

Original Article

How Tamil Nadu Is Performing Better in Menstrual Hygiene Management in India: Evidence from National Family Health Survey (NFHS-4)

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Abstract

Background: Menstruation is an integral part and natural process among women and it involved many myths, customs and misconceptions in India. Menstrual Hygiene Management (MHM) is a problem for young girls in India. Along with basic sanitation facilities, young girls and women need access to clean and soft, absorbent sanitary products for a long run and protect their health. In Tamil Nadu, India, menarche of a girl is celebrated with the relatives and friends like a festival. **Objective:** This paper examines the initiatives taken by the state of Tamil Nadu of India and the various factors associated with the menstrual hygiene practice among young women. **Methods:** Data collected from the 4th round of National Family Health Survey (NFHS-4), conducted in 2015-16 were used for analysis. The sample consists of 14,949 young women in the age group of 15-24 years who have ever menstruated. **Results:** The state government's initiatives, series of activities, inter-departmental collaboration and coordination, participation of civil society and community helped Tamil Nadu state to perform in a better manner. The results reveal the odds for women in the richest quintile, higher education, living in urban areas with higher awareness and availability of flush toilets give higher odds ratio determining the factors associated with the usage of hygienic methods. **Conclusion:** For better menstrual hygiene it requires a very good knowledge and awareness on menstrual cycle, hygiene essentials, safe and secure sanitary products and good water, sanitation and hygiene (WASH) facilities.

Keywords: Menstrual hygiene, young women, Tamil Nadu, India

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Introduction

Menstrual Hygiene Management (MHM) has been identified as a major issue for adolescent girls, affecting their health and well-being, creating problems to pursue education and employment opportunities, and has adverse implications for the environment.¹ Menstruation is not just a personal and biological event in India, it also assumes as a social phenomenon related to many myths, misconceptions and misbeliefs.² Social and cultural beliefs, strong bondage by taboos and traditional customs during menstruation, and hesitation of parents to discuss the related issues

openly to their daughters has prevented the access to get the exact knowledge regarding menstrual hygiene practices.³ Better understanding of the good menstrual hygiene is crucial for the education, health and dignity of girls and women.⁴

According to Census 2011, women in the age group of 15-24 years constitute about 19 percent of the total female population of India.⁵ Hence, the monthly menstrual need of such a huge population has to be received proper attention. By recognizing the importance of promotion of menstrual hygiene, in June 2011, the Ministry of Health and Family Welfare (MoHFW) launched a menstrual

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hygiene scheme to make sanitary pads available to adolescent girls in rural areas of selected districts at a subsidized cost through Accredited Social Health Activists (ASHAs).⁶ From 2014 onwards, the scheme extended to all districts under Rashtriya Kishore Swasthya Karyakram (RKSK) to enhance knowledge about menstrual hygiene, improve hygiene practices, provide sanitary absorbents at subsidized cost, and raise awareness about MHM at school.^{7,8} To enhance the capacity building of ASHA's the "Training Module for ASHA on Menstrual Hygiene" is also used.⁹

Few states like Bihar, Madhya Pradesh and Assam performed very poor in terms of menstrual hygiene practices, with hygienic methods usage of 31 percent, 37.6 percent and 4.8 percent respectively according to NFHS-4.¹⁰ The other states such as Mizoram, Tamil Nadu, Kerala, Goa and Sikkim were performed well with 93 percent, 91 percent, 90 percent, 89 percent and 85 percent respectively in terms of menstrual hygiene practice. Tamil Nadu is moderately larger and populous state with 37 districts and more than half of the population is living in rural area. The state have more than 90 percent of the young women were practicing hygienic methods. Hence, this paper examines the initiatives taken by the Tamil Nadu state government regarding menstrual hygiene management and factors associated with menstrual hygiene practices.

Methods

Data from the fourth round of National Family Health Survey (NFHS-4) India, conducted in 2015-16 is used for the analysis of this study.¹⁰ The survey presents the data on population, health, and nutrition at National, State and District level. As the young women in the age group of 15-24 years are considered in the analysis, the sample consists of 14,949 young women in the age group of 15-24 years who have ever menstruated in Tamil Nadu state of India. Secondary data from peer-reviewed and review of menstrual hygiene management (MHM) policies and initiatives by Tamil Nadu state in the past few years were also used for this study. In the present paper, hygienic method includes those women who use locally prepared napkins, sanitary napkins, or tampons during their menstrual period. All other methods used such as cloth, any other method and those women who used nothing were considered as unhygienic method. To examine the levels and differentials of prevalence of usage of hygienic

methods of menstrual protection among young women with various background characteristics, bivariate analysis has been used. To find out the determining factors associated with the usage of hygienic methods, binary logistic regression has been performed in which the individual effect of various background characteristics on menstrual hygiene practices are measured. The data were analyzed using IBM SPSS Statistics Version 20.0.

