

## Original Research Article

# Exploring the dynamics of menstrual health and hygiene management among adolescent girls in rural schools of Mysuru district, Karnataka

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## ABSTRACT

**Background:** Poor knowledge and poor practice in menstrual health and hygiene management results in unhealthy practices which in turn impacts on overall health of the girl child resulting in increased reproductive tract infection and inhibiting the girl's scholastic performance.

**Methods:** A school based cross-sectional study was conducted among 3 randomly selected rural schools. Adolescent girls in 8th to 10th standards, who have attained menarche, were included in the study and surveyed using a pretested self-administered questionnaire to evaluate their knowledge, perception and practices related to menstrual health and hygiene management. Data was analyzed using SPSS v22 (IBM Corp, Armonk, NY, USA).

**Results:** Mean age was 14.32(±0.98) years and mean age at menarche was 12.74 (±1.11) years. 51.6% knew about menstruation at menarche. 57.5% knew about sanitary pad, 21.6% knew that hormones as the reason for menstruation and 5.2% marked uterus as the organ responsible for menstruation. 63.4% of the participants perceived that menstruation is a normal & healthy part of life. 83.7% were using sanitary pad, 25.5% flush the menstrual material in the toilet as a disposal method.

**Conclusions:** 21.6% of the participants were found to have good knowledge about menstruation, 63.4% of the participants feel that menstruation is a normal & healthy part of life and 83.7% use sanitary pads. Hence this study emphasizes the need of educating the adolescent girls regarding MHHM.

**Keywords:** Adolescent, Knowledge, Menstrual health, Menstrual hygiene, Perception, Rural India

## INTRODUCTION

Adolescence and puberty are a time of intense physical and emotional change for young generation and puberty marks a transition between childhood and adulthood that impacts adolescents' physical, emotional and social wellbeing.<sup>1</sup> The World Health Organization (WHO) defines adolescents as individuals between 10 and 19 years of age.<sup>2</sup> Adolescents constitute about 21% of the total population in India.<sup>3</sup> Girls start to menstruate typically between the ages of 10 to 19 years, i.e., during adolescence and Menstruation is defined as monthly

occurrence when blood and tissue from uterus comes out of the vagina. During this time, they experience changes physically like breast development, wider hips and development of body hair and emotionally due to hormonal changes. Menstruation continues until menopause, usually between the late forties and mid-fifties. Menstruation is sometimes known as "menses" or a "menstrual period." The menstrual cycle is usually around 28 days but can vary from 21 to 35 days and bleeding generally lasts between two and seven days, with some lighter flow and some heavier flow days. Maintaining good practices of menstrual health and

hygiene management (MHHM) during this period is crucial for ensuring a healthy and sustainable lifestyle in the long run. Prioritizing good hygiene and health practices from an early age significantly contributes to the achievement of Sustainable Development Goal 3 (SDG 3) ensuring good health and well-being for all. Research across the world has shown that girls in low-resource settings face many challenges managing menstruation. These challenges have numerous causes including inadequate water and sanitation facilities at school, limited access to effective, hygienic materials for menstrual management and inaccurate information about menstruation and the biology of puberty.<sup>1</sup> Menstruation is not a sickness, but if not hygienically managed, it can result in health problems, such as fungal infections or urinary tract infections. With this background, this study was conducted with the objectives of assessing the knowledge, perception and practice about MHHM among adolescent girls in rural schools of Mysuru district.

## METHODS

School based cross-sectional study was done among rural girls studying in high school (i.e., 8th to 10th standard) for a period of 3 months from June 2023 to September 2023. After line listing of all the schools under JSS Mahavidyapeeta in Mysuru district, three schools were selected by simple random sampling (lottery) method. In the selected schools, students who have attained menarche, present on the day of data collection and willing to participate were included by convenient sampling method and girls who did not attain menarche and those who were absent on that day were excluded. After obtaining consent from heads of the selected schools and assent from students, data was collected. Pretested semi-structured self-administered questionnaire was distributed to the students to assess the knowledge, perception and MHHM practices in their routine. The questionnaire included sociodemographic details, knowledge, perception and practice based questions. Institutional ethics committee approval was taken before the start of the study. Data thus collected from 153 girls was entered in Microsoft excel sheet and analyzed using IBM SPSS statistics for windows, version 22 (IBM Corp, Armonk, N.Y, USA). Descriptive statistics like percentage, mean and standard deviation are applied.

