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## A comparative study on menstrual experiences of rural and tribal adolescent girls

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### Abstract

The normal phenomenon of menstruation is surrounded by lack of knowledge which leads to unhealthy practices. The present study aimed to study and compare the perceptions on different aspects of menstruation in rural and tribal adolescent girls. A cross sectional community based study was conducted in the rural areas of Varanasi district and tribal areas of West Garo Hills of Meghalaya among 480 school going adolescent girls in the age group of 12 to 18 years. Data was collected through pre-tested and self-structures interview schedule. The results revealed that awareness regarding menstruation prior to its occurrence was lacking among girls in both areas and the difference between the two settings was highly significant ( $P < 0.001$ ). Friends were the source of information about menstruation in the tribal areas while mothers were the first informants in the rural areas. Common problems faced during menstrual periods by respondents in both the areas were lower abdominal pain, tiredness and sadness. Majority of the rural girls used homemade sanitary pads and reused it. Significant differences in the hygienic practices was noted among girls in rural and tribal area. Rural girls faced more restrictions during menstruation as compared to the tribal areas.

**Keywords:** Adolescence, menstruation, hygiene, tribal

### Introduction

The adolescents constitute about 21% of the Indian population and are one of the age groups of vital importance. Adolescence has been considered as a special period that signifies the transition from childhood to adulthood. This is a time when the adolescent experiences not only physical growth and change but also a host of emotional, psychological and social changes. Situation of adolescent girls in India is worrisome as the stage itself is not given much importance, especially in the rural areas, where they form one of the vulnerable groups in relation to their health. Menstruation is one of the most important and unique phenomenon occurring in the life of an adolescent girls and in the Indian society, it is generally regarded as unclean and dirty. Isolation of girls and women during this period and improvements of restrictions have reinforced a negative attitude towards this phenomenon (Dhingra & Kumar, 2009, Thakre *et al.* 2011) [6, 19]. The vulnerability of the adolescent girls is coupled with lack of knowledge on matters related to health. They learn about reproductive health by observing the behavior of adults around them, by listening to peers and the older siblings and also through the media. This incorrect knowledge and ignorance is compounded by reluctance among parents and teachers to impart relevant information. (Jejeebhoy and Sebastian, 2003) [8]. It is very important to understand when and how the adolescent girls acquire the knowledge that will prepare them as parents and partners on marriage. Even information about physical maturation is often not disclosed within the family, on the assumption that the silence will convey the taboo nature of the topic, protect a child and encourage appropriate behavior. This results in vulnerability of adolescent girls for various health related mortalities and morbidities. This association between perceived reproductive morbidity and poor menstrual hygiene was significantly linked by studies done by Mathiyalagen *et al.* (2017) [12]. A major percentage of girls have scanty knowledge about menstruation until their first menstruation since the topic itself is considered as a taboo and is not discussed at homes (Patle and Kobde, 2014) [14]. Thus, most of the time the adolescent girls are unprepared in terms of knowledge, skills and aptitudes for managing the menstrual cycle.

Learning about menstruation and its related matters is a major concern and is a vital part of health education for adolescent girls so that they continue to maintain healthy hygiene habits throughout their adult life. Knowledgeable and healthy girls will make a good platform in building a disease free nation.

The study focuses on the experiences of adolescent girls in two different settings, i.e. tribal and rural areas, with respect to menstruation.

### Material and Methods

A cross-sectional, community based study was conducted in the rural villages of Varanasi district (Uttar Pradesh) and tribal areas of West Garo Hills district of Meghalaya, India. The total sample selected for the study was 480 that was calculated according to the formula  $n = z^2 \times (p \times q) / e^2$ . Taking the prevalence rate of 17.6% as awareness of physical changes during adolescence (Singh and Singh, 2012) the sample size was estimated to be 240. Thus a total of 480 adolescent girls were selected consisting of 240 adolescent girls from rural background and 240 from tribal background from various government schools of the selected district areas of Uttar Pradesh and Meghalaya. A list of secondary and senior secondary schools of respective blocks, i.e. Arajiline (U.P) and Rongram (Meghalaya) was obtained. Four government schools which had more than 100 girls students enrolled at secondary level, from each block, were finally selected randomly.

