

# Menstrual Hygiene Practices Among Adolescent Girls in India: A Narrative Review

Jyoti Kumari<sup>1</sup>, Prof. Desraj Sabharwal<sup>2</sup>

<sup>1</sup>Research Scholar, Department of Sociology, Maharshi Dayanand University, Rohtak, India

<sup>2</sup>Professor, Department of Sociology, Maharshi Dayanand University, Rohtak, India

Corresponding Author: Jyoti Kumari

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## ABSTRACT

Menstrual hygiene (MH) among adolescent girls in India is a critical public health issue. It has far-reaching implications for their health, employment, education, and overall well-being. This article uses a narrative review to synthesize scholarly literature indexed in Scopus, Web of Science, and Google Scholar to provide a comprehensive understanding of the status, challenges, and consequences of menstrual hygiene practices among this population. The review highlights significant gaps in pre-menarcheal awareness, the urban-rural divide in hygiene practices, and the profound influence of socio-cultural taboos and restrictions that perpetuate stigma and silence. Limited access to affordable menstrual products and inadequate water, sanitation, and hygiene (WASH) facilities further exacerbate these challenges. Poor menstrual hygiene is linked to increased risks of reproductive tract infections, psychological distress, and significant school absenteeism, hindering educational attainment and perpetuating gender inequalities. While government and non-governmental initiatives are underway, their effectiveness is limited by implementation challenges and persistent socio-cultural barriers. The review concludes by recommending a holistic approach encompassing comprehensive education, improved access to resources, community engagement, and supportive policy changes

to ensure that adolescent girls in India can manage menstruation with dignity and health.

**Keywords:** Menstrual Hygiene, Reproductive Health, Taboo, Health Education, Adolescent

## INTRODUCTION

Menstruation, a cyclical natural physiological process, marks the onset of adolescence among girls and is vital to female reproductive health. The menstrual cycle involves a series of hormonal and physical changes that periodically prepare the body for ovulation and the uterus for pregnancy. This cyclical occurrence typically begins between the ages of 10 and 16 and plays a significant role in regulating reproductive hormones. While the menstrual cycle is a normal monthly function of a healthy female body, primary concerns include delayed menstruation, irregular cycles linked to hormonal fluctuations, and pain during menses. Regular ovulation is generally indicated by predictable and consistent intervals between menses, predictable and consistent durations of menses, and predictable and consistent patterns of flow.[1][2] It is a natural bodily process that, despite being innate to human existence, has garnered significant interest from a diverse range of scholars. These experts span fields from medical and health sciences to human and social sciences,

underscoring the multifaceted nature of this phenomenon. This bodily process has far-reaching implications.[3][4]

On a physical level, it can impede an individual's ability to perform daily activities, leading to a range of challenges, from diminished physical fitness to increased difficulties engaging with everyday tasks. Menstrual pain, discomfort, and fatigue often compel individuals to modify or halt their routines. Symptoms like dysmenorrhea and heavy menstrual bleeding significantly impact participation in sports and exercise. Psychologically, this process can be quite distressing, often engendering feelings of isolation as individuals may withdraw from social interactions and vital aspects of their lives routine.[5] Economically, the impact becomes even more significant. When this condition impedes individuals, they may face difficulties participating in activities requiring physical labor, ultimately affecting their ability to earn a living or contribute productively to society. Previous studies have demonstrated that menstrual health influences women's participation in the workforce. Specifically, excessive menstrual bleeding (menorrhagia) and painful periods (dysmenorrhea) have been shown to affect work performance. These conditions result in absenteeism and reduced productivity, thereby impacting professional opportunities and financial stability. Moreover, missed work and decreased efficiency lead to loss of income, unemployment, and broader economic implications. Many studies fail to include demographic or employment-related data, limiting the understanding of workplace disparities.[6][7] This combination of physical, psychological, and economic consequences illustrates the profound complexity and significance of this bodily process in everyday life. Menstruation significantly impacts health, especially when adequate hygiene practices are not observed.[8] [9] Research has demonstrated that inadequate menstrual hygiene can lead to various health complications, including infections, reproductive issues, and psychological distress. The use of