## Scoring

Scoring was done only for knowledge-based questions as perception and practice are subjective. For each correct answer 1 mark was assigned and a mean value was calculated. Participants who scored more than mean value were considered to have good knowledge and who scored less than mean value was considered to have poor knowledge.

## RESULTS

Mean ( $\pm$ SD) age was 14.32 ( $\pm$ 0.984) years. 98.7% were Hindus, 41.8% of the girls were studying in 10<sup>th</sup> standard.

Majority of the mothers (50.3%) and fathers (29.45) of the participants have studied high school. 88.2% of the mothers are homemakers whereas 64.1% of the fathers are engaged in skilled work (Table 1).

**Table 1: Distribution of participants based on sociodemographic details (n=153).**

Sociodemographic details		N (%)
Religion	Christian	1 (0.7)
	Hindu	151 (98.7)
	Muslim	1 (0.7)
Class	8 <sup>th</sup> standard	30 (19.6)
	9 <sup>th</sup> standard	59 (38.6)
	10 <sup>th</sup> standard	64 (41.8)
Mother education	Degree	3 (2)
	High school	77 (50.3)
	Illiterate	14 (9.2)
	Middle	34 (22.2)
	Primary	10 (6.5)
	PUC	15 (9.8)
Mother occupation	Death	1 (0.7)
	Home makers	135 (88.2)
	Semi-skilled	5 (3.3)
	Skilled	12 (7.8)
Father education	Degree	5 (3.3)
	High	45 (29.4)
	Illiterate	31 (20.3)
	Middle	25 (16.3)
	Primary	15 (9.9)
	PUC	32 (20.9)
Fathers occupation	Business	5 (3.3)
	Death	2 (1.3)
	Semi-skilled	6 (3.9)
	Skilled worker	98 (64.1)
	Unemployed	8 (5.2)
	Unskilled	34 (22.2)
Diet	Mixed	80 (52.3)
	Veg	73 (47.7)

## History on menstruation

Mean ( $\pm$ SD) age at menarche was 12.74 ( $\pm$ 1.11) years whereas least age was noted as 7 years (0.7%). Mean ( $\pm$ SD) Menstrual cycle duration was 30.79 ( $\pm$ 5.798) days and among 0.7% and 2.6% duration of menstrual cycle was 15 days and 60 days respectively. Mean ( $\pm$ SD) number of days of menstruating was 4.98 ( $\pm$ 1.379). 69.9% of the girls had regular periods and 30.1% had irregular periods. 83% mentioned that they had been taught about menstruation among them 46.4% got information from doctor followed by mother (22.2%). Nearly half of them knew (51.6%) about menstruation at menarche and another half did not know anything about menstruation (48.4%). 92.2% said that they got more knowledge from their mothers after attaining menarche (Table 2).

**Table 2: Distribution of participants based on the knowledge they gained from (n=153).**

Variables		N (%)
Have been taught about menstruation	No	26 (17)
	Yes	127 (83)
If yes, got information from whom? (N=127)	Asha	16 (10.5)
	Doctor	71 (46.4)
	Friend	1 (0.7)
	Mother	34 (22.2)
	Teacher	5 (3.3)
Already knew about menstruation at menarche	No	74 (48.4)
	Yes	79 (51.6)
From whom did you get more knowledge after menarche?	Friend	3 (2)
	Mother	141 (92.2)
	Sister	6 (3.9)
	Teacher	3 (2)

**Table 3: Distribution of participants based on the knowledge on menstrual health (n=153).**

Variables		N (%)
Menstrual material you know	Cloth	12 (7.8)
	Sanitary pad	88 (57.5)
	Cloth and sanitary pad	50 (32.7)
	Cloth, sanitary pad and menstrual cup	2 (1.3)
	Cloth, sanitary pad and tampons	1 (0.7)
Reason for menstruation	Don't know	109 (71.2)
	Exercise	2 (1.3)
	Food	8 (5.2)
	God	1 (0.7)
	Hormones	33 (21.6)
Menstrual blood comes from	Abdomen	15 (9.8)
	Don't know	123 (80.4)
	Ovaries	2 (1.3)
	Urinary tract	5 (3.3)
	Uterus	8 (5.2)

