

	<div>ORIGINAL RESEARCH PAPER</div> <div>STUDY ON KNOWLEDGE AND PRACTICES OF MENSTRUAL HEALTH AMONG TRIBAL ADOLESCENT GIRLS IN MAHARASHTRA</div>	<div>Community Medicine</div> <div>KEY WORDS: Tribal adolescent girls, Menstrual hygiene, Sanitary pads, Restrictions.</div>
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<div>ABSTRACT</div>	<div><b>Background:</b> Menstrual health awareness remains a critical challenge among tribal adolescent girls in Maharashtra, where socio-cultural barriers compound the challenges of adolescent development. This observational study aims to assess the current status of menstrual health awareness, practices and restrictions observed during menstruation by tribal adolescent girls. <b>Methods:</b> A cross-sectional observational study was conducted among 420 tribal adolescent girls of 10-18 years from selected schools across six tribal blocks of Maharashtra over six months. Data was collected using a pre-tested, structured questionnaire covering domains of menstrual knowledge, hygiene practices, cultural beliefs and taboos affecting menstrual health. Systematic random sampling was done to select participants from the participant schools. <b>Results:</b> The study examined menstrual health awareness, revealing that 69% of participant girls got basic pre-menarche knowledge about menstruation from their mothers or sisters. Knowledge of menstrual physiology was limited, with just 27% understanding that menstrual blood originates from the uterus. Only 21% practiced regular cleaning during menstruation, while 70% used sanitary pads and 71% used water alone for external genital cleaning. Regarding disposal, 52% of girls either used dustbins or flushed pads in toilets. Cultural restrictions significantly impacted participants, with only 22% reporting no restrictions. The most common restrictions were prohibitions on attending religious functions (67%) and family gatherings (52%). Notably, a statistically significant relationship was found between mothers' literacy levels and their daughters' practice of use of sanitary pads. <b>Conclusion:</b> The findings highlight significant gaps in menstrual health knowledge and practices among tribal adolescent girls in Maharashtra. The study emphasizes on culturally sensitive educational interventions and community-based programs to address cultural barriers. These insights can help policy development for promoting menstrual health in tribal communities.</div>	
<div>INTRODUCTION:</div>	<div>Adolescence, spanning from 10 to 19 years, signifies a pivotal juncture of physical, psychological, and social development, transitioning from childhood to adulthood.<sup>1</sup> With 1.2 billion adolescents worldwide encountering myriad challenges during this phase, India, where adolescent girls constitute 22% of the female populace, confronts significant hurdles in providing adequate reproductive health information and services, often hindered by cultural taboos.<sup>2,3</sup> Menstrual health awareness remains a critical challenge especially among tribal adolescent girls in Maharashtra, where socio-cultural barriers compound the challenges of adolescent development. The menstruating females are considered impure and teenage girls are not allowed to undertake home chores or engage in religious or cultural events during their periods.<sup>4</sup></div> <div>Despite of 9.35% of total tribal population in Maharashtra, very few studies from the tribal districts of Maharashtra on the knowledge and practices of adolescent girls regarding menstruation hygiene have been published.<sup>5</sup> This observational study aims to assess the current status of menstrual health awareness, practices and restrictions observed during menstruation by adolescent girls in tribal blocks of Maharashtra. The study also seeks to analyse the association between mothers' literacy status and their daughters' practice of use of sanitary pads.</div>	
<div>MATERIAL AND METHODS:</div>	<div>After obtaining institutional ethical committee's approval, the cross-sectional observational study was conducted among 420 adolescent girls aged 10-18 years from selected schools across six tribal blocks of six revenue divisions of Maharashtra, over a period of six months (01 June 2024 to 30 November 2024). A total of 70 participants were enrolled from each selected school using Systematic Random Sampling. Data was collected using a pre-tested, structured questionnaire covering domains of menstrual knowledge, hygiene practices, cultural beliefs and taboos affecting menstrual health. The adolescent girls enrolled in classes 6<sup>th</sup> to 12<sup>th</sup>, who have achieved menarche and are willing to participate in the study, were eligible for inclusion in the study. Adolescent girls, who did not attend menarche and who did not consent for the study, were excluded. The data was compiled and statistical analysis was done with SPSS 20.0 statistical software. Significance level P&lt;0.05 was considered statistically significant.</div> <div><b>RESULTS:</b></div> <div>A total of 420 adolescent girls, with mean age of 14.2 ± 1.52 years and the mean age of menarche at 13.07 ± 1.23 years participated in the study. The demographic profile of the participants revealed that the majority, comprising 81.3% identified with the Hindu religion and 61.2% attended schools in rural areas. Regarding the mother's education, 19% were illiterate. Only 27% of participants demonstrated accurate knowledge about the uterus as the source of menstrual bleeding, with 69% primarily receiving information about menarche before their menstruation, from their mothers or sisters. Most participants (87%) reported regular menstrual cycles, and 70% used sanitary pads. However, menstrual hygiene management remains suboptimal, with 60% cleaning external genitalia less than three times daily and 71% using only water for cleaning.</div> <div>Notably, 78% of participants experienced multiple sociocultural restrictions during menstruation, with 67% facing restrictions during religious occasions and 52% being excluded from family functions, highlighting the pervasive cultural taboos surrounding menstruation in tribal</div>	