unhygienic menstrual products or infrequent changes can facilitate the proliferation of bacteria and fungi, resulting in conditions such as urinary tract infections (UTIs) and reproductive tract infections. Prolonged use of damp or non-sterile materials can also lead to dermatological issues, including rashes, pruritus, and general discomfort. Insufficient menstrual hygiene practices may further contribute to conditions such as bacterial vaginosis and pelvic inflammatory disease, which can subsequently affect reproductive health and fertility.[10] Additionally, a lack of access to appropriate hygiene products often results in heightened levels of stress, anxiety, and embarrassment, thereby adversely impacting mental well-being.[11][12] The inadequacy of menstrual hygiene facilities can also result in absenteeism from educational and occupational environments, ultimately limiting the socio-economic opportunities for affected individuals.

Therefore, it is essential to maintain adequate hygiene to mitigate these risks. The Centre for Disease Control and Prevention (CDC) and the World Health Organization (WHO) recognize the critical importance of hygienic practices during menstruation to mitigate health concerns and the broader implications for individual well-being. They emphasize the necessity of adopting hygiene practices throughout the menstrual cycle, which may involve a diverse array of products, including sanitary napkins, menstrual cups, tampons, and proper washing techniques. These recommendations are supported by previous studies that underscore the relevance of menstrual hygiene management. Effective menstrual hygiene management (MHM) is not merely a matter of personal cleanliness but a fundamental prerequisite for the health, dignity, and overall well-being. Proper MHM encompasses the use of clean menstrual absorbents, having the privacy to change them as frequently as needed, practicing good personal hygiene, and ensuring safe disposal of used materials. [10-14] Conversely, inadequate MHM can lead to a spectrum of adverse health outcomes,

including reproductive tract infections, negatively impact educational attainment, and significantly affect psychosocial well-being. The significance of menstrual hygiene extends beyond the realm of physical health.[15][16] It is linked to the fundamental principles of human rights, social justice, and the broader agenda of gender equality. [17] When adolescent girls are unable to manage their menstruation with dignity and safety, it undermines their sense of self-worth, restricts their participation in various aspects of life, and perpetuates existing gender inequalities.[18] This connection to fundamental rights necessitates a comprehensive approach that addresses not only the practical aspects of hygiene but also the societal and cultural factors at play.[19]

In India, menstrual hygiene management among adolescent girls is a significant public health concern, particularly in low- and middle-income communities. A systematic review of studies conducted between 2011 and 2021 found that the use of sanitary pads has increased considerably, along with improved hygiene practices such as perineum cleansing during menstruation. However, menstrual disorders such as dysmenorrhea, premenstrual symptoms, oligomenorrhea, menorrhagia, and polycystic ovary syndrome (PCOS) remain common, influenced by factors like socioeconomic status, diet, physical activity, and family history. Educational interventions have been shown to be effective in improving menstrual hygiene awareness and practices. Enhancing menstrual health education and accessibility to hygiene products is crucial to preventing reproductive health issues and ensuring better well-being for adolescent girls in India. [20] Numerous adolescent girls in the country encounter multifaceted challenges in managing their menstruation hygienically, influenced by a complex interplay of socio-cultural, economic, and infrastructural factors. The sheer magnitude of the adolescent population in India underscores the critical need for targeted interventions and policy initiatives to address

the widespread challenges associated with menstrual hygiene.[21][22] This narrative review aims to provide a comprehensive synthesis of the existing scholarly literature on menstrual hygiene among adolescent girls in India, drawing upon research indexed in Scopus, Web of Science, and Google Scholar. The objective is to elucidate the current state of awareness and knowledge, prevalent hygiene practices, the profound influence of socio-cultural factors, existing challenges in access and resources, the detrimental health implications of poor hygiene, the impact on educational attainment, the effectiveness and limitations of current interventions, and the persistent disparities across different segments of the population.