Results

Initiatives taken by Tamil Nadu state for Menstrual Hygiene Management: Tamil Nadu is the first state in India introduced the measures for menstrual health management, long before the issue came into national importance, to overcome lack of awareness and access to menstrual hygiene practices.¹¹ The detailed research on Tamil Nadu's initiatives through secondary data and reviews signify that a series of activities and initiatives by various stakeholders at various periods, that helped the state to make an environment, in which various sectors like government departments, non-governmental organizations (NGOs) and private companies collaboratively functioning for effectively manage menstrual hygiene practices. The main aim of these initiatives was to make awareness, accessibility, usage and disposal of menstrual waste to increase the menstrual hygiene practices in the state. The first state recognized menstrual hygiene management as an issue to be addressed through its sanitation policies and programmes in 2004.¹² But the background work to solve the poor hygiene practices in the state started much early, about 1992 through the socially motivated individual Ms. Kannaghi Chandrashekharan, "Pioneer in Menstrual Hygiene" called by UNICEF. The menstrual hygiene activist started three selfhelp groups (SHGs) in 1998 with three napkin production units at Pudukottai and set up an NGO, WOMEN to make awareness on menstrual hygiene and develop skill among women to locally making sanitary pads.¹³ Following this, Ms. Sheela Nair, IAS officer posted in Tamil Nadu Planning Commission, monitored the interventions by state government for managing menstrual health condition of the state. Under the guidance of state planning commission, Ms. Nair started intervention on the same strategy of Ms. Kannaghi's where Self help groups (SHGs) were produce their own sanitary napkins in hygienic environment.¹¹ Thus, the state of Tamil Nadu pioneered the idea of local

production of sanitary napkins through SHGs and thereby widely distributed menstrual hygiene products in the state (Table 1).

Tamil Nadu was also able to manage the menstrual hygiene initiatives with the funding and aid for sanitation and menstrual hygiene management, from charitable organizations and international organizations like UNICEF.¹⁴ Along with these activities, various NGOs entered in the state and started running their own awareness programmes and production of their own sanitary napkins in the state. Several non-governmental stakeholders who work on MHM together formed a Menstrual Hygiene Management Consortium (MHMC) in 2010 at Tiruchi with the support from UNICEF.¹⁵ In 2011, under the leadership of Chief Minister Ms. Jayalalitha, introduced the Menstrual Hygiene Programme (MHP) to provide free sanitary pads to girls in schools, women prisoners and lactating mothers.¹⁶ During the same time, central government also started a national level scheme to distribute sanitary napkins at low price to adolescent girls in certain districts of 17 states in the country. Subsequently the scheme was brought under the umbrella of National Health Mission in 2014 as RKSK.¹⁷ At the same time, Tamil Nadu state focused on strengthening the accessibility and infrastructure facility for menstrual hygiene such as separate toilets for girls and installing incinerators and sanitary napkin vending machines in schools. All these initiatives, interventions and programmes were helped the state of Tamil Nadu became the leading state in menstrual hygiene management among Indian states.

Mass media also played a crucial role in addressing the existing taboos and misconceptions on menstrual hygiene. Advertisements on MHM by the vernacular media help to reaching the message to the farthest possible audience. The distribution of free Television by the state government in 2006 again improved the spread of awareness through the advertisements in the media, led to increase the awareness. The success of MHP in Tamil Nadu, compare to national programme, is through its holistic coverage and consistent budget allocations for MHP in the state. During 2011-12, 2012-13 and 2013-14, the budget allocation was Rs.46 crores, 55 crores and 54.6 crores respectively for menstrual health programme (MHP). In 2014-15 also the same amount of 54.6 crores were allocated for MHP. While in 2015-16, the state allocated 60.58 crores, 61 crores for 2016-17 and the same

