

MENSTRUAL WASTE DISPOSAL: RULES AND REGULATION

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ABSTRACT

M.H.M. (menstrual hygiene management) has gained much attention nowadays. Many literature reviews have been published on the topic. Initial articles and analyses appear to concentrate on absorbent access and usage rather than menstrual waste disposal. The primary aim of this review to fill a gap in the literature by focusing mainly on the safe disposal of menstrual waste. The study found that menstrual waste disposal is often overlooked by M.H.M. and sanitation value chains, resulting in poor disposal and negative consequences for consumers, sanitation systems, and the environment. Further research is needed to understand better M.H.M. waste sources, disposal behaviours, absorbent materials, and waste management technologies to provide women and girls with health, protection, mobility, and dignity.

Key words : Water and sanitation, Menstrual hygiene management, Menstrual hygiene waste disposal, Environmental health, Sanitary waste

INTRODUCTION

Globally, women are faced with adequate menstrual hygiene management (M.H.M.) facilities, which are mainly connected with water, sanitation and hygiene provision in the public arena and private space. Due to the lack of separate toilets with a safety lock system, the unavailability of disposal of used sanitary product and water to wash hands, women and girls face challenges in maintaining menstrual hygiene in a dignified manner (Sommer, 2015). According to various reports, menstrual hygiene management is one of the most challenging phases for women, where clean water and toilet facilities are primarily insufficient. Traditional cultures and myths make the situation complicated. Access to menstruation hygiene information is considered a basic 'Human Right' globally (Menstrual Hygiene, 2020). May 28, Menstrual Hygiene Day (M.H. Day) is dedicated to raising awareness about menstruation. The thought behind the M.H. Day is to give a secure world for every woman and girl where they can manage their menstruation hygienically through safety, privacy, and dignified way (Goddard, 2019). However, the

adverse situation harms education, work and health. The right to sanitation means a safe, hygienic, secure, socially and culturally acceptable, private and public secure place where fearless menstrual hygiene can be managed. However, situations often create barriers to realizing women's human rights (Understanding Menstrual Hygiene Management & Human Rights, 2017).

Managing Menstrual Hygiene (M.H.M.) in a Global Perspective

Since menstrual hygiene management is a global issue, so various research has been conducted worldwide, women generally use cloth in Somali Island to absorb their monthly flow. When water is a scare, it is difficult to wash the fabric until re-used and face chronic infections. In northern Uganda (among the South Sudanese refugees), most women use cut-out cloth or fabric to absorb their monthly flow. Water is a matter of washing a menstrual cloth. Privacy is also a key factor because, in most cases, men and women use the same latrines that affect human dignity (Understanding the menstrual hygiene practices of Somali and South Sudanese refugees, 2014). A cross-sectional survey was

conducted among primary school girls in Kajiado County, Kenya. It is found that pubescent girls had poor M.H.M. practices, primarily due to lack of latrine privacy and fear of being teased by boys (Korir, 2018). Similar studies have been conducted among menstrual women in countries such as South Sudan, Bangladesh and Pakistan. In all cases, women and girls are not familiar with proper menstrual hygiene practices; they are more comfortable wearing reusable clothing without proper drying (Delu, 2018; Alam, 2017; Ali, 2009). A study on menstrual hygiene was published in the Colombo Telegraph, which reported that of the 4.2 million menstrual women in Sri Lanka, only 30% use disposable sanitary napkins. Due to its high price and stigma, women have neglected proper hygiene management (Arudpragasam, 2018). Another research in Nepal had shown that girls do not change pads during school hours due to poor latrine conditions, which creates a serious health problem for girls (Singh, 2019). In North Ethiopia, only one-third of the girls used sanitary napkins during menstruation. The rest were absent from school during that period due to unhygienic menstrual Management (Tegegne, 2014). Globally, M.H.M. is a broader systemic factor linking menstruation to health, well-being, gender equality, education, equity, empowerment, and rights. Various published reports and case studies have summarized these systematic factors as accurate with knowledge, participation and facilities.