The principals of the schools were contacted and the importance of the study was discussed at length and the willingness of the participants were sought. Accordingly 60 adolescent girls were finally identified randomly from 8<sup>th</sup> to 12<sup>th</sup> standards of each school, thus making 240 girls from each state and consequently 480 girls for the study.

The data was collected with the help of a self-structured interview schedule which consisted of questions on general background of the respondents and practices regarding menstruation. Each participant, from the schools in both the areas, was contacted separately in the school and the desired information was sought. The data was coded, scored and compiled for final analysis. In addition to the frequencies and percentages, chi-square test was used through SPSS (version 17.0).  $P < 0.05$  was taken as statistically significant.

### Results

The background information from Table 1 reveals that majority of the respondents in rural and tribal areas were in the age group of 15 to 16 years. Most of the girls in both areas were studying 11<sup>th</sup> and 12<sup>th</sup> standards, i.e. above high school category and were first born in their families. Illiteracy was common among mothers in rural and tribal zones, although majority of the mothers studied till upper primary level (35.3% for rural and 32.8% for tribal areas).

Table 2 describes the age at menarche of rural and tribal participants and it can be seen that majority of the rural girls started menstruating between the ages of 13 to 14 years with a mean of 13.37 years. Most of the girls in the tribal area had an early menarche (50.8%) at the age between 11 to 12 years with an average age of 12.45 years. It can be observed that majority of the respondents in both groups across the two settings did not have any knowledge of menstruation before its occurrence, i.e. 78.7 per cent in rural and 66.2 per cent in tribal areas. This difference in knowledge regarding menstruation was validated significantly ( $P < 0.001$ ) between the two groups.

Table 3 depicts the menstrual history of respondents such as regularity of periods, duration of menstrual cycle, blood flow and its intensity. Majority of the respondents in both the areas

had regular menstrual periods, however, a little more than one third of the girls reported irregularity (37% in rural and 44.2% in tribal areas). Majority of the respondents in both areas reported the gap between two consecutive menstrual periods to be for 25 days (53.7% in rural and 59.1% in tribal areas). On comparison it was found that the difference was statistically significant ( $P < 0.001$ ) with more percentage of girls in tribal areas experiencing irregularities in the total days of menstrual periods. The duration of menstrual flow was generally found to be for three to five days for girls in both the groups. However, differences were observed where more percentage of tribal areas experienced periods for less than three days and the difference was statistically significant at 0.001 per cent level of significance.

Table 4 presents a comparative view of adolescent girls knowledge on source of menstrual blood and it can be seen that very few in rural (6.2%) and tribal (5%) areas knew the correct response of uterus to be the origin of source of menstrual blood. Majority of them had no knowledge on this aspect in both the settings.

Table 5 describes the different problems faced by respondents during menstruation. The most common physiological difficulties faced were pain in lower abdomen (82.5% in rural and 62.5% in tribal areas), weakness / tiredness (77.5% in rural and 58.7% in tribal areas) and backache (68.7% in rural and 50.4% in tribal areas). Some of the psychological problems were also reported by the respondents in both settings and they were sadness / depression, inability to concentrate on work and irritability.

The hygienic practices followed during menstrual periods by the respondents are described in Table 6. Home-made sanitary pads were used by the girls in the rural areas (67.2%) whereas readymade napkins were used among the tribal areas by most of the respondents. This difference was found to be highly significant ( $P < 0.001$ ). Majority of the girls in both the areas changed their pads twice a day (69.6% in rural and 63.3% in tribal areas). Significant differences ( $P < 0.001$ ) in the practice of reusing the menstrual pads was found where more percentage of tribal respondents (24.6%) reused their pads during menstruation.