Table 1: Achievements of Tamil Nadu in MHM

Year	Major Achievements
1989	First SHG in Tamil Nadu Formed in Dharmapuri District with the support of International Fund for Agricultural Development (IFAD)
1998	Women SHGs formed for making Sanitary napkins under the leadership of Ms.Kannaghi
2002	Lack of Menstrual Hygiene among rural women were indentified and SHGs started making Sanitary Napkins.
2004	NGOs started working on Menstrual Hygiene
2006-08	Organized large number of conferences under WASH on Menstrual Hygiene
2010	Menstrual Hygiene Management Consortium (MHMC) formed at Tiruchi
2011	Tamil Nadu CM Ms. Jayalalitha launches the first sanitary napkin scheme in India.
2014	Govt. of India started the RKSK scheme to provide sanitary napkins for adolescent girls.
2015	Menstrual Hygiene Management National Guidelines has been published by Ministry of Drinking Water and Sanitation with the support of UNICEF.
2017	NFHS-4 (2015-16) report published and carries all state level data on menstrual hygiene practices.

Source: NFSSM, 2019¹¹

amount of Rs.61 crores were allocated during 2017-18 in the budget for MHP.¹⁸

In short, the MHM movement in Tamil Nadu can be said as government driven one, as much as one championed by individuals in the community. The state government's initiatives, series of activities, inter-departmental collaboration and coordination, participation of civil society and coupled with community, helped Tamil Nadu to make a sustainable MHM model.

District-wise prevalence of usage of hygienic methods of menstrual protection: Table 2 depicts the district level prevalence of practicing menstrual hygiene among young women in Tamil Nadu according to NFHS-4 data. The analysis reveals that out of 37 districts, 18 districts have the prevalence of above 90% in using hygienic methods of menstrual protection. In rests of the districts, more than 80% of the young women were practicing menstrual hygiene except Virudhunagar district (79.8%). It indicates the penetration of menstrual hygiene activities to the whole state through various governmental and non-governmental initiatives and programmes.

Table 2: Districtwise percentage of women aged 15-24 using a hygienic methods during menstruation in Tamil Nadu, India, NFHS-IV, 2015-16

Districts	Percentage of women using a hygienic method	Number of women
Thiruvallur	88.4	865
Chennai	97.3	976
Kancheepuram	93.0	820
Vellore	94.9	782
Tiruvannamalai	87.9	464
Viluppuram	87.8	694
Salem	93.8	836
Namakkal	91.4	371
Erode	94.1	657
The Nilgiris	90.7	172
Dindigul	91.5	484
Karur	95.3	236
Tiruchirappalli	94.1	510
Perambalur	90.9	121
Ariyalur	86.1	122
Cuddalore	91.5	577
Nagapattinam	86.0	344
Thiruvavur	88.0	217
Thanjavur	88.5	470
Pudukkottai	88.2	287
Sivaganga	90.7	258
Madurai	88.7	505
Theni	81.2	250
Virudhunagar	79.8	357
Ramanathapuram	85.4	246
Thoothukkudi	86.9	298
Tirunelveli	89.9	493
Kanniyakumari	92.7	354
Dharmapuri	91.9	358
Krishnagiri	95.4	474
Coimbatore	96.3	821
Tiruppur	94.5	530
Tamil Nadu	91.4	14949

Levels and Differentials of usage of menstrual hygienic methods: The percentage distribution of use of hygienic method by various background characteristics has been shown in Table 3. Overall, more than 91 percent of the women were used hygienic method during menstruation whereas remaining 9 percent using cloths or other unhygienic method of menstrual protection. The usage of hygienic methods during menstruation was higher among the women in the age group 15-19 with 94 percent, compared to women in 20-24 age group (89.3%).

Table 3: Percentage of young women aged 15-24 practicing menstrual hygiene by background characteristics in Tamil Nadu

Background Characteristics	Percentage using a hygienic method	Number of women	p-value
Age-group (in years)			
15-19	93.9	6980	0.000
20-24	89.3	7969	
Place of residence			
Rural	89.5	7724	0.000
Urban	93.5	7223	
Education			
No education	71.3	202	0.000
Primary	75.8	297	
Secondary	91.2	9516	
High school & above	93.6	4934	
Religion			
Hindu	91.1	13677	0.000
Muslim	95.8	670	
Christian	93.1	595	
Caste			
Scheduled Caste	89.0	4667	0.000
Scheduled Tribe	85.9	249	
Other Backward Class	92.8	9812	
Others	87.2	172	
Wealth Quintile			
Poorest	80.8	411	0.000
Poorer	85.8	2219	
Middle	90.0	4386	
Richer	94.1	4599	
Richest	94.7	3333	
Type of Toilet			
flush	94.0	8323	0.000
pit/dry	91.0	310	
no facility/ open space	87.9	5943	
others	89.8	372	
Access to Media			
Not at all	88.9	153	0.577
Less than once a week	91.2	137	
At least once a week	92.8	305	
Almost everyday	91.4	14353	
Usually go to cinema/theatre at least once in a month			

Background Characteristics	Percentage using a hygienic method	Number of women	p-value
No	90.8	11564	0.000
Yes	93.7	3384	
Total	91.4	14948	

Note: Total includes women belonging to “other” religions and women who don’t know their caste/tribe, are not shown separately.

