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Menstrual Hygiene Management: A Comprehensive Review of Practices in India with a Focus on Chhattisgarh

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Abstract: This review examines Menstrual Hygiene Management (MHM) practices in India, especially focused on the state of Chhattisgarh. It examines absorbent materials, disposal methods, and hygiene promotion at both nationally and state level. Menstrual awareness and its management both are essential components of women's health and well-being. Both reusable menstruation products and disposable pads are popular choices in urban settings. This can be influenced by various variables like personal desire, accessibility, and budget. According to the report, poor sanitation and education lead to irregular garbage disposal. Mental health issues suffered by women during menstruation are also examined. Information from National Family Health Survey (NFHS) shows sanitary product access has improved despite these obstacles. The study provides insightful information about effective community mobilization initiatives that help advance MHM and break down stigmas related to menstruation. This is especially important when looking at how MHM conditions differ throughout India especially in Chhattisgarh.

Keywords: Menstrual Hygiene Management, Menstrual practices, Girl's Empowerment, Hygiene, Sanitation, Menstrual awareness

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Introduction

Menstruation is a normal procedure, it is nonetheless frowned upon in Indian culture since it is seen as filthy and unclean (Dasgupta and Sarkar, 2008). A woman's estimated lifetime menstrual cycle is 459 cycles, occurring between adolescence (ages 11–24) and menopause (ages

45–55) (Medline Plus, 2017). Many girls are not getting enough information on the facts of menstruation because of societal expectations and limitations. As a result, this made them felt, abnormal or ill (Deo and Ghattargi, 2005). Unprepared girls are likely to develop unfavorable

attitudes regarding menstruation as a result of their fear, confusion, and embarrassment at their menarche (Gainotti, 1986). Girls should expect major physiological and physical changes during their adolescent. A woman's menstrual cycle is a good indicator of her reproductive health, therefore significant interruptions to it may indicate underlying adolescent gynaecological issues (Verma *et al.*, 2011).

Achieving gender parity, high facility usage, and equitable sanitation access necessitates improvements in MHM. By ensuring access to culturally appropriate MHM products and sanitary facilities, women and girls can fully contribute in education and the workforce (Wilmouth *et al.*, 2013). Even though menstrual waste is a serious issue, but still in schools of developing nations, proper sanitation facilities are not present. Even the percentage of schools worldwide that provided water and sanitation to girls is just 47% and 46%, respectively (Sommer *et al.*, 2015).

Even in the US girls who cannot afford feminine hygiene products skipped school to avoid the embarrassment of staining their clothes (Weiss-Wolf, 2017). Four layers make up the polymeric structure of synthetic disposable napkins. The top sheet is fluid-permeable, allowing menstrual fluid to seep into the core and keep the top layer dry (Bae *et al.*, 2018; Kara, 2021). It uses a porous, non-woven thermoplastic fibre like polypropylene or polyethylene. Sanitary napkins take years to decompose so, it is posing an environmental risk. Additionally, each sanitary napkin leaves 2 g of non-biodegradable plastic. Improper sanitary menstrual hygiene management may come from a lack of secure disposal solutions. Sanitary waste in India falls under the Solid Waste Rules. So most sanitary waste is disposed of in landfills due to its wrong classification under the solid waste (Hameed *et al.*, 2024).

When adolescent girls suffered from any menstrual disorders, their families are often impacted as well due to their health issues (Diaz *et al.*, 2006; Hillard, 2002). It is essential to

comprehend teenage girls' menstruation issues in order to create intervention programs those could work impactfully. India has a major research vacuum in menstruation problems and menarche, despite the fact that many other countries have similar fields of study and India as well faces a significant gap in menstrual hygiene management. This study aims to address this need (Okusanya *et al.*, 2009).

This review covered menstrual hygiene and waste management in India, focusing on Chhattisgarh. The study tried to understand few factors:

1. The state of menstrual hygiene at current in India and Chhattisgarh (state of India).
2. The kinds of menstrual materials those are utilized by women.
3. Menstrual waste disposal methods that women typically use.

