

## ORIGINAL ARTICLE

**Impact of menstrual awareness and knowledge among adolescents in a rural area**Bhavna Langer<sup>1</sup>, Remia Mahajan<sup>2</sup>, Rajiv Kumar Gupta<sup>3</sup>, Rashmi Kumari<sup>4</sup>, Rayaz Jan<sup>5</sup>, Richa Mahajan<sup>6</sup><sup>1</sup>Lecturer, <sup>2</sup>Ex PHD Scholar, <sup>3</sup>Associate Professor, <sup>4</sup>Lecturer, <sup>5</sup>Demonstrator, <sup>6</sup>PG Scholar, Department of Community Medicine, Government Medical College, Bakshinagar, Jammu Tawi, Jammu and Kashmir, India

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**Background:** Socio-cultural factors have a bearing on women's attitude towards menstruation. Health care providers should be aware of how women react to menstruation while providing health care. **Aims & Objectives:** To elicit menstrual awareness and knowledge of the rural adolescent girls and assess how this awareness, knowledge and demographics influence their menstrual attitude. **Methodology:** A community based descriptive cross-sectional study was undertaken among 245 adolescent school going girls in a rural area. Adolescent Menstrual Attitude Questionnaire (AMAQ) was used as a data collection device. Data were compared by using SPSS (ver. 20.0) at the level of 0.05. Results: At menarche, 59.9% adolescents were aware of menstruation and in 3/4<sup>th</sup> of them, mothers were the source of information. There was a statistically significant effect of menstrual awareness (yes or no) and menstrual knowledge (nil, partial and complete) on the combined dependent variables ( $F(6,238)=9.0$ ,  $p= 0.000$ , Wilk's Lambda=0.81, partial eta square=0.29 and  $F(6,237)=8.01$ ,  $p= 0.000$ , Wilk's Lambda=0.69, partial eta square=0.20 respectively). Older adolescents had favorable attitude towards menstruation in three significant dimensions i.e. living with menarche, openness and acceptance. Significant effect of mother's educational level was observed on five dimensions of menstrual attitude. Conclusion: Menstrual attitude is significantly affected by menstrual awareness and knowledge. Demographics too contributed in bringing positive attitude. There is a need to plan menstrual health education programme for adolescent girls and their mothers.

**Key Words**

Menstrual attitude; Awareness; Knowledge; Rural adolescent girls; Menarche

**Introduction**

The phenomenon of menstruation which heralds with onset of puberty is experienced by every female till menopause (1,2,3). Across the world in many cultures, there are restrictions, certain rules and changed expectations from females at this time of biological development. In India too, this time is considered dirty and associated with taboos which affect the education and daily activities of adolescent girls especially in rural areas (4,5).

In rural areas adolescent girls often have a low level of knowledge about menstruation along with

traditional practices bound in socio-cultural milieu (6). At menarche low level of awareness is clubbed with unpleasant and tumultuous experiences (7,8,9,10). The rural adolescents lack access to correct information due to social prohibitions with parents also not discussing these issues in open (11). It often leads to lack of self-expression and mobility (12).

Knowledge and awareness shape our attitude towards any concept or construct and menstrual knowledge and awareness is hopefully going to have positive influence on attitude and resultant

behaviour. Although many studies have been conducted on KAP regarding menstruation among rural adolescents but studies focusing primarily on attitudes in relation to various variables are very few. This information will assist the health care providers in planning services to the adolescent girls.

### Aims & Objectives

1. To elicit menstrual awareness and knowledge of the rural adolescent.
2. To find out how this Knowledge, awareness and demographics influence their menstrual attitudes.

### Material and Methods

**Sample:** This cross-sectional descriptive one point analysis was carried out in a rural field practice area of a Tertiary care institution in North India, after obtaining permission from institutional ethical committee. The participants in this study consisted of 245 rural adolescent girls who have reached puberty and experiencing menstrual cycles. The sample was recruited from the schools in two rural subdivisions, using purposive sampling. The participants were uncompensated.

**Procedure:** Participants were contacted in their school settings and the survey questionnaire was administered only after taking prior consent from their parents and school principals. Four research assistants were trained to administer the survey questionnaire for explaining the purpose of the study and translating the questionnaire items in their comprehensible local dialect, wherever necessary.