## **UNDERSTANDING MENSTRUATION AND HYGIENE PRACTICES**

A significant finding across multiple studies is that less than half of adolescent girls in India report having any prior knowledge or awareness about menstruation before experiencing menarche. This lack of preparedness can lead to fear, anxiety, and confusion at the onset of menstruation. Studies consistently show that awareness levels tend to be notably lower in rural areas and among girls from impoverished backgrounds. Mothers are frequently cited as the primary source of information about menstruation for adolescent girls. However, the information provided is often reported to be incomplete, inaccurate, or influenced by traditional myths and misconceptions. In contrast, teachers are reported as a less common source of information regarding menstruation and menstrual hygiene for girls. The prevalent lack of adequate premenarche awareness among adolescent girls in India represents a crucial gap in both formal and informal education systems, potentially contributing to negative initial experiences and hindering the adoption of proper hygiene practices. If girls are not provided with accurate and timely information about menstruation before it occurs, they are more likely to experience

shock, fear, and anxiety during their first period. This negative initial experience can then influence their subsequent attitudes towards menstruation and their willingness to adopt and maintain hygienic practices. Furthermore, relying on potentially misinformed sources like mothers perpetuates cycles of inadequate knowledge.[22][23]

Research indicates a clear urban-rural divide in menstrual hygiene practices. The use of commercially produced sanitary pads is more prevalent among adolescent girls residing in urban areas and has shown an increasing trend over time. Conversely, a substantial proportion of girls, particularly those in rural settings, continue to rely on the use of cloth as a menstrual absorbent, often under unhygienic conditions. Studies have highlighted that the inappropriate disposal of used menstrual products is a common practice among adolescent girls in India, posing environmental and health concerns. Furthermore, the frequency with which girls change their menstrual absorbents and their overall perineal hygiene practices are often reported as suboptimal, potentially increasing the risk of infections. The observed disparities in the choice of menstrual absorbents and disposal methods between urban and rural adolescent girls strongly suggest the influence of socio-economic factors, accessibility to resources, and varying levels of awareness and education. Girls in urban areas likely benefit from greater access to and affordability of commercial sanitary pads, coupled with potentially better awareness campaigns and waste management infrastructure. In contrast, rural girls may face financial constraints, limited availability of sanitary products, and lack of proper disposal facilities, leading to the continued use of cloth and less hygienic disposal practices. This highlights the need for targeted interventions that address these specific contextual challenges.[16][20]

Addressing the persistent gaps in awareness and promoting the adoption of safe and hygienic menstrual practices among

adolescent girls in India requires a multi-pronged approach that prioritizes comprehensive education and ensures equitable access to necessary resources across all geographical and socio-economic strata.[1]

## **SOCIO-CULTURAL ASPECT OF MENSTRUATION**

Menstrual hygiene practices in India are significantly shaped by deeply rooted socio-cultural taboos and constraints that continue to influence perceptions and behaviors. Menstruation is often viewed as an impure or unclean phenomenon within Indian society, contributing to stigma and silence surrounding the topic. Numerous myths and misconceptions related to menstruation persist across various communities, impacting how adolescent girls understand and manage their periods. [23] These pervasive socio-cultural beliefs create a significant barrier to open communication about menstruation, fostering an environment of shame, secrecy, and discomfort that hinders girls from seeking accurate information and adopting healthy hygiene practices. When menstruation is shrouded in taboo and associated with negative connotations like impurity, girls are less likely to discuss their experiences or concerns openly. This silence prevents the dissemination of accurate information and reinforces harmful myths, ultimately leading to inadequate menstrual hygiene management. The fear of social judgment or ostracization further exacerbates this issue, making it difficult for girls to challenge traditional beliefs or adopt more hygienic practices. [24] [25]