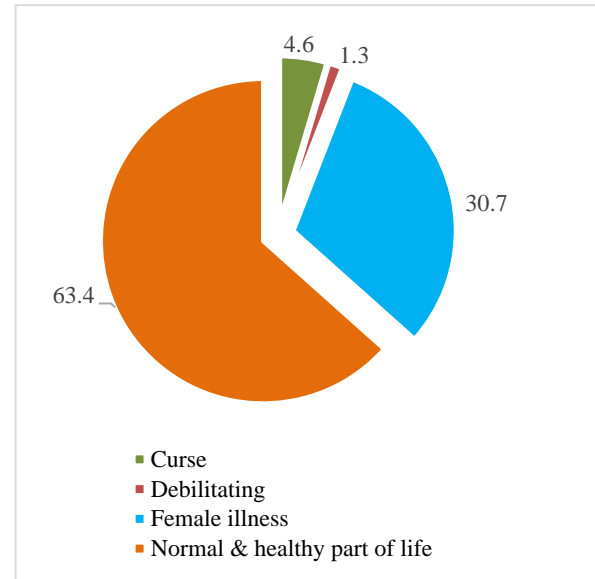
### Knowledge

Of the menstrual materials mentioned 57.5% knew about sanitary pad and 32.7% knew both cotton cloth and sanitary pad. Least knew about menstrual cup and tampons. Only 21.6% knew that hormones as the reason for menstruation while majority, i.e., 71.2% said they don't know the reason. 5.2% marked uterus as the organ responsible for menstruation while 80.4% mentioned don't know (Table 3). After scoring, 21.6% of the participants were found to have good knowledge about menstruation.

### Perception

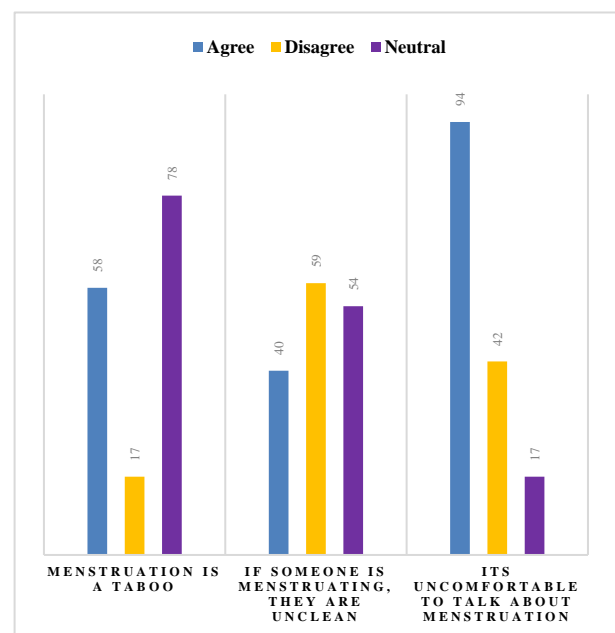
Total 63.4% of the participants feel that menstruation is a normal & healthy part of life whereas 30.7% feel it as a female illness (Figure 1). 17, 59 and 42 participants disagreed with the statements 'menstruation is a taboo, if

someone is menstruating, they are unclean and its uncomfortable to talk about menstruation' respectively. (Figure 2).

**Figure 1: Distribution of participants based on the perception on menstruation (%).**

### Practice

Total 83.7% were using sanitary pad whereas none of them used menstrual cup and tampons. 25.5% flush the menstrual material in the toilet as a disposal method while 34% wrap the material in paper & throw it in dustbin. 41.8% changes the material thrice a day and 33.3% twice a day (Table 4).