#### Instruments:

1. A plain language explanatory statement (PLS). The PLS was designed to inform the participant about the aims of the study, as well as the risks and benefits associated with participation. The PLS was followed by consent agreement by the participation and only those who agreed were allowed to proceed with the survey questionnaire.
2. A set of seven non-identifying open-ended demographic questions relating to age, class in which they study, parental educational and occupational status and religion.
3. A set of fourteen open-ended questions gauging the age of onset of menarche, menstrual awareness, menstrual knowledge, hygiene practices, and restrictions imposed during menstruation.

4. The Adolescent Menstrual Attitude Questionnaire (AMAQ) by Morse et al, (1993) (13) The AMAQ is a reliable, valid and age-appropriate instrument to measure adolescent responses to menarche. It is a 5-point Likert scale (with six sub-scales) with versions for pre- and postmenarcheal girls. This study utilized the postmenarcheal version consisting 58 items, gauging the six dimensions of menarche: positive feeling (11 items), negative feeling (18 items), living with menarche (8 items), openness (5 items), acceptance of menarche (7 items) and menstrual symptoms (9 items). The Cronbach's alpha reliability for the current study was 0.76.

After collecting the forms, a ten minutes talk on menstruation was given by the interviewers followed by discussion

#### Phase 1: coding & categorizing

Before proceeding with the analysis, coding and categorizations for various variables were done as the questions were open-ended. A variable 'Age\_cat' was created by grouping the participants according to their ages into the two categories: (1) 13-15 years as younger adolescents & (2) 16-19 year as older adolescents. Similarly, Mother edu\_cat (categorizing mother's education) and Motheroccu\_cat (categorizing mother's occupation) were formed. The four categories for mother's education were 'illiterate', 'upto middle', 'upto secondary' and 'higher sec and above'. The two categories for mother's occupation were 'housewife' and 'workingwoman'. Appropriate numeric coding was done for the categories defined to test the hypothesis.

#### Phase 2: Statistical analysis

The data was checked thoroughly for its consistency and the final data set was subjected to appropriate statistical tools for analysis using SPSS (version 20). Demographic variables were presented as percentages. A probability of less than 0.05 was considered statistically significant.

### Results

A total of 245 adolescent girls participated in the study, of which 148 (60.4%) were older adolescents. The mean age of the sample was  $15.91 \pm 1.61$ . Mothers of 93.9% adolescents were housewives and their literacy status was, illiterate 11.8%, upto middle 37.6%, upto secondary 40% and higher secondary and above 10.6%. The mean age at menarche was  $13.42 \text{ years} \pm 1.55$ . 59.9% adolescents

were aware of menstruation at menarche and different sources of this awareness were: mothers (74.01%), friends (14.96%), sisters and teachers (4.72% each) and books (1.57%). The entire sample agreed that sanitary napkins were the ideal material that should be used during menstruation, yet 10.6% reported that they used a piece of cloth sometimes. All of the girls reported that they adopted menstrual hygiene, cleaned genitalia with either soap or only with water, changed pads at regular intervals and disposed them in dustbin. Only 5 (2%) reported that they buried the used napkins. The mean number of absorbents used was  $7.36 \pm 3.04$ . 118 (48.2%) girls were not aware of menstruation.

Only 35 (14.2%) adolescents reported that no restrictions were imposed during menstruation. Among the top most restriction imposed, the respondents reported, visiting a religious place or place of worship (71.4%), followed by restrictions on some tabooed food (sour food, pickle, curd) (11.02%), not washing hair (2%) and lastly, restriction on indulging in strenuous physical activities (1.2%). [Table 1](#) depicts the six dimensions of menstrual attitude in low, moderate and high categories.

MANOVA were performed to investigate the effect of menstrual knowledge and awareness on menstrual attitude. The six dependent variables were: positive feelings, negative feelings, living with menarche, openness, acceptance of menarche and menstrual symptoms. Preliminary assumption testing was conducted to check for normality, linearity, univariate and multivariate outliers, homogeneity of variance-covariance matrices, and multicollinearity, with no serious violations noted.

There was a statistically significant effect of menstrual awareness (yes or no) on the combined dependent variables ( $F(6,238)=9.0$ ,  $p=0.000$ ; Wilk's Lambda=0.81; partial eta square=0.29). Analysis of each individual dependent variable, using Bonferroni adjusted alpha level of 0.017, showed that there was no contribution of menstrual symptoms ( $F(1,243)=0.38$ ,  $p=0.54$ ) ([Table 2](#)).