96

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communities.

**Table 1. Knowledge and Practices of Menstrual Health among Tribal Adolescent Girls in Maharashtra**

Sr. No.	Parameters of knowledge and practices about menstrual health	Frequency (n = 420)	Percent age (%)
1.	Knowledge of 'uterus' as the source of menstrual bleed	113	27
2.	Source of information regarding menstruation before menarche		
a.	Mother / Sister	290	69
b.	Teacher	67	16
c.	Friends	34	8.1
d.	Media	29	6.9
2.	Regularity of menstrual cycle		
a.	Regular	365	87
b.	Irregular	55	13
3.	Type of absorbents used during menstruation		
a.	Sanitary pads	294	70
b.	Fresh cloth pieces	105	25
c.	Reusable cloth	21	5
4.	Menstrual hygiene by daily cleaning of external genitalia		
a.	< 3 times	252	60
b.	> 3 times	88	21
c.	Only during bath	80	19
5.	Agents used for cleaning of external genitalia		
a.	Only water	298	71
b.	Soap and water	118	28
c.	Anti-septic	4	1
6.	Disposal Method		
a.	Dustbin	151	36
b.	Wash and Reuse	185	44
c.	Burning/ Dumping	17	4
d.	Flush in toilet	67	16
7.	Restrictions during menstruation		
a.	None	92	22
b.	Religious occasions	281	67
c.	Physical activity/ Playing	105	25
d.	Attending classes	113	27
e.	Attending family function	218	52
f.	Household work	122	29
g.	Keeping fast	46	11
h.	Avoiding visit to other homes	130	31
i.	Avoiding bath	214	51

Table 2 shows an extremely statistically significant association between mothers' literacy levels and their daughters' practice of use of sanitary pads.

**Table 2: Relationship between mothers' literacy levels and their daughters' practice of use of sanitary pads**

Mother's Literacy Status	Sanitary Pad use by daughter	No Sanitary Pad use by daughter	Chi Square value	'p' value
Literate	210	130	27.941	p < 0.0001
Illiterate	74	6		

**DISCUSSION:**

Our study provides critical insights into the menstrual health knowledge and practices among tribal adolescent girls in Maharashtra. Our findings highlight a significant gap in anatomical knowledge, with only 27% of participants correctly identifying the uterus as the source of menstrual bleeding.

This aligns with similar studies across India as research from Palghar<sup>6</sup> showed 34.4% of girls having correct knowledge, while studies in Mumbai<sup>7</sup> and South India<sup>8</sup> reported comparable rates of around one-third of participants understanding the physiological source of menstruation.