A variety of reactions were noted from the respondents when they had their periods for the first time and the results have been presented in Table 7. Nervousness and fear were common reactions of girls in both the areas at time when their menstrual periods started for the first time. Menstruation girls experience many types of restrictions especially for religious activities. This was evidenced in the present study (Table 7) as majority of the girls in rural areas were restricted for religious activities like praying, going to temple, etc. They were also segregated (59.2%) from others in addition to not being allowed to do kitchen work or enter the kitchen premises.

The effect of socio-demographic factors on levels of menstrual practices of girls have been given in Table 8. It can be seen that the background of the girls, i.e. rural or tribal seemed to affect their menstrual practices very significantly as the girls in the tribal areas displayed low levels of menstrual practices than the girls staying in the rural areas. Other factors like education and age of respondents were also found to be significant with the level of menstrual practices.

**Table 1:** Socio-demographic information of the respondents in rural and tribal areas

Variables	Rural (n = 240)	Tribal (n = 240)
<b>Age of the respondents</b>		
12 to 14 years	63 (26.3)	72 (30.0)
14 to 16 years	110 (45.8)	102 (42.5)
16 to 18 years	67 (27.9)	66 (27.5)
<b>Education level of the respondents</b>		
Below High school level	81 (33.8)	90 (37.5)
High School level	56 (23.3)	53 (22.1)
Above high school level	103 (42.9)	97 (40.4)
<b>Birth order of respondents</b>		
First and second born	125 (52.0)	108 (45)
Third and fourth born	94 (39.1)	100 (41.7)
More than fourth position	21 (8.7)	32 (13.3)
<b>Mother's education</b>		
Illiterate	55 (23.1)	42 ((18.1)
Primary level	40 (16.8)	36 (15.5)
Upper primary level	84 (35.3)	76 (32.8)
High school level	43 (18.1)	46 (19.8)
Above high school level	16 (6.7)	32 (13.8)
<b>Family size</b>		
Small (1 to 4 members)	12 (5.0)	27 (11.2)
Medium (5 to 7 members)	142 (59.2)	176 (79.3)
Large (more than 7 members)	86 (35.8)	37 (15.5)

**Note:** Figures in parenthesis denote percentages

**Table 2:** Age at menarche of respondents of rural and tribal backgrounds

Variables	Rural (n = 240)	Tribal (n = 240)
<b>Age at menarche (in years)</b>		
9 to 11	1 (0.42)	10 (4.2)
11 to 12	60 (25.0)	122 (50.8)
12 to 14	158 (65.8)	99 (41.2)
Above 14	27 (11.2)	9 (3.7)
<b>Awareness about menstruation prior to menarche</b>		
Yes	51 (21.3)	82 (34.2)
No	189 (78.7)	159 (66.2)

**Note:** Figures in parenthesis denote percentages

**Table 3:** Aspects of menstrual history of rural and tribal respondents

Aspects	Rural (n = 240)	Tribal (n = 240)	P value
<b>Knowledge regarding menstruation prior to its occurrence</b>			
Yes	51 (21.3)	82 (34.2)	< 0.001**
No	189 (78.7)	159 (66.2)	
<b>Regularity of periods</b>			
Irregular	89 (37.0)	106 (44.2)	< 0.01*
Regular	151 (62.9)	134 (55.8)	
<b>Duration of menstrual cycle</b>			
Before 25 days	129 (53.7)	142 (59.1)	< 0.001**
25 to 27 days	17 (7)	40 (16.7)	
28 to 20 days	59 (24.5)	28 (11.7)	
More than 30 days	35 (14.5)	30 (12.5)	
<b>Duration of blood flow</b>			
Less than 3 days	43 (17.9)	56 (23.3)	< 0.001**
3 to 5 days	132 (55.0)	105 (43.7)	
5 to 7 days	43 (17.9)	41 (17.1)	
More than 7 days	22 (9.2)	38 (15.8)	

**Note:** Figures in parenthesis denote percentages

**Table 4:** Knowledge of respondents on source of menstrual blood

Responses	Rural (n = 240)	Tribal (n = 240)	P value
No knowledge	107 (44.5)	147 (61.2)	< 0.001**
Stomach	34 (14.2)	48 (20.0)	
Urinary bladder	62 (25.8)	26 (10.8)	
Vagina	22 (9.2)	7 (2.9)	
Uterus	15 (6.2)	12 (5.0)	