Menstrual knowledge (nil, partial and complete) had a statistically significant effect on the combined dependent variables ( $F(6,237)=8.01$ ,  $p=0.000$ ; Wilk's Lambda=0.69; partial eta square=0.20). Analysis of each individual dependent variable using Bonferroni adjusted alpha level of 0.017, showed that the three groups differed in terms of positive feeling ( $F(2,242)=24.79$ ,  $p=0.000$ ), negative feeling ( $F(2,242)=7.43$ ,  $p=0.009$ ), openness ( $F(2,242)=13.37$ ,

$p=0.000$ ) and acceptance ( $F(2,242)=17.39$ ,  $p=0.000$ ) ([Table 3](#)).

Interaction between menstrual awareness and menstrual knowledge, too came out to be significant ( $F=2.7$ ,  $p=0.004$ ; Wilk's Lambda=0.71; partial eta square=0.19). Only acceptance ( $F=3.34$ ,  $p=0.008$ ) and openness ( $F=4.21$ ,  $p=0.002$ ) contributed in the interaction process.

Further, independent sample t-tests (for categories of age) and ANOVA test (for mother's educational level) were conducted which suggest that older adolescent had favorable attitude towards menstruation on the three significant dimensions ([Table 4](#)).

There was a significant effect of mother's educational level on five out of six dimensions of menstrual attitude whereas there was no significant effect observed for negative feelings ( $F(3,241)=0.90$ ,  $p=0.44$ ) ([Table 5](#)). Tukey's post-hoc comparisons showed that the two extreme groups-illiterate Vs higher secondary to graduation significantly differed in all significant dimensions, with girls of better educated mothers having more favorable menstrual attitude than those of uneducated mothers.

## Discussion

The current study added to the existing knowledge regarding menstrual awareness, knowledge and their association to menstrual attitude. Variables like age and mother's educational level also brought significant differences in menstrual attitude. The mean age of attaining menarche was  $13.42 \pm 1.55$  years, which was almost similar to other studies done in different parts of India (14,15,16,17). Majority (74.1%) reported mother as the main source of information and inculcation of menstrual habits which is in accordance with previous studies (14,16). The common restrictions imposed were in line of agreement to other studies(15,16,18). The key feature of the current study was that it identified that having prior menstrual awareness and knowledge influenced significantly in shaping favourable menstrual attitude which concurs with the result of an Egyptian study(19). Older adolescents had more positive and favourable attitude regarding menstruation which could be an outcome of biological maturation and experience as one progresses into adulthood. In the current study respondents of illiterate mothers had less favourable menstrual attitude. Various studies have reported that young girls often confide with their mothers,

more so at the time of distress (20,21). Better educated and informed mothers are in a position to provide more stimulating environment, and share experiences without inhibitions so that young girls perceive menstruation as part of the natural biological change important for reproduction in every women. On the other hand, mothers with less factual knowledge may inculcate the notion of taboo or curse in their daughters. During the short IEC activity and discussion that followed the data collection, it was found that girls had apprehensions regarding taking bath, washing hair, visiting doctor in case of irregular periods or in case of any menstrual symptoms. The finding is important in view of the fact that lack of hygiene during menstruation results in infections as reported by various studies (12,22,23,24). Besides infections, dysmenorrhoea may also have bearing on daily activities as reported by some authors (25). So the need for correct knowledge is altogether emphasized.

### Conclusion

The current study shows that adolescent girls age, education of the mothers, menstrual awareness and knowledge had significant impact on their menstrual attitude.

### Recommendation

It is recommended that school curriculum should be updated to include this important health issue. The stake holders including health professionals should design programmes and initiate awareness campaigns for mothers of adolescents in pre-menarche stage keeping social, environmental and cultural factors in mind. To prepare the girls psychologically the role of school teachers in counselling should be reinforced.

### Limitation of the study

A non-probable sample comprising a small portion of population of adolescent girls with cross sectional nature of data limits the relevance of results in larger population and also the ability to make causal inferences.

### Relevance of the study

The study would be relevant to the Health and Medical Education department so as to sensitize the health professionals regarding adolescent menstrual issues and also the Education department to impart timely and relevant information to the adolescent girls and their mothers.

### Authors Contribution

BL: conception, design, collection of data, analysis and interpretation of data, literature search, drafting and critical revision of manuscript. RM: conception, design, analysis and interpretation of data. RKG: interpretation of data, literature search, drafting and critical review of final manuscript. RK: literature search, drafting and review of manuscript. RJ: collection of data, literature search and drafting. RIM: collection of data, analysis and drafting.