Management of menstrual hygiene in an Indian perspective

Globally, menstrual hygiene control is one of the indispensable components of this WASH (Water Sanitation and Hygiene) programme. There is no direct measure of menstrual health and hygiene in the United Nations Sustainable Development Goals (S.D.G.s) (Tiwary, 2018). According to the Indian census, 31 crores of female belong to the reproductive age group (15–49 years of age) (Census of India, 2011). After independence, India's Government has included M.H.M. in its national policies and programs to improve women's health, well-being, and nutritional status at the puberty level. UNICEF has also provided strategic advice and awareness-raising resources to combat behavioural change at the grass-root level. Capacity building of frontline community frameworks across all social sectors, making stakeholders more informed and developing WASH facilities, including

safe disposal options in India, is the most vital issue (WASH and Health for Menstrual Hygiene Management, 2020). The M.H.M. is made an inseparable part of the "Swachh Bharat Mission". 'Ministry of Drinking Water and Sanitation has issued comprehensive guidance for state governments on the district-level improvement M.H.M. from the base level (Swachh Year- Ender, 2017). "Ministry of Health and Family Welfare" listed M.H.M. as a priority concern (National Health Mission, 2020). Training Module for ASHA (Accredited Social Health Activist) on Menstrual Hygiene is also implemented to build health workers on the village level (National Rural Health Mission, 2020). The SABLA program, coordinated by the Ministry of Women and Child Development, has developed an awareness program on M.H.M. to improve health, nutrition and empowerment for adolescent girls (National Institute of Public Cooperation and Child Development, 2020). 'Swachh Bharat: Swachh Vidyalaya' was launched in 2009 (March) to ensure that every school in India, from the Panchayat level to the Municipal Corporation, must set up well-maintained WASH facilities, including soap, private changing rooms, sufficient wash water and disposal facilities for used menstrual absorbents (Swachh Bharat Swachh Vidyalaya: A National Mission, 2020). On International Women's Day (March 8, 2018), the Government released "Suvidha" 100% oxy-biodegradable sanitary napkins. In this pack of four sanitary pads priced Rs. 10 packages available at "Pradhan Mantri Bhartiya Janaushadhi Pariyojana Stores". On Women's Day, Government Launches Biodegradable Sanitary Pads for Rs. 2.50/ (Abraham, 2018). The Menstrual Health Alliance India reports stated that 121 million girls and women are using an average of eight disposable (non-compostable) sanitary pads each month. It is estimated that an average of 113,000 tons of menstrual waste is disposed of annually as a landfill (Malaviya, 2019). The South Delhi Municipal Corporation inaugurated the 'Pink Toilet' model on the eve of 'International Day for Girl Child.' The toilet is fitted with a vending machine for sanitary napkins, an incinerator for reliable menstrual waste disposal. On Children's Day, the Government of Kerala launched the 'She Pad' program. In this system, 300 state schools provided menstrual hygiene pads (Centre's feminine-friendly gesture: Attappadi-model 'pink toilets' built-in all schools, 2017).

Nowadays, sanitary waste disposal is also a significant step for the nation. The plastics used in disposable sanitary napkins at the base are not biodegradable, contributing to health and environmental hazards. The 2016 'Sanitary Waste Management Rules' (India) are:

According to Rule 3(19), "dry waste" means waste other than biodegradable like sanitary napkins and diapers, etc.

Rule (4)(b) stated that the containers must be issued by the manufacturers or brand owners of such items, such as diapers, sanitary pads, etc., in the required wrapping material as directed by local authorities. It shall have a position the same in a bin intended for dry or non-biodegradable waste.

According to rule 15(iv) and (vi), the local authority and Nagar panchayat should raise awareness of non-biodegradable waste through information, education, and communication campaigns.