Adolescent girls undergoing menstruation in India frequently face a range of cultural restrictions that limit their participation in everyday activities, including religious ceremonies, entering the kitchen, and attending social gatherings. In some communities, there is a prevailing practice of advising girls to stay home from school during their menstrual periods, further disrupting their education. While the onset of

menarche is sometimes marked by celebratory rituals signifying a girl's transition to womanhood and marriageability, these celebrations often do not prioritize or adequately address the crucial aspects of menstrual hygiene.[23] These culturally imposed restrictions can lead to social isolation, reduced engagement in educational and community activities, and the reinforcement of traditional gender roles that limit girls' autonomy and opportunities. When girls are excluded from participating in normal social and educational activities due to menstruation, it not only disrupts their immediate well-being but also has long-term consequences for their social development, academic progress, and overall empowerment. These restrictions often stem from beliefs about impurity or the need to conceal menstruation, further perpetuating stigma and limiting girls' agency. [26]

Socio-cultural factors exert a significant influence on the knowledge, attitudes, and practices that adolescent girls adopt concerning menstrual hygiene management. Mothers, who often serve as the primary caregivers and initial source of information, play a crucial role in shaping their daughters' perceptions and behaviors related to menstruation, sometimes inadvertently passing on inaccurate information and perpetuating traditional practices. The intergenerational transmission of myths, taboos, and misconceptions regarding menstrual hygiene within families, particularly from mothers to daughters, presents a substantial challenge to efforts aimed at promoting more informed and hygienic practices. If mothers themselves lack accurate knowledge about menstruation or feel constrained by cultural norms in discussing it openly, they are likely to pass on these limitations to their daughters. This cycle of misinformation and discomfort can be difficult to break and requires targeted interventions that also address the knowledge and attitudes of mothers and other influential family members.[26][27]

Effectively addressing the challenges of menstrual hygiene among adolescent girls in

India necessitates a concerted effort to dismantle the deeply entrenched socio-cultural taboos and myths surrounding menstruation, fostering a more open, informed, and supportive societal environment. [24]

## **CHALLENGES IN ACCESS AND RESOURCES**

A significant barrier to proper menstrual hygiene management for many adolescent girls in India, especially those in rural areas and from low socio-economic backgrounds, is the limited access to affordable and hygienic menstrual products. The cost of commercially produced sanitary pads is often prohibitive for girls from economically disadvantaged families, making them inaccessible. Government-led schemes aimed at providing sanitary pads at subsidized rates have faced persistent challenges related to inconsistent supply chains and issues with the quality of the products distributed. The interplay of economic constraints and logistical hurdles in ensuring a reliable supply of affordable and quality sanitary products significantly impedes the widespread adoption of hygienic menstrual absorbents among adolescent girls in India. In situations in which adolescent girls cannot afford or readily obtain sanitary pads. In that case, they are often compelled to resort to using less hygienic alternatives such as old cloths, increasing their risk of developing reproductive tract infections and undermining their overall health and well-being. Addressing this challenge requires not only making products more affordable but also ensuring their consistent availability in all regions.[28][29]

The lack of adequate water, sanitation, and hygiene (WASH) facilities in both schools and homes across India poses a major impediment to effective menstrual hygiene management among adolescent girls. Many schools lack basic infrastructure such as separate and functional toilets for girls, a consistent supply of clean water for washing, and appropriate systems for the safe disposal of used menstrual products. The absence of

privacy within existing sanitation facilities further compounds the challenges faced by menstruating girls, making it difficult for them to manage their hygiene with dignity. The inadequacy of WASH facilities, particularly in school settings, creates an unhygienic and often uncomfortable environment for menstruating girls, significantly impacting their ability to manage their periods with dignity and potentially leading to increased absenteeism. When schools lack clean, private, and gender-segregated toilets equipped with running water and disposal options, girls may feel embarrassed or unable to change their menstrual absorbents frequently. This can lead to prolonged use of the same absorbent, increasing the risk of leakage, odor, and infections. The lack of privacy can also heighten feelings of shame and anxiety, contributing to girls missing school during their periods to avoid these challenges.[30][31]