To find journal articles, reports, and other information about managing menstrual hygiene and disposing of absorbents, a systematic search was conducted. The literature that was found throughout the search, which ran from February to May, 2024, was mostly recent and concentrated on the handling and disposal of menstrual waste. It included the types of absorbents utilized, disposal methods in urban and rural locations especially in Chhattisgarh, India and the impact of socioeconomic factors on disposal practices on society. The study also looked at the threats to the environment and public health posed by menstrual waste, as well as the impact that proper disposal has on empowerment, dignity, and sanitation habits. It also includes the threats that incineration poses to human health and the environment as well as the cultural aspects of its use.

To find pertinent peer-reviewed journal articles, a full-text database search was conducted across a number of databases, including PubMed, Web of Science, Google Scholar, EMBASE, Conference Papers Index, and Scopus. Menstrual hygiene management, waste management,

Table 1: MHM Practices in India

Nagpur district		South India	
Question	No. of Respondent	Question	No. of Respondent
Age of menarche 12-14	89.93%	Age of menarche 12-14	87.01%
Awareness about menstruation before menarche	36.95%	Awareness about menstruation before menarche	64.5%
Source of information before menarche family	95.11%	Source of information before menarche family	89.3%
Absorbent used		Absorbent used	
Sanitary napkin	49.35%	Sanitary napkin	68.9%
Cloth	45.74%	Cloth	45.74%
Both	4.9%	Both	4.9%
Method of disposal		No. of pads per day	
Burn	52.2%	2-3	16.6%
Throw in dustbin	39.79%	>3	78.3%
Change of pads in school		Change of pads in school	
Yes	11.37%	Yes	4.3%
No	86.63%	No	94%

(source: Thakre *et al.*, 2011; Logeswari *et al.*, 2021; Sayvithaa *et al.*, 2025)

menstrual hygiene management disposal, menstrual waste disposal, menstrual hygiene management disposal practice, menstrual waste disposal practice, menstrual hygiene management disposal technology, menstrual waste disposal technology, menstrual hygiene management incineration, menstrual waste incineration, menstrual hygiene management absorbent, menstrual absorbent, menstrual hygiene management health, and menstrual hygiene management risk were among the keywords used to create the database search strings. Two tables were created by compiling the literature that was found through these searches. Also, discussion about other studies are also mentioned in this review paper.

MHM Practices in India

(a) National Landscape

Table 1 compares menstrual hygiene management practices in various parts of India. Table 2

compares data from three studies on menstrual hygiene management carried out in Chhattisgarh.

In Table 1, the detailed observation presents one from the southern states of India, and one from Nagpur District. Also, other studies mentioned in this review paper.

The typical age of menarche, according to studies conducted in Nagpur and South India, is between 12 to 14 years old. Menarche during this age range was reported by 89.93% of respondents in Nagpur and 87.01% in South India. Additionally, compared to Nagpur (36.95%), South India (64.5%) had a higher level of awareness of menstruation prior to menarche. This implies that source of information before their first period, South Indian females have a superior grasp of menstruation and their major source of information was not just family. Families were reported to be the main source of information

about menstruation in both regions (South India- 89.3%, Nagpur- 95.11%) (Oster and Thornton, 2011; Thakre *et al.*, 2011). Comparatively, their source of information was vast.

Practices of menstrual hygiene in South India, Nagpur had a different favoured menstruation absorbent. In Nagpur, cloth (49.35%) was marginally more popular than sanitary napkins (45.74%) (49.35%). In South India, on the other hand, sanitary napkins were the most popular option (68.9%).

(b) Obstacles in Managing Menstrual Hygiene in India

The inability to change pads at school is a problem that menstruation females must deal with, as both studies pointed out. Only 4.3% of respondents in South India cited the same difficulty, compared to 11.37% of respondents in Nagpur who said this was a problem. This implies that South Indian schools have better resources or a more welcoming atmosphere for managing menstrual hygiene compared to Nagpur.

(c) As whole situation

South Indian girls appear to have stronger pre-menarche knowledge and access to a wider range of information sources, despite the fact that the average age of menarche was same in Nagpur and South India, according to the statistics. Furthermore, the fact that South India has a larger demand for sanitary napkins suggests that there may be easier availability to these goods in Southern states compared to Nagpur. Lastly, it seems that in both there is problem changing pads at school, which may indicate improved facilities or a more encouraging atmosphere for menstruation hygiene.