**Note:** Figures in parenthesis denote percentages

**Table 5:** Physiological and psychological problems faced by rural and tribal respondents during menstrual periods

Aspects	Rural (n =240)	Tribal (n =240)	Statistical test
Pain in lower abdomen	198 (82.5)	150 (62.5)	P= 0.000***
Weakness / tiredness	186 (77.5)	141 (58.7)	P= 0.000***
Backache	165 (68.7)	121 (50.4)	P= 0.000***
Body ache	116 (48.3)	107 (44.5)	P= 0.044
Pain in thighs / legs	104 (43.3)	67 (27.9)	P= 0.000***
Loss of appetite	99 (41.2)	46 (19.2)	P= 0.000***
Sadness	125 (52.0)	89 (37.0)	P= 0.000***
Irritability	117 (48.7)	70 (29.2)	P= 0.000***
Nervousness	85 (35.4)	67 (27.9)	P=0.000***
Inability to concentrate on work	153 (63.7)	80 (33.3)	P= 0.000***

**Note:** Figures in parenthesis denote percentages

**Table 6:** Hygienic practices of respondents

Aspects	Rural (n = 240)	Tribal (n = 240)	P value
<b>Material used</b>			
Homemade pads	163 (67.2)	87 (36.3)	< 0.001**
Readymade pads	122 (50.8)	181 (75.7)	
<b>Change of napkins in a day</b>			
Once	37 (15.4)	43 (17.9)	< 0.001**
Twice	167 (69.6)	152 (63.3)	
More than twice	10 (4.2)	44 (18.3)	
As per need	26 (10.8)	2 (0.8)	
Reuse of pads	53 (22.0)	59 (24.6)	< 0.001**
<b>Bathing during periods</b>			
Once a day	149	151	< 0.001**
Twice in a day	71	79	
No bathing	20	10	

**Note:** Figures in parenthesis denote percentages

**Table 7:** Emotional Reactions of respondents at the time of menarche

Aspects	Rural (n = 240)	Tribal (n = 240)
Nervousness	132 (55.0)	97 (40.4)
Fear	84 (35.0)	119 (49.5)
Sadness	25 (10.4)	57 (23.7)
Crying	40 (16.7)	34 (14.2)
Feeling bad	56 (23.3)	17 (7.0)

**Table 8:** Socio-demographic factors and Levels of menstrual practices of respondents

Socio-demographic variables	Levels of menstrual practices				Chi square value
	Low (n = 128)	Average (n = 128)	High (n = 128)	Total (N=480)	
<b>Background of respondents</b>					
Rural	49	133	58	240	16.702***
Tribal	79	132	29	240	
<b>Education of Respondents</b>					
Below High school	42	95	34	171	10.450* @5% level
High school	19	67	23	109	
Above high school	67	103	30	200	
<b>Age group of respondents</b>					
12 to 14 years	35	73	25	133	10.469* @5% level
15 to 16 years	48	117	48	213	
17 to 18 years	45	75	14	134	
<b>Age of mothers</b>					
Upto 40 years	75	135	39	249	3.742 NS
41 to 50 years	47	109	39	196	
Above 50 years	5	15	6	26	
<b>Education of mothers</b>					
Illiterate	27	51	19	97	12.372NS
Primary	15	45	14	74	
Upper Primary	41	93	25	159	
High school	27	48	13	88	
Intermediate	13	12	6	31	
Graduate	3	10	4	17	
<b>Family size</b>					
Small	10	21	7	38	1.718 NS

Medium	68	137	39	244	
Large	50	107	41	198	
<b>Birth order</b>					
First	32	63	17	112	0.952 NS
2 <sup>nd</sup> and 3 <sup>rd</sup>	60	126	43	229	
Above 3	36	76	27	139	

## Discussion

Menarche is an important milestone in the process of development and marks the beginning of many physiological and psychological changes in the lives of adolescent girls. The age at which girls have their first periods is of significant matter. The results of the present study are in conformity with the findings of Savanthe *et al.* (2016) [18] who found the mean age to be 13.26 years and studies done by Juyal *et al.* (2012) [10], Ray *et al.* (2011) [17] and Paria *et al.* (2014) [13] reported similar findings.