A notable gap exists in the provision of adequate puberty education and comprehensive information specifically focused on menstrual hygiene management for adolescent girls in India. Teachers, who could potentially play a crucial role in disseminating this information, are often not adequately trained or may feel uncomfortable discussing menstruation and related topics with students. While awareness programs on menstrual hygiene have been initiated, they may sometimes focus narrowly on the use of specific products without providing broader education on the physiological aspects of menstruation, hygienic practices, or addressing prevalent myths and taboos. The lack of comprehensive and effectively delivered educational programs on menstrual health and hygiene perpetuates misinformation, reinforces existing societal stigmas, and ultimately hinders the adoption of safe and hygienic practices among adolescent girls. Without access to accurate and comprehensive education, adolescent girls may rely on incomplete or incorrect information from peers or family members,

perpetuating unhygienic practices and harmful beliefs. Effective educational programs should cover the biological processes of menstruation, the importance of hygiene, proper use and disposal of menstrual products, and address common myths and misconceptions in a sensitive and age-appropriate manner. [30][32] Overcoming the challenges in menstrual hygiene management for adolescent girls in India requires a concerted effort to address the systemic issues of limited access to affordable products, inadequate WASH infrastructure, and the lack of comprehensive and effective educational support. [31]

### **IMPACT ON EDUCATIONAL ATTAINMENT**

A significant proportion of adolescent girls in India report missing school days during their menstrual periods, a trend consistently documented across various studies.[33] The primary reasons cited for this absenteeism include the lack of adequate and private toilet facilities in schools, the fear of leakage or staining of clothes due to inadequate menstrual products, the experience of menstrual pain and discomfort, and culturally imposed restrictions on attending school while menstruating. Notably, studies have shown that school absenteeism rates tend to be higher in schools that lack proper WASH infrastructure, particularly separate and functional toilets for girls.[31] Poor menstrual hygiene management emerges as a major contributing factor to school absenteeism among adolescent girls in India, directly hindering their fundamental right to education and impacting their academic progress. When girls are forced to miss several days of school every month due to the challenges associated with managing their menstruation without proper facilities or products, it creates a significant disadvantage in their educational journey. This lost learning time can lead to them falling behind in their studies, experiencing lower academic performance, and in some cases, even dropping out of school altogether, thus limiting their future opportunities.

Even when adolescent girls in India do attend school during their menstruation, the difficulties associated with poor MHM can negatively affect their ability to fully engage in academic activities and participate in daily school life. Many reports missing class tests and examinations due to pain, anxiety, and fear of leakage. Menstrual pain is a frequently reported cause for reduced concentration in class and absenteeism, further underscoring the impact on academic engagement. Participation in sports and other extracurricular activities is also often curtailed due to discomfort and the challenges of managing menstruation hygienically in the school environment. The pervasive challenges of poor menstrual hygiene not only led to absenteeism but also significantly impair the academic performance and overall school experience of adolescent girls in India. The constant worry about managing menstruation discreetly and hygienically in the absence of adequate facilities can be a major distraction for girls in school. Fear of staining their clothes, concerns about odor, and the physical discomfort of pain can all contribute to reduced concentration, making it difficult for them to focus on their studies and participate fully in classroom activities. This ultimately impacts their learning outcomes and overall academic achievement. [33][34][35] The cumulative effect of frequent school absenteeism and compromised academic engagement due to inadequate menstrual hygiene management can have detrimental long-term consequences for the educational attainment and future opportunities of adolescent girls in India, thereby perpetuating gender inequalities. [26] Addressing the multifaceted issues surrounding menstrual hygiene is, therefore not only a matter of health and well-being but also a crucial step towards achieving educational equity and empowering girls to reach their full potential in India. When girls are consistently disadvantaged in their education due to a lack of proper menstrual hygiene management, it limits their prospects for higher education,

employment, and economic independence. By ensuring that menstruation does not become a barrier to their schooling, we can help break the cycle of poverty and empower them to become active and contributing members of society, ultimately fostering greater gender equality. The lack of adequate menstrual hygiene management has a significant negative impact on the educational attainment of adolescent girls in India, perpetuating gender disparities in education. [32][33]