The National Family Health Survey 2019-21 (NFHS-5) found that 89.4% of urban 15-24-year-olds and 72.3% of rural women utilize sanitary products. Hygienic protection includes locally prepared napkins, sanitary napkins, tampons, and menstruation cups (NFHS, 2021). Teen girls using more sanitary pads than ever. The National Family Health Survey (NFHS) (IIPS, 2015-2016) found

that 57.6% of 15-24-year-old women utilized sanitary protection. Menstrual hygienic materials use has been increased according to data of NFHS-5, 2019-2020 IIPS (2019-2020). In a study it has been found that 77.3% of young women used safe materials, most of them use sanitary pads (Mahajan *et al.*, 2021). This reflects the demand of sanitary napkins by the majority of population.

Also, women and girls in rural and urban settings utilize different absorbents. Reusable cloth pads are prevalent in rural areas, while urban women prefer commercial sanitary pads. Financial circumstance affects a woman's absorbent choice (Kroesa and Greenpeace Foundation, 1990). The sanitary product material especially traditional disposable sanitary products used chlorine-bleached kraft or sulphate pulp (wood pulp) for the absorbent core. Many sanitary products were made from rayon that is a synthetic material. There are scented and unscented options. Problems with deodorized the scented one, they may contain organochlorines, anti-microbials that can harm humans and the environment (Kaur *et al.*, 2018). These goods' chemical makeup causes them to kill soil microflora and slow down the breakdown process when they are buried in the ground (Kroesa and Greenpeace Foundation, 1990).

Because schools lack hygienic facilities, girls throw their pads in the toilets. Girls sometimes throw away used period clothes without washing them. Many females missed their school due to broken water supplies, taps, buckets, and toilet locks or doors (Mahon and Fernandes, 2010; Jasper *et al.*, 2012). Menstrual waste is disposed of in incinerators or feminine hygiene bins at some schools, but some students avoided using them out of shyness or fear of being observed (Crofts and Fisher, 2012).

Menstruation is a taboo and menstrual hygiene is neglected due to gender inequality as well. Men and women have separate rights thus, women's views are ignored in development projects, homes and communities this proved education is must for blooming society (Kaur *et al.*,

Table 2: MHM Practices in Chhattisgarh

Adolescent school girls in Chhattisgarh		MHM (15-49 age group) of CIMS,Bilaspur,Chhattisgarh		MHM and awareness among tribal population of Sukma, Chhattisgarh	
<u>Question</u>	<u>No. of responses</u>	<u>Question</u>	<u>No. of responses</u>	<u>Question</u>	<u>No. of responses</u>
Mean age of menarche in year 12-14 >15	68.9% 27%	Age in year 15-25 26-35 36-49	24.5% 47% 28.5%	Age of menarche 10-14 years	98.52%
Source of information Family Friend Teacher Others	56.6% 19.4% 16.3% 7.7%	Absorbent used Sanitary napkin Cloth Both	20% 50.5% 29.5%	Duration flow 1-3 days 4-6 days >7 days	7.76% 83.85% 8.38%
Duration of menstruation in days 3-5 days 6-7 days	79.6% 20.3%	Interval between menstrual cycle <21 days 21-35 days >25 days	25% 45.5% 29.5%	Knowledge of menses prior to menarche Yes No	2 3.49% 7 6.55%
Anxiety and depression	95%	Clothes/pads used during menstruation 1-6 More the 7	78.5% 21.5%	Knowledge of cause of bleeding Physiological God given Don't know	2 3.45% 1 3.66% 6 2.89%

(source: Ghoghre, 2023; Pandey and Shukla 2018)

2018). Also, sanitary napkins are so expensive, young girls irregularly attending school in places like western Kenya (Wilson *et al.*, 2014), Uganda (Crofts and Fisher, 2012), Nepal (Oster and Thornton, 2011), and Africa (Montgomery *et al.*, 2012). Even today cost is the major barrier.