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**Tables**

**TABLE 1 DESCRIPTIVE REGARDING THE CATEGORIZATION OF SIX DIMENSIONS OF MENSTRUAL ATTITUDE (LOW, MODERATE AND HIGH) OF RURAL ADOLESCENT GIRLS (N=245)**

Dimensions of menstrual attitude	Low n(%)	Moderate n(%)	High n(%)
Positive feeling	126(51.5)	89(36.3)	30(12.2)
Negative feeling	75( 30.6)	148(60.4%)	22(9.0%)
Living with menarche	28(11.4%)	103( 42.1)	114( 46.5)
Openness	35( 14.3)	124(50.6)	86( 35.1)
Acceptance	37( 15.1)	105( 42.9)	103( 42.0)
Menstrual symptoms	16(6.5%)	173( 70.6)	56(22.8)

**TABLE 2 DIFFERENCES BETWEEN RURAL ADOLESCENT GIRLS WITH AND WITHOUT PRIOR MENSTRUAL AWARENESS ON DIMENSIONS OF MENSTRUAL ATTITUDE (ONE WAY MANOVA) (N=245)**

Menstrual attitude	Unaware participants (n=118)		Aware participants (n=127)		Wilk’s Lamda	F value	Univariate outcome F
	Mean	SD	Mean	SD			
Positive feeling	20.43	7.36	25.45	8.36	.81**	9.0	12.77**
Negative feeling	43.36	8.57	40.19	9.64			5.05**
Living with menarche	24.50	5.38	26.38	4.78			16.42**
Openness	13.52	3.37	15.06	3.21			14.34**
Acceptance	18.91	5.51	21.78	5.27			18.52**
Menstrual symptoms	25.41	4.74	24.92	3.99			.38

N=245 \*\*p<.01 \*p<.05

**TABLE 3 DIFFERENCES AMONG RURAL ADOLESCENT GIRLS WITH REGARD TO MENSTRUAL KNOWLEDGE ON DIMENSIONS OF MENSTRUAL ATTITUDE (ONE WAY MANOVA) (N=245).**

Menstrual Attitude	Nil knowledge group (n=115)		Partial Knowledge group (n=18)		Complete knowledge group (n=112)		Wilk's Lamda	F value	Univariate outcome F
	Mean	SD	Mean	SD	Mean	SD			
Positive feeling	22.71	8.00	22.54	8.01	28.17	9.95	.69	8.01	24.79**
Negative feeling	39.88	9.33	43.45	9.23	44.28	9.95			7.43**
Living with menarche	23.45	4.38	22.50	4.23	26.83	5.30			1.80
Openness	13.07	3.06	14.17	3.89	17.61	3.12			13.37**
Acceptance	18.72	5.58	19.83	4.92	22.37	5.01			17.39**
Menstrual symptoms	24.54	3.86	22.06	2.97	23.44	4.92			1.03

N=245 \*\*p<.01 \*p<.05

**TABLE 4 COMPARISON OF SIX DIMENSIONS OF MENSTRUAL ATTITUDE BETWEEN YOUNGER AND OLDER RURAL ADOLESCENTS GIRLS.**

The six dimensions of	Younger adolescents ( n=97)		Older adolescents (n=148)		t value
	Mean	SD.	Mean	S.D.	
Menstrual attitude					
Positive feeling	23.73	8.94	22.57	7.77	1.07
Negative feeling	40.51	9.45	42.70	9.01	1.83
Living with menarche	23.44	4.52	25.90	5.26	3.78**
Openness	12.75	3.11	15.34	3.14	6.32**
Acceptance	18.79	5.31	21.45	5.49	3.74**
Menstrual symptoms	24.33	3.85	25.05	4.71	1.26

N=245 \*\*p<.01 \*p<.05

**TABLE 5 COMPARISON OF THE SIX DIMENSIONS OF MENSTRUAL ATTITUDE AMONG RURAL ADOLESCENT GIRLS WITH REGARD TO THEIR MOTHER'S EDUCATIONAL LEVEL IN TERMS OF F VALUE**

Dimensions of menstrual attitude	Sum of squares	Df	Mean square	F ratio	P
Positive feeling	1203.54	3	401.18	6.27**	.000
Negative feeling	229.90	3	76.64	.90	.44
Living with menarche	495.30	3	165.10	6.77**	.000
Openness	495.30	3	165.10	6.77**	.000
Acceptance	351.62	3	117.21	3.92**	.009
Menstrual symptoms	287.78	3	95.93	5.21**	.002

N=245 \*\*p<.01 \*p<.05