### **CONSEQUENCES OF POOR MENSTRUAL HYGIENE**

A significant body of research has established a strong link between poor menstrual hygiene practices and an elevated risk of urogenital and reproductive tract infections (RTIs) among adolescent girls. [15] Studies have specifically indicated that the use of unhygienic menstrual absorbents, such as old cloths, is associated with a higher prevalence of RTIs compared to the use of sanitary pads. [15] [36] The heightened susceptibility to RTIs due to poor menstrual hygiene represents a substantial health burden for adolescent girls in India, potentially leading to long-term complications affecting their reproductive health. When girls use unhygienic materials or do not maintain proper hygiene during menstruation, it creates an environment conducive to the growth of harmful bacteria and other pathogens in the reproductive tract. Untreated RTIs can lead to serious consequences, including pelvic inflammatory disease, infertility, ectopic pregnancies, and an increased risk of other infections. [37] Therefore, promoting hygienic menstrual practices is crucial for preventing these adverse health outcomes. Beyond RTIs, poor menstrual hygiene can contribute to various other health problems, including general discomfort, increased psychological stress, and a higher risk of bacterial infections. Many adolescent girls experience common menstrual health issues such as heavy menstrual bleeding and dysmenorrhea (painful periods), which can

significantly impact their overall well-being and daily functioning.[7] The physical discomfort and emotional distress associated with inadequate MH can profoundly affect adolescent girls' daily lives and overall quality of life. Girls who are constantly worried about managing their menstruation without proper resources or who experience significant pain and discomfort are likely to suffer from increased stress and anxiety. [5] This can impact their concentration, sleep patterns, and ability to participate in normal activities, ultimately diminishing their overall well-being and hindering their personal and academic development. The challenges associated with poor menstrual hygiene often led to feelings of shame, anxiety, embarrassment, and a sense of being unclean among adolescent girls. Experiencing menarche without adequate preparation and support can be a traumatic event for some girls, leading to significant mental strain and emotional distress.[38] The prevailing stigma surrounding menstruation and the fear of having their menstrual status discovered by others contribute to feelings of discomfort, isolation, and the need for secrecy. The psychological burden imposed by poor MH and the associated societal stigma can have a profound and lasting impact on adolescent girls' self-esteem, self-confidence, and overall mental health. When a natural biological process like menstruation is stigmatized and linked with feelings of shame or impurity, it can deeply affect a girl's sense of self-worth and normalcy. This internalized stigma can lead to anxiety, depression, social withdrawal, and a diminished sense of agency, impacting their mental and emotional development during a critical stage of their lives. The detrimental consequences of poor menstrual hygiene among adolescent girls in India extend far beyond physical health risks, significantly impacting their psychological and emotional well-being, and emphasizing the urgent need for comprehensive interventions.

## **EXISTING EFFORTS AND THEIR LIMITATIONS**

The Government of India has increasingly recognized the importance of addressing menstrual hygiene management among adolescent girls. It has launched several national and state-level programs and schemes aimed at improving the situation. [39-41] Notable initiatives include the integration of menstrual hygiene promotion within the National Rural Health Mission (NRHM), the implementation of the Menstrual Hygiene Scheme (MHS) which aims to increase awareness and access to affordable sanitary napkins, and the inclusion of MHM as a priority area under the Swachh Bharat Mission (SBM). Furthermore, various state governments have introduced their initiatives, such as the free sanitary napkin distribution program "KHUSHI" in Odisha and similar schemes in other states like Tamil Nadu.[42] While these governmental efforts represent a significant step forward in acknowledging and addressing the issue of menstrual hygiene among adolescent girls in India, their effectiveness is often hampered by challenges in ensuring consistent and reliable supply chains, maintaining the quality of distributed products, and establishing adequate infrastructure for the safe and environmentally sound disposal of menstrual waste. The mere existence of policies and schemes is not sufficient to guarantee their success. Effective implementation requires robust logistical frameworks to ensure that sanitary products reach the intended beneficiaries regularly and are of acceptable quality. Additionally, parallel efforts are needed to establish and promote proper disposal mechanisms to avoid environmental pollution and potential health hazards associated with improper disposal practices. Monitoring and evaluation are also crucial to identify gaps and areas for improvement in these programs.