According to a study in Ghana, 53.2% of participants were in favor of giving senior high school females free sanitary goods, with 67.9% citing excessive prices as the primary justification (Ameade and Majeed, 2015).

MHM Practices in Chhattisgarh

(a) Adolescent school girls in Chhattisgarh

A survey of adolescent school girls in Chhattisgarh (Table 2) found that the average age of menarche falls between 12 and 14 years for 68.9% of respondents while 27% experienced it after 15 years old. Family was the primary source of information about menstruation before menarche (56.6%), followed by friends (19.4%) and teachers (16.3%) (Srivastava *et al.*, 2016). The duration of menstruation also varied, with 79.6%

experiencing periods lasting 3-5 days and 20.3% having periods lasting 6-7 days. In other Indian studies, 50.6% of females experienced dysmenorrhea and 60.77% from them reported it (Dambhare *et al.*, 2011; Verma *et al.*, 2011). In Chhattisgarh, 51.5% of women reported PMS, which includes headaches, fatigue, anxiety, despair, and food cravings. These data reflect PMS prevalence studies (Srivastava *et al.*, 2016).

(b) CIMS, Bilaspur, Chhattisgarh

Another survey conducted (Table 2) at CIMS, Bilaspur, focused on women aged 15 to 49. This study revealed a breakdown of age groups, 24.5% were between 15-25 years old, 47% were between 26-35 years old, and 28.5% were between 36-49 years old. Interestingly, menstrual absorbent preferences differed from the adolescent group. Here, only 20% used sanitary napkins, while 50.5% used cloths and a combination of both 29.5% were more common (Pandey and Shukla, 2018).

(c) Tribal population psychological problems during menstruation

Menstruation's psychological impacts were studied in Chhattisgarh's Sukma District indigenous people. The study found that many women suffered psychological issues during their periods like sleep interruptions (40.99%), mind fatigue (58.31%), changes in mood (72.37%), intolerant (83.17%), lower abdomen pain (74.07%), leg pain (4.11%), headaches (18.71%), and severe back pain (66.61%) (Table 2). Over 63% of women in the poll reported depression during their periods (Ghoghre, 2023). In 2022, Chennai researchers found similar rates of headaches, irritation, mood swings, lower belly discomfort, and back pain as well (Parthasarathy *et al.*, 2022). This explained that many females experience mood swings or emotional changes during menstruation.

According to National Family Health Survey 2019-21 (NFHS-5), urban women aged 15-24 utilize sanitary menstruation protection 83.2% and rural women 64.8% (NFHS, 2021). Hygienic

protection includes locally prepared napkins, sanitary napkins, tampons, and menstruation cups (NFHS, 2021).

Conclusion

MHM encounters obstacles in Chhattisgarh, India. Urban women have more availability of menstrual hygiene products in comparison to their counterparts residing in rural regions. Schools frequently lack adequate sanitation facilities, including restrooms and washing amenities, which poses challenges for girls in maintaining basic menstrual hygiene. Nevertheless, there is hope for a positive outcome. There is an increasing number of young women who use sanitary pads, indicating enhanced availability. Government initiatives and NGO contribution include increasing public consciousness and enhancing accessibility to sanitary items.

The review proposes multiple remedies. Investing in the efficient and economical production and distribution of sanitary pads can help narrow the divide between urban and rural areas. Furthermore, the inclusion of MHM education in school curriculums can effectively address social disapproval and enhance the empowerment of females through information acquisition. It is essential to enhance the sanitation infrastructure of schools by installing adequate toilets, providing access to running water, and implementing effective waste management systems. Ultimately, the utilization of mass media campaigns and community outreach programs can effectively dismantle the taboo associated with menstruation and promote candid conversations.

By embracing these suggestions, India may establish a future in which all women and girls effectively handle their menstrual cycles with respect and good health. By enabling them to remain enrolled in educational institutions and actively engage in societal activities, this would not only enhance their general well-being and growth but also contribute to their physical and mental health.

Ethical Statement

This is a review article hence no Ethical Approval needed.

Author Contributions

Each author has contributed equally to the study's planning, analysis, writing, and editing. All authors have read and agreed to the published version of the manuscript.

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Conflict of Interest

The authors declare no conflicts of interest.

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