By Rule 17, the manufacturer's responsibility or the owner of the brand of disposable sanitary napkins and diapers is specified as follows: All producers or brand owners of such goods shall provide the local authorities with the requisite financial support for the establishment of a waste management system. Non-biodegradable packaging material shall be placed in order so that it can be recycled. Manufacturers or owners of brands shall supply recyclable items. They shall have a wrapper for the safe disposal of each napkin. Manufacturers, brand owners and marketing firms shall inform the masses to wrap and dispose of their goods in an environmentally friendly manner (Guidelines for Management of Sanitary Waste, 2016).

Menstrual hygiene scenario

Both community-based cross-sectional types of research performed in India's different states showed the difference between hygienic and non-hygienic methods very clearly. The National Family Health Survey (NFHS-4) surveyed (2015-16) found that only 44% of young women in India used hygienic methods during menstruation. Regarding menstrual hygiene practices, the difference lies between urban and rural areas. The range of hygienic methods ranged from 30% in Bihar to 70% in Uttarakhand (Kathuria, 2018). A 'District Level Household and Facility Survey' was conducted (2007-08), 28 states and 6 union territories in India. This study showed that only one-third of the population surveyed used hygienic approaches

during menstruation. The remainder of the population, however, followed the unhygienic method. It is shown that rural-urban and rich-poor inequality exists in hygienic practices during menstruation (Prioritising Menstrual Hygiene Management in India, 2018). A study was conducted (2007-08) by the International Institute for Population Sciences, Mumbai, where out of the 34 States and Union Territories, 601 districts were chosen for research purposes. The result was similar to the previous study (Singh, 2018). A community-based cross-sectional study in the 'Rural health and training centre' field practice area of Chiraigaon Block (Varanasi) found that only 31 per cent of respondents used sanitary pads for menstruation. Self-reported reproductive tract infection (R.T.I.) was found more in respondents who did not maintain hygienic activities (6.6 per cent) relative to those who upheld hygiene (2.6 per cent) (Kansal, 2018). In 2017, a study was conducted in the slums of Guwahati City, where it was found that U.T.I. (Urinary Tract Infection) and excessive vaginal discharge were common among menstrual women (Barthakur, 2017). Pathak and Pradhan (2016) firmly believe that the only solution to U.T.I. is the use of sanitary napkins (Pathak, 2017). Manhas et al. found that the myths and lack of menstruation knowledge were quite clearly prevalent among Kargil tribal females (Manhas, 2017). Another research was organized in Tamil Nadu, and it was found that 90% of girls had no habit of washing their genitals regularly with soap and water during menstrual days (Priya, 2016). In the Kheda district's rural area, the need for correct and appropriate information on menstruation for adolescent girls was highlighted (Prajapati, 2015). Balaji *et al.* Found that hygiene practices in urban areas were higher than in rural areas (Arumugam, 2014). 'Rural Health Services Project' (CRHSP), located in Ballabgarh, Haryana, has shown that women in the reproductive age group do not have sufficient knowledge of menstruation (Misra, 2013). Another research focused on Amritsar, Punjab, found that teenage girls were unaware of menstrual problems and were practising non-hygienic practices in their everyday lives (Kamaljit, 2012). Residential colonies and urban slums have been surveyed in Ranchi. The result was that girls' socio-economic status and education affected menstrual practice among adolescent girls (Kumar, 2011). In the analysis of Rongram Block (West Garo Hills district of Meghalaya), the respondents had an average level of knowledge of

menstrual hygiene issues (Nagar, 2010). Menstrual hygiene management (M.H.M.) is mainly concerned with the lack of access to sanitary products due to financial restrictions in many parts of the world (Menstrual Hygiene Management: National Guidelines, 2015). According to WHO (World Health Organisation) and UNICEF (United Nations Children's Fund), proper menstrual hygiene management has been related to various factors. Dignified menstrual hygiene management related to proper hygienic absorbent products and privacy improvements. Secure eco-friendly and convenient facilities for disposing of used menstrual materials are essential parts of this problem (Guide to menstrual hygiene materials, 2019). Improved Menstrual Hygiene Management (M.H.M.) is specifically related to the Sustainable Development Goals (Tiwary, 2018). Target 6 (S.D.G.s) addressed the idea of availability and sustainable water in sanitation management for everyone in a secure manner in public and private space (Sustainable Development Goal, 2018).