Numerous educational programs and interventions have been implemented across India with the goal of improving adolescent girls' knowledge, attitudes, and practices



related to menstrual hygiene management. [20] These interventions have often demonstrated positive impacts, leading to increased awareness about menstruation as a normal physiological process, a greater adoption of hygienic menstrual absorbents, and in some cases, a reduction in school absenteeism among participating girls. Well-designed and effectively delivered educational interventions play a crucial role in enhancing menstrual health literacy, dispelling harmful myths and misconceptions, and promoting the adoption of safer and more hygienic menstrual practices among adolescent girls in India. By providing accurate, age-appropriate information about menstruation, hygiene practices, and available resources, these programs empower girls to manage their periods with greater confidence and reduce the stigma and anxiety often associated with it. The involvement of trained educators and the use of interactive methods can further enhance the effectiveness of these interventions in bringing about positive behavioral changes.

Non-governmental organizations (NGOs) and various community-based initiatives are actively involved in addressing the challenges of menstrual hygiene in India through awareness campaigns, distribution of sanitary products, and community-level education programs. Accredited Social Health Activists (ASHAs), who are frontline community health workers, also play a significant role in promoting menstrual hygiene and distributing subsidized sanitary pads in rural areas.[46] Collaborative efforts between government agencies, NGOs, community health workers, schools, and families are essential for creating a comprehensive and sustainable ecosystem that supports adolescent girls in managing their menstruation with health and dignity. A multi-sectoral approach that leverages the strengths and resources of different stakeholders can lead to more effective and far-reaching interventions. NGOs often have strong community connections and grassroots-level understanding, while

government agencies can provide the necessary scale and policy support. Community health workers act as vital links to reach girls and families in remote areas, and the involvement of schools and families ensures a supportive environment for promoting positive change.

Despite these ongoing efforts, deeply entrenched socio-cultural stigmas surrounding menstruation continue to act as significant barriers to progress. There is a relative lack of research and focus on addressing menstrual health disorders, such as dysmenorrhea, and their effective management among adolescents. Gaps persist in the effective implementation and monitoring of existing programs, leading to inconsistencies in their impact and reach. Further research is needed to better understand and address the psychosocial well-being of adolescent girls during menstruation. Current interventions, while valuable, often fall short of achieving their full potential due to a lack of comprehensive strategies that simultaneously address socio-cultural barriers, ensure effective program implementation, and adequately focus on the broader spectrum of menstrual health needs beyond just hygiene practices. Simply providing sanitary pads or conducting awareness sessions without tackling the underlying societal taboos, ensuring access to clean water and private sanitation facilities, or addressing issues like menstrual pain will have a limited and potentially unsustainable impact. A more holistic approach is needed that integrates these different components and is tailored to the specific needs and contexts of adolescent girls across India.

## **RECOMMENDATIONS FOR A HOLISTIC APPROACH**

Implement age-appropriate and culturally sensitive menstrual health education as an integral part of the school curriculum for both girls and boys, commencing before the onset of menarche. The curriculum should encompass detailed information on the menstrual cycle, hygienic practices for