The knowledge regarding menstruation prior to its onset should be provided to young girls undergoing pubertal changes. But in today's times girls are still devoid of this type of information and as a result the first menarche comes as a shock to many of them. The reactions of the girls at the time of their first menstruation were sought and nervousness and fear were commonly experienced reactions of girls in both the areas. These reactions came as a result of non-awareness of girls which was validated by the studies of Johnson *et al.* (2014) [9] and Ramchandra *et al.* (2016) who reported fear, anxiety and negative reactions among the adolescent girls. In the present study it was seen that more percentage of tribal girls knew about menstruation than the rural girls and the difference might be because of their different socio-cultural settings as the tribal families are generally known to be open in nature and menstruation may not be considered as a taboo topic. Studies by Kansal *et al.* (2016) [11] and Savanthe *et al.* (2016) [18] found the awareness regarding this aspect was less than 30 per cent in their researches.

The source of information about menstruation was mainly mothers in both the settings but in the tribal areas, friends were also one of the information providers and they discussed about menstruation among their peers more than the girls in the rural areas. Preeti *et al.* (2015) [15] and Thakre *et al.* (2011) [19] found the mothers to be the first informants about menstruation. Apart from this, one of the major groups that emerged in this context was of friends particularly in the tribal areas which is confirmed by the studies of Ejik *et al.* (2016) [7] and Kansal *et al.* (2016) [11] who observed that friends and sisters played the second major role in informing the young girls about menstruation prior to its occurrence.

During the process of growing up it is generally observed that adolescent girls have less awareness about their bodies as they are shy to discuss even with their mothers. A lot of misconceptions prevailed among girls regarding the physiology of menstruation and more importantly uterus as the organ where the menstrual blood originates. The results of the present study are supported by researches of Ejik *et al.* (2016) [7] and Amirtha *et al.* (2013) [2] who found that knowledge about the organ and source of menstrual blood was poor among the respondents.

Physical discomforts and other related problems during periods may have an adverse effect on the performance of girls. The present study found physiological and psychological problems faced by girls in both areas and is supported by researches done by Preeti *et al.* (2016) [15], Chauhan and Kodnani (2016) [4] and Agarwal and Agarwal (2010) [1]. The psychological difficulties might be due to imposition of various restrictions during

periods and hence the whole menstruation process may be considered as a burden.

One of the major aspects involving hygiene maintained during periods is the habit of reusing menstrual pads. Reuse of homemade sanitary pads among adolescent girls is an important issue in the concept of menstrual hygiene as this can profoundly affect their health. Significant differences in the practice of reusing the menstrual pads were found where more percentage of tribal respondents reused their pads during menstruation. The results are in conformity with researches by Dasgupta and Sarkar (2008) [5], Juyal *et al.* (2012) [10] and Paria *et al.* (2014) [13] who found the usage of cloth pads and reusing them was a common phenomenon among girls.

Menstruating girls experience many types of restrictions especially for religious activities. This was evidenced in the present study and the findings are confirmed by the studies done in other parts of country where common restrictions included religious, food related, touching people, cooking, playing and household work (Ejik *et al.* 2016 [7], Bobhate and Shrivastava 2011 [3] and Paria *et al.* 2014) [13].

## Conclusion

Menstrual experiences are one of the important issues revolving the health of adolescent girls. These have effects not only on the physiological and reproductive issues but also on psychological and mental health of the adolescent girls. The present study revealed that awareness about menstruation and related issues were lacking among girls in both rural and tribal areas. Hygienic practices were found to be unsatisfactory among girls in both the areas. There is a need for implementation of more interventional programmes focusing on the reproductive health of the adolescent girls. Mothers in the rural and tribal areas are to be sensitized more so that they could provide the needful and correct information to their daughters.

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