**Figure 2: Distribution of participants based on the perception on menstruation health (n=153).**

**Table 4: Distribution of participants based on the practice on menstruation health (n=153).**

Variables		N (%)
<b>Material used</b>	Cloth	25 (16.3)
	Sanitary pad	128 (83.7)
<b>Disposed</b>	Burn it	22 (14.4)
	Dustbin	6 (3.9)
	Flushed in toilet	39 (25.5)
	Open space	9 (5.9)
	Washed and reused	25 (16.3)
	Wrap in paper and throw in dustbin	52 (34)
<b>Frequency of change</b>	1	10 (6.5)
	2	51 (33.3)
	3	64 (41.8)
	4	28 (18.3)

## DISCUSSION

The study aims at assessing the knowledge, attitude and MHHM practice among adolescent girls in rural schools of Mysuru district, Karnataka. The study contributes to understanding of their knowledge on menstrual health and focus on preparedness of the individual towards MHHM. In the present study mean age was 14.32 years. 41.8% of the girls were studying in 10<sup>th</sup> standard. The mean age of menarche was 12.74 years and our result is comparable with the study conducted in assam by Boruah et al., where mean age was 13 years and a study by Khanna et al., in Rajasthan was 13.2 years.<sup>4,5</sup> In a study conducted in rural North Karnataka by Patil, the mean age of menarche was found to be 13.45 years.<sup>6</sup> In the present study, 69.9% and 30.1% of the girls had regular and irregular menses. In this study, 51.6% had knowledge about menstruation at menarche and 48.4% did not know anything about menstruation. Our results are in contrast with the study conducted by Boruah et al., where 28.4% had prior knowledge and 13.8% of the girls knew about menses in a study conducted by Reddy et al.<sup>4,7</sup> Higher prevalence of 57.9% and 60.53%, regarding information on menstruation was found in the study by Shanbhag *et al* and Hagawane et al respectively.<sup>8,9</sup> High knowledge in our study could be due to a session held by medical officer of primary health centre (PHC) in a school on Menstrual health.

Total 21.6% knew that hormones as the reason for menstruation in our study while 71.2% said they don't know the reason. 5.2% marked uterus as the organ responsible for menstruation while 80.4% mentioned don't know. our study results are similar with the results of the study conducted by Thakre et al where 80.62% did not know the cause of the menstrual bleeding which is like our study result.<sup>10</sup> 2.5% of the girls stated that menstrual bleeding comes from the uterus, and 76.23% were unaware of the source of the menstrual bleeding. In the present study, 63.4% of the participants feel that menstruation is a normal & healthy part of life whereas 30.7% feel it as a female illness. In a study conducted in

Assam, 91.76% of the study participants knew that menstruation is a normal process.<sup>4</sup> 17 participants in our study disagreed with the statements 'menstruation is a taboo, if someone is menstruating, they are unclean and its uncomfortable to talk about menstruation' respectively.

In terms of practicing menstrual hygiene, out of 153 participants, 83.7% were using sanitary pad and 16.3% were using cloth as menstrual product. Similar result was found in a study, where 74.12% of the adolescents used sanitary pads, and 18.82% used cloth as absorbent.<sup>4</sup>

Total 25.5% flush the menstrual material in the toilet as a disposal method while 34% wrap the material in paper & throw it in dustbin. Similar results were found in a study Boruah et al and Hagawane et al.<sup>4,9</sup> Whereas and Thakre et al and Barathalakshmi et al found that burying was the most common method followed by disposal along with domestic wastes.<sup>10</sup> In our study, 41.8% changes the material thrice a day and 33.3% twice a day.

## Limitations

Limitation was study was conducted in fewer schools hence generalizability of the result is difficult.

## CONCLUSION

Mean age was 14.32 years and mean age at menarche was 12.74 years. 83% mentioned that they had been taught about menstruation among them 46.4% got information from doctor and 51.6% knew about menstruation at menarche. 57.5% knew about sanitary pads and 32.7% knew both cotton cloth and sanitary pad. 21.6% knew that hormones as the reason for menstruation and 5.2% marked uterus as the organ responsible for menstruation. 63.4% of the participants feel that menstruation is a normal and healthy part of life. 83.7% were using sanitary pad, 25.5% flush the menstrual material in the toilet as a disposal method and 41.8% changes the material thrice a day

## Recommendations

Teachers at schools can take sessions where they can give information on puberty and its changes, menstrual hygiene, materials available, disposal methods, cultural practices and myths followed during menstruation which helps the students in managing their menses.

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