Role of UNICEF

UNICEF envisages a world where every girl can read, play and protect her health without experiencing tension, shame or unnecessary barriers to knowledge or supplies materials during menstruation (Guidance on Menstrual Health and Hygiene, 2019). Resources for menstrual hygiene, guidance and awareness are also in the preliminary list. Inaccessible WASH (water sanitation and hygiene) facilities, access to lack of information and insufficient materials are an obstacle for hygienic and dignified menstruation of women and girls (House *et al.*, 2012). UNICEF Executive Board approved the M.H.H. as one of UNICEF's five main goals for adolescent girls in their 'Gender Action Plan' (G.A.P.). Improving M.H.H. has become a core part of UNICEF's dedication to ensuring that girls grow up safe and achieve their full potential. Duration and poverty is a global problem for the menstruation of women and children. Gender disparity, global poverty, humanitarian crises and harmful practices can turn menstruation into a time of deprivation and stigma that can underlie women's enjoyment of fundamental human rights (Against My Will, 2020).

In most cases, women and girls have restricted access to proper absorbent fabrics, leading to repeated use of the same cloth pads, which can cause infection. The time of poverty is also related to

lack of access to toilet facilities, hand washing facilities and waste disposal problems (Mahon and Fernandes, 2010). UNICEF works to improve menstrual health and hygiene for girls and women in four areas: social support, information and skills, facilities and services, and access to absorbent and supporting materials (Guidance on Menstrual Health and Hygiene, 2019).

WASH Programme and Menstrual Hygiene:

Evidence has shown that low toilets, water and washing facilities function as barriers, especially for post-menarche girls when their menstrual hygiene management (M.H.M.) is most required. Water Sanitation and Hygiene (WASH) services are inaccessible or inadequate in most of society. For post-2015, Global monitoring of WASH, hygiene promotion has been established as a critical factor, and M.H.M. has been suggested as one of the crucial aspects to be observed (Guidance on Menstrual Health and Hygiene: Programme Division/WASH, 2019). It is estimated that at least 500 million women and girls faced problematic menstrual hygiene management (M.H.M.). Most of these situations are common in public places, such as in schools or workplaces. The shortage of separate toilets and an improper closed-door system with sufficient water facilities complicates the situation.

Disposal Scenario of menstrual waste in India

Menstruation remains taboo and stigmatized in India, although it affects nearly 336 million girls and women of reproductive age (Malaviya, 2019). Menstrual hygiene management (M.H.M.) is the process where women have a right to handle their menstrual period in a dignified way. This scenario starts with simple and inexpensive access to feminine hygiene items that absorb or extract menstrual blood and sustainably disposing of used products.

Solid Waste Management Rules, 2016

The Environment (Protection) Act, 1986, introduced by the Ministry of Environment, Forest and Climate Change, released the Solid Waste Management Rules in 2016 (SolidWasteManagementRules, 2016). The rules aim to develop solid waste in India's urban areas. The SWM (Solid Waste Management) Rules also note that the E.P.A. has different rules for handling other forms of waste, such as industrial waste, biomedical waste, and e-waste. However, the SWM Rules do not apply to any of these waste

categories. Any waste generator (anyone who creates solid waste) is expected to collect and sort all waste into three categories: biodegradable, non-biodegradable, and domestic hazardous waste. Insanitary waste is considered non-biodegradable waste (Solid Waste Management Rules, 2016).

Management of sanitary waste by Central Pollution Control Board (Guidelines)

With the SWM Rules, the Central Pollution Control Board (CPCB) establishes guidelines for managing various waste forms. In May 2018, the CPCB (Central Pollution Control Board) published recommendations for sanitary waste management.¹⁸ (CPCB Guidelines on Sanitary Waste, 2015). These guidelines describe different sanitary waste disposal options, as well as the types of waste each option can manage, where they can be installed and used, and the technical requirements or pollution control regulations that may apply to their manufacture and usage, such as (i) low cost, locally made incinerators, (ii) electric incinerators, (iii) high-temperature incinerators for bio-medical waste, (iv) deep burial, (v) composting, and (vi) pit burning (Guidelines for Management of sanitary waste as per Solid Waste Management Rules, 2016).