In our study, source of information about menstruation to the study participants before menarche was mainly their mothers or sisters (69%), a pattern consistent with study on adolescent girls of seven anganwadis in Mumbai region which has shown that 72.8% girls asked their mothers for the source of information about menstruation<sup>8</sup>. Similar inferences were also drawn by Dhingra et al<sup>10</sup>, Sapkota et al<sup>11</sup>, Savanthe et al<sup>12</sup>, Udayyer et al<sup>13</sup> and Agarwal et al<sup>14</sup> in their respective studies. This underscores the critical role of familial education in menstrual health awareness of adolescent girls. Contrastingly, in a study conducted at Raigad<sup>15</sup>, the primary source of information on menstruation for tribal adolescents was their friends, accounting for about 43% of respondents, followed by mothers (15.5%).

Our study revealed notable variations in menstrual hygiene management. Sanitary pad usage was reported by 70% of participants, which is consistent with studies in Karnataka<sup>16</sup> (70%) and Andhra Pradesh<sup>13</sup> (78.5%). In a study on adolescent girls in Uttarakhand<sup>17</sup> in 2021, sanitary pad usage was reported by 79.5% participants whereas a study in Jodhpur<sup>18</sup> in 2020 showed sanitary pad usage by 85% participants. In contrast to these findings, sanitary pad usage during menstruation was found to be in only 31% participants in a study at Madhya Pradesh<sup>19</sup> in 2021. In a study by Kathuria et al in 2022, regional variations in India regarding sanitary pad usage showed that it was highest in the Southern region (80%) and lowest in the Eastern region (44%).<sup>20</sup> In a study from Karnataka, around 46.06% of the girls preferred old cloth pieces rather than sanitary pads as menstrual absorbent.<sup>21</sup>

In our study, the disposal methods were particularly concerning, with 44% girls washing and reusing absorbents, potentially increasing health risks. A study by Savanthe et al<sup>12</sup> reported that 40.9% of the study participants burned the absorbent material, 22.3% washed and flushed off, 20.7% threw them in the dustbin and 16.1% washed and reused them.

Approximately 60% of study participants cleaned their external genitalia less than three times daily and 71% used only water for cleaning. These practices may increase the risk of infections and highlight the need for targeted hygiene education. In a study conducted by Udayar et al, 82.9% of the girls used only water to wash their genitalia<sup>13</sup>. A study on adolescent girls in Mumbai region has reported that 1.75% study participants never washed the genitalia during menses, 79.82% washed it less than 2 times per day. 84.21% study participants used only water, 13.16% used cloth and 1.75% used other materials for cleaning the genitalia during menses.<sup>9</sup>

The most striking aspect of our research was the pervasive social restrictions during menstruation. Approximately 67% of participants reported restrictions during religious occasions, while 52% faced limitations in attending family functions. These findings corroborate previous studies demonstrating the deeply entrenched social stigma surrounding menstruation.

In a study conducted at Mumbai<sup>7</sup>, the most common restriction expressed was not to attend religious occasions (54.39%) and family functions (49.12%) during the menses. In a study by Dhingra et al, all the girls reported that they were restricted to attend the religious occasions and family functions during the menses<sup>10</sup>. Sridhar et al and workers reported that 72.5% of the adolescent girls in their study were told to restrict bath during menstruation, 86.81% were restricted in religious activities and 20% resulted in school absenteeism.<sup>22</sup> A study by Sapkota et al noted that 41% of adolescent girls were not allowed to go to the temple and attend religious occasions during menstruation<sup>11</sup>. In a study conducted at Delhi in 2021, restrictions were religious (94%), followed by routine activity restriction (69%) and restriction of academic activities

(60%)<sup>23</sup>.

In the present study, an extremely statistically significant association was found between sanitary pad usage by the study participants and their mothers' literacy status. The menstrual health of adolescent girls is significantly influenced by the role of mothers. In a study conducted in Uttar Pradesh and Bihar in 2021 also, a significant association was found between sanitary pad usage and mothers' education<sup>24</sup>. Contrastingly, in a study conducted at Assam in 2021, no significant association was found between sanitary pad usage and education of mother<sup>25</sup>.

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**Conflict of Interest:** None

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