene practices of adolescents girls of urban and rural schools.

The content validation was done by nursing experts in the field of clinical nursing, nursing education and nursing research to validate the content and language. Tool was found complete in terms of content and clarity of language. Reliability of research tool was determined by test re-test method and tool was found to be reliable i.e. 0.89. Data was collected in March 2013 in rural and urban schools. Permission was taken from the Principals of urban and rural schools. A rapport was built with the girl students, the purpose of the study was explained to them and their written and verbal consents were obtained. Girls were interviewed for data with the help of established tool. Anonymity of subjects and confidentiality of information was maintained. It was ensured that there would be no interference in the privacy of subjects during whole study.

Data was analysed using descriptive and inferential statistics. Various statistical measures used for analysis were percentage and frequency distribution, t-test to compare the menstrual hygiene practices of adolescent girls of urban and rural schools and ANOVA and t-test to find out the association between menstrual hygiene practices and selected demographic variables of adolescents girls of urban and rural schools of Ludhiana.

Results

The subjects were interviewed to assess menstrual hygiene practices and comparison was done among urban and rural schools adolescent girls. Data was analysed as per objectives of the study (Tables 1 to 4).

Table 5 revealed that the mean score of menstrual hygiene practices of urban adolescent school girls was higher (28.24) than the mean score of menstrual hygiene practices of rural adolescent girls (25.18). The difference was found to be statistically non-significant at $p=0.05$ level of significance. Thus in spite of difference of school background (urban and rural) of adolescent girls no significant difference was found in their

mean score of menstrual hygiene practices.

Discussion

In present study majority of urban and rural adolescent girls had good menstrual hygiene practices (Tables 6-13). Similar study by Thakre SB (2012) at Nagpur, reported that rural and urban adolescents had inadequate menstrual hygiene practices.

Our study revealed that the mean score of men-

strual hygiene practices of urban adolescent girls was higher (28.24) than the mean score of menstrual hygiene practices of rural adolescent girls (25.18). The difference was statistically non-significant at $p=0.05$ level of significance. Findings are consistent with those of Salve SB (2012).

The study showed that there is no association between menstrual hygiene practices and selected demographic variables (age, level of education, religion, type of family, socio economic status, educational status of mother, educational status of father, working status mother) among adolescent girls of urban and rural schools of Ludhiana. These findings are also supported by Salve SB (2012) showing that there is no association between menstrual hygiene practices and selected demographic variables i.e. (age, religion, type of family and socio economic status) among rural and adolescent girls.

Limitations: Lack of large sample size may result in lack of representativeness and generalisability to the larger population. Moreover, the data was collected from selected schools of Ludhiana. A large geographical area based study is recommended to assess the menstrual hygiene practice among adolescent girls. Yet the study had a strong design and care was taken at every step to ensure the randomness in the sample and minimise bias in the findings.

Nursing Implications

1. Nursing Practice: Since there is a gross inadequacy in knowledge and practices regarding menstrual hygiene, nurses are able to make significant contribution to the adolescent girls in achieving good health.

2. Nursing Education: Nursing personnel working in various health setting should be given in-service education to update the knowledge and abilities in the area of menstrual education and practices.

3. Nursing Administration: The nursing administrator should organise educational programme for nursing personnel to further impart knowledge to adolescents. The Nurse administrator should plan for the budget and utilise the resources for training and follow-up of adolescents attending schools and colleges.

Table 6: Association of menstrual hygiene practices with age (N=100)

Age (in years)	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	F value	p-value	n	Mean $\pm$ SD	F value	p-value
13-14	20	25.16 $\pm$ 3.71			11	30.54 $\pm$ 2.58		
15-16	22	24.90 $\pm$ 4.96	0.242	0.786 ^{NS}	35	27.64 $\pm$ 4.08	2.73	0.75 ^{NS}
17-18	08	26.12 $\pm$ 3.48			04	27.20 $\pm$ 2.94		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 7: Association of menstrual hygiene practices with level of education (N=100)

Level of education	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	Unpaired t-test	p-value	n	Mean $\pm$ SD	Unpaired t-test	p-value
IX	30	24.53 $\pm$ 3.8	2.21	0.143 ^{NS}	21	29.31 $\pm$ 4.44	2.46	0.123 ^{NS}
X	20	26.15 $\pm$ 4.71			29	27.85 $\pm$ 3.00		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 8: Association of menstrual hygiene practices with religion (N=100)