Swachh Bharat Mission

Menstrual waste disposal under SBM-Urban and SBM-Gramin guidelines

The Swachh Bharat Mission (S.B.M.) was launched in 2014 to make India an open defecation-free (ODF) country with well-developed solid waste management systems at the municipal level. There are different guidelines for rural and urban areas under S.B.M. The norms and specifications for constructing public/community toilets under the SBM-U guidelines include installing incinerators in each toilet block. Similarly, the SBM-Gramin (SMB-G) guidelines for rural areas address the implementation of adequate facilities for ensuring M.H.M. and require that safe disposal of menstrual waste be a priority, which can be accomplished with the installation of incinerators (Ministry of Housing and Urban Affairs, Government of India, 'Guidelines for Swachh Bharat Mission-Urban', 2017).

ODF (Open Defecation Free) Protocols and Swachh Survekshan

Under the S.B.M.'s goals, cities must achieve 100% open defecation free. The S.B.M. has compiled a

collection of principles that can be used as a guide to reaching the status of an "Open Defecation Free" city. According to the protocols, men and women must have a separate community or public toilet facilities (Ministry of Housing and Urban Affairs, Government of India, 2019).

Sarva Shiksha Abhiyaan and Menstrual Hygiene

Ministry of Human Resource Development (H.R.D. Ministry), the Department of School Education and Literacy has released a set of guidelines called the "Draft Structure for Implementation of the Samagra Shiksha - an Integrated System School Education". Under Samagra Shiksha, a scheme is implemented by the Government under the banner of Sarva Shiksha Abhiyaan, where having separate toilet facilities available for girls in schools is one of the framework's components. According to the structure, both toilets must also have an environmentally friendly incinerator (Ministry of Human Resource Development, Government of India, Samagra Shiksha, An Integrated Scheme for School Education: A Framework for Implementation, 2018).

Concept of composting of menstrual waste

Composting is a waste disposal system where organic waste decomposed with an oxygen-rich environment. Composting waste has been considered a viable option for menstrual waste, especially for products such as compostable and recyclable pads. Composting pits can be built in urban and rural areas and schools to encourage community-based and community-led composting. Composting is only a viable choice for compostable sanitary pads (such as those made of natural fibres), but not for pads made of bleached cellulose or plastic coating. However, to ensure that composting is used correctly, the type of materials and their disability must be addressed. Composting pits must be designed according to requirements to make composting easier (Pushing the Boundaries on the M.H.M. Dialogue in India, Disposal and Treatment, 2017). Composting pits may be constructed by ensuring that the used menstrual absorbent is mixed and filled with leaves, dried plants, or other biodegradable material. According to UNICEF's technical guidelines, the pit should be properly moist, which may necessitate watering during dry periods. Once filled, it should be properly covered with soil to prevent foul odours, rodent destruction, and so on. The pit's minimum dimensions should be

0.5 m x 0.5 m x 1.0 m, or better still, 1.0 m x 1.0 m x 1.0 m. (l x b x d).

Deepburial system

Deep burial is a low-cost method of disposing of menstrual waste that can be used in places where there is free land space, such as rural areas, are available. According to UNICEF guidelines, a deep burial pit may be constructed by ensuring that once the absorbent material has been placed within the burial pit, it is filled with soil or sand and not left exposed to the open air. The pit should be built at least 5 to 7 metres away from any sources of drinking water. The size will vary depending on the number of users, but the minimum requirements are 0.5 m x 0.5 m x 1.0 m, or better still, 1.0 m x 1.0 m x 1.0 m. (l x b x d). Deep burial, on the other hand, has several drawbacks and limitations. Deep burial, for example, is not a choice in areas with a high water level or regular rainfall and flooding. Deep burial can also cause embarrassment and privacy concerns for women and the inconvenience of collecting and transporting waste to the burial site. Furthermore, compostable pads and menstrual safety products, except pads with plastic parts, will be better suited for deep burial. (M.H.M. Guidelines: Technical Guide 2: Safe Disposal Incinerators, 2018).