managing menstruation, safe and environmentally sound disposal methods for menstrual products, and open discussions to address prevalent myths, taboos, and misconceptions.[25] Invest in training programs for teachers and community health workers to equip them with the necessary knowledge, skills, and confidence to deliver accurate and sensitive menstrual health education effectively.[26][30-31] Providing comprehensive education is the foundational step towards destigmatizing menstruation, empowering girls with accurate knowledge about their bodies, and fostering a supportive environment where open conversations can occur. By integrating menstrual health education into the formal school system and ensuring that educators are well-prepared to deliver it, many adolescent girls can be reached before they experience menarche. Including boys in these educational initiatives is equally important as it helps to normalize menstruation, reduce stigma, and cultivate empathy and support among peers. Ensure universal access to affordable and high-quality menstrual products for all adolescent girls in India, particularly focusing on reaching those in rural, remote, and low-income areas. [38] Strengthen the supply chain mechanisms and implement stringent quality control measures for government-subsidized sanitary pad distribution programs to ensure reliability and effectiveness. Promote awareness and facilitate access to a diverse range of menstrual products, including sustainable and eco-friendly options like reusable pads and menstrual cups, alongside disposable sanitary pads. [28] Addressing the economic and logistical barriers that limit access to appropriate menstrual products is paramount for enabling adolescent girls to adopt and maintain hygienic menstrual practices. Making a variety of safe, affordable, and quality menstrual products readily available ensures that girls have the means to manage their menstruation hygienically, regardless of their socio-economic background or geographical location. This may involve exploring innovative distribution channels,

subsidizing products effectively, and raising awareness about the different options available.

Prioritize the improvement of water, sanitation, and hygiene (WASH) infrastructure in all schools across India, ensuring the availability of clean, private, and gender-segregated toilets with a consistent supply of water and soap.[27][30] Establish and maintain functional systems for the safe and hygienic disposal of used menstrual absorbents in both school and community settings, considering environmentally sustainable options. Providing adequate and well-maintained WASH facilities in schools is fundamental to creating a supportive and dignified environment that enables adolescent girls to manage their menstruation effectively and without fear or embarrassment. Ensuring that schools have clean, private toilets with running water and proper disposal mechanisms will significantly improve girls' ability to change their menstrual products regularly and maintain personal hygiene. This will not only reduce the risk of infections and discomfort but also alleviate anxiety and encourage regular school attendance during menstruation. Implement comprehensive community engagement programs to actively involve families, community leaders, and religious figures in addressing the socio-cultural taboos and myths surrounding menstruation, fostering a more open and supportive social environment. Develop targeted awareness campaigns that specifically engage boys and men in conversations about menstruation to promote empathy, understanding, and support for menstruating girls and women.10 Utilize a variety of media platforms, including digital and social media, to disseminate accurate information about menstruation, challenge negative stereotypes, and normalize discussions around menstrual health and hygiene. Addressing the deep-seated stigma associated with menstruation requires a concerted effort to engage the entire community in open and honest dialogue,

challenging harmful norms and promoting positive attitudes. By involving all members of the community, including those who may perpetuate negative beliefs or restrictions, a more supportive and understanding environment for adolescent girls can be created. Engaging boys and men in these conversations is particularly important for fostering empathy and breaking down gendered stereotypes associated with menstruation.

## CONCLUSION

This narrative review has highlighted the significant challenges faced by adolescent girls in India regarding menstrual hygiene, including a lack of adequate awareness and knowledge, the pervasive influence of socio-cultural taboos and myths, limited access to affordable and hygienic menstrual products, and inadequate water, sanitation, and hygiene facilities in schools and communities. These challenges have profound consequences, leading to an increased risk of reproductive tract infections and other health issues, as well as contributing to school absenteeism and hindering educational attainment.

While the Indian government and various organizations have made strides in addressing menstrual hygiene, sustained and intensified efforts are crucial to overcome the deeply rooted barriers and ensure that all adolescent girls have the support and resources they need. A multi-faceted approach is essential, encompassing comprehensive education, improved access to resources, active community engagement, and supportive policy changes.

Ultimately, improving menstrual hygiene management is not just about addressing a health issue; it is about upholding the dignity, well-being, and fundamental rights of adolescent girls in India. By ensuring that girls can manage their menstruation safely, hygienically, and without shame, we can contribute to their overall health, empower them to reach their full educational and personal potential, and foster greater gender equality within the nation.

## Declaration by Authors

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