Religion	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	F value	p-value	n	Mean $\pm$ SD	F value	p-value
Hindu	06	24.83 $\pm$ 4.11	0.718	0.546 ^{NS}	37	27.83 $\pm$ 3.46	0.866	0.427 ^{NS}
Sikh	40	25.02 $\pm$ 4.25			12	29.25 $\pm$ 4.93		
Muslim	02	29.50 $\pm$ 3.53			01	31.00 $\pm$		
Any other	2	25.50 $\pm$ 5.65			-	-		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 9 : Association of menstrual hygiene practices with type of family (N=100)

Type of family	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	Unpaired t-test	p-value	n	Mean $\pm$ SD	Unpaired t-test	p-value
Joint	13	24.78 $\pm$ 4.00	0.167	0.685 ^{NS}	22	29.04 $\pm$ 3.63	0.394	0.533 ^{NS}
Nuclear	37	25.33 $\pm$ 4.34			28	27.62 $\pm$ 3.94		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 10: Association of menstrual hygiene practices with socio economic status (N=100)

Socio-economic status	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	F value	p-value	n	Mean $\pm$ SD	F value	p-value
<5000	42	24.83 $\pm$ 4.33	1.79	0.186 ^{NS}	15	26.53 $\pm$ 4.71	1.93	0.138 ^{NS}
5001-10000	08	27.00 $\pm$ 3.20			7	29.32 $\pm$ 2.99		
10001-15000	-	-			05	28.00 $\pm$ 4.96		
>15001	-	-			03	27.00 $\pm$ 3.00		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 11: Association of menstrual hygiene practices with educational status of mother (N=100)

Educational status of mother	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	F value	p-value	n	Mean $\pm$ SD	F value	p-value
Illiterate	12	25.50 $\pm$ 3.84	0.636	0.596 ^{NS}	26	28.23 $\pm$ 3.27	1.60	0.179 ^{NS}
Elementary	28	25.25 $\pm$ 4.28			11	27.81 $\pm$ 5.01		
Secondary	09	24.11 $\pm$ 4.72			06	28.66 $\pm$ 3.44		
Senior secondary	-	-			03	30.66 $\pm$ 2.30		
Graduate and above	01	30.00			03	29.66 $\pm$ 3.51		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 12: Association of menstrual hygiene practices with educational status of father (N=100)

Educational status of father	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	F value	p-value	n	Mean $\pm$ SD	F value	p-value
Illiterate	09	26.50 $\pm$ 4.06	0.507	0.680 ^{NS}	06	29.83 $\pm$ 3.31	1.464	0.229 ^{NS}
Elementary	22	24.68 $\pm$ 3.94			17	27.00 $\pm$ 3.38		
Secondary	11	24.66 $\pm$ 5.56			20	29.19 $\pm$ 3.81		
Senior secondary	08	26.00 $\pm$ 3.07			06	26.33 $\pm$ 5.00		
Graduate and above	-	-			01	30		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

Table 13: Association of menstrual hygiene practices with working status of mother (N=100)

Working status of mother	Rural (n=50)				Urban (n=50)			
	n	Mean $\pm$ SD	Unpaired t-test	p-value	n	Mean $\pm$ SD	Unpaired t-test	p-value
Working	09	25.66 $\pm$ 3.64	0.951	0.334 ^{NS}	22	28.86 $\pm$ 3.27	0.700	0.407 ^{NS}
Non-working	41	25.07 $\pm$ 4.37			27	28.07 $\pm$ 3.96		

Minimum Marks = 0; Maximum Marks = 40; NS- Non-significant.

4. Nursing Research: In the areas of the menstrual hygiene. The nurse researchers can conduct studies to assess the effectiveness of self-care manual and health education modules for various age groups of adolescents.

Recommendations

A similar study can be conducted on a large study sample. The study can be conducted to compare the menstrual hygiene practices among the urban and rural residing females. Qualitative study can be planned to find the poor menstrual hygiene practices and its reasons in depth.

Conclusion

Majority of urban girls i.e. 31 (62%) and rural girls i.e. 38 (76%) had good menstrual hygiene practices. The mean score of menstrual hygiene practices of urban adolescent girls is higher (28.24) than the mean score of menstrual hygiene practices of rural adolescent girls i.e. 25.18 but the difference was found to be statistically non-significant at p=0.05 level of signifi-

cance. Also there was no association between menstrual hygiene practices and selected demographic variables among adolescent girls of urban and rural schools of Ludhiana, Punjab.

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