Microwave Technology

Menstrual waste segregation is a problem in urban and rural areas, resulting in poor disposal of used menstrual safety items. Menstrual waste in India can cause toxins in the atmosphere if not properly disposed of for various reasons, ranging from women's privacy issues for discreet disposal to segregating various types of waste for suitable disposal. Microwave technology, which can kill pathogens in used sanitary products such as menstrual waste, is a revolutionary solution to this problem (Myles *et al.*, 2018).

Incineration

Incineration is a waste disposal method that involves burning waste at a high temperature and converting it to ash. The inclusion of incineration as a mode of disposal and treatment of menstrual waste in the SWM Rules, the Bio-Medical Waste Management Rules, 2016, the CPCB Guidelines on Sanitary Waste, and the M.H.M. Guidelines has accelerated its use in India. These laws drive flagship schemes like the Sarva Shiksha Abhiyaan under the Swacch Bharat Mission, actively

promoting incinerators' use ('Samagra Shiksha, 2018).

DISCUSSION

Dispose of used sanitary pads facing challenges worldwide (Kaur, *et al.*, 2018). WHO (World Health Organisation) and UNICEF (United Nations Children's Fund) found that it is essential for using soap and water to wash the body, and the right to clean and convenient facilities to dispose of used menstrual management materials are required. M.H.M. must be handled with respect and without discomfort or fear (Raising Clean Hands: Advancing Learning, Health and Participation through WASH in Schools, 2010). According to Bobel (2019), menstrual stigma is considered potent, pervasive, and influential if its severity varies from place to place. The taboos of menstruation help impose indignity on millions of women and children. Lack of facilities and adequate sanitary products may cause menstruating girls to feel discomfort in school and workplaces temporarily and often permanently. A menstruating woman has been menstruating on average for more than 25 to 30 years of her entire life, so proper toilet construction is necessary (Aidara, 2016). WSSCC (Water Supply and Sanitation Collaborative Council) argues that denying a woman's feminine hygiene needs violates her privileges. In this regard, the right to non-discrimination, equality, health, privacy and the right to freedom from cruel and degrading treatment from harassment and violence must be considered (Celebrating Womanhood: How better menstrual hygiene management is the path to better health, dignity and business, 2013). The M.H.M. Guidelines advised that separate toilets should ideally be equipped with cubicles to ensure the privacy of use, along with soap, water and waste disposal bins (Developing a dignified discourse around menstruation, 2020).

CONCLUSION

The first period is considered a celebration or fear all over the world. It signifies an essential transition to womanhood for every girl when they benefit from family and friends' support (Sivakami *et al.*, 2019). On average, a woman menstruates for about ten years during their lifespan (Chui, 2017). Many women do not have complete and accurate knowledge of menstruation as it is a normal

biological process. Educating the girls before their first period may build their confidence. They should provide such information at home and school regularly. Poor menstrual hygiene can pose physical health-related risks and urinary tract infections. Many girls and women have no option or minimal options for affordable proper menstrual materials. Proper access to private facilities with water and safer low-cost menstrual materials could reduce genital diseases. Especially during an emergency, the situation becomes more complicated. Globally, billions of people lack essential sanitation services, and they are from developing countries. Managing periods in a hygienic way at home is a significant challenge for women. In low-income countries, schools are facing a lack of adequate drinking water, sanitation and hygiene. This situation makes the scenario more crucial for girls and female teachers to manage their period, and sometimes they missed school or job during this time. All public places must provide running water, safe and clean toilets for menstruating women, which is a basic need. UNICEF is from the grassroots level association with local communities to promote positive hygiene habits, break down taboos and myth, and generate an excellent hygienic scenario in menstrual Management.

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