The urban-rural disparity is very less, as rural women (89.5%) used hygienic method as compare with 93.5 percent of women in urban areas. As the educational level improved, the usage of hygienic methods among women had also increased. But in Tamil Nadu, 71 percent of the women having no education used hygienic methods to prevent their bloodstains during menstruation and among primary educated women it is 75.8%. On the other hand, more than 90% of women with education high school and above used hygienic methods. The usage of hygienic method of menstrual protection was almost same among Hindu women (91.1%), Muslim women (95.8% %) and Christian women (93.1%). The usage of hygienic method among women from other backward classes (OBC) was higher (92.8%) in comparison to women belong to Scheduled Caste (89%), Scheduled Tribe women (85.9%) and women with no caste/tribe (87.2%). The economic status of women seems to be a dominant factor in the prevalence of usage of menstrual hygienic method. Usage of hygienic methods were higher among the young women in the richest wealth quintile (94.7%) compared to the young women belong to the poorest wealth quintile (80.8 %). Toilet facility at home is very essential for women to ensure privacy in changing sanitary pads. It has been observed from the table that 87.9 percent of women use hygiene methods who do not have toilet facility at their home as compared to 94 percent of women who have flush toilets at their home. The usage of menstrual hygienic methods were high among young women those who have access to media atleast once a week (92.8%) compared to those who have never access to these medium of communication (88.9%). Similarly, use of hygienic methods were comparatively higher among those women who are usually go to cinema/ theatre at least once in a month compared to those who don’t go. All these background variables were significantly associated with menstrual hygiene except access to media.

Odds Ratios for Practicing Hygienic Methods:

The results of the binary logistic regression have been presented in Table 4, which shows that most of the predictor variables fitted in the model were statistically significant. Women in the age group of 20-24 years were 50 percent less likely to use menstrual hygiene methods compared to women in the 15-19 age group. Similarly, women living in urban areas were more likely to practice hygienic methods of menstrual protection. However, the value of odds ratio for educational status and wealth status is high, which indicates that these two factors are the most important and associated with the usage of hygienic menstrual absorbents. Women who are educated up to high school or above are three times more likely to use hygienic method during menstruation as compared to uneducated women (OR= 3.6). Compared to women belong to Hindu religion, the usage of hygienic methods was found higher among Muslim women (OR=1.5) and Christian women (OR=1.1). The prevalence of menstrual protection was significantly higher among women belong to OBC category compared to women from scheduled caste. The usage of hygienic menstrual absorbents increases sharply with the wealth status. Women belong to richer category of wealth index were more than two times higher the use sanitary methods as compared to women belongs to poorest category (OR=2.5). The usage of hygiene methods was higher among women those who have flush toilet facility at their home as compared to women who do not have toilets at their home.

Discussion

Management of menstruation hygiene involves not only access to basic sanitation facilities, soap and water but also to so-called menstrual absorbents. The initiatives for managing menstrual hygiene were started long time back in the state of Tamil Nadu and self help groups formed to make sanitary napkin during 1998. That is one of the main reasons for the state to be continuing in the top among the Indian states as far as the menstrual hygiene is concerned. Tamil Nadu state had increased the accessibility and infrastructure facility for menstrual hygiene such as separate toilets for girls and installing incinerators and sanitary napkin vending machines in schools. A study conducted in Karnataka found that 46 percent of the girls prefer to use cloths due to high cost of sanitary pads, shyness to buy and

Table 4: Odds Ratios for practicing menstrual hygienic methods among young women in Tamil Nadu

Background Characteristics	Odds Ratio	CI (95%)
Age-group (in years)		
15-19®	1.00	
20-24	0.500***	0.440-0.570
Place of residence		
Rural®	1.00	
Urban	1.120	0.976-1.285
Education		
No education®	1.00	
Primary	1.229	0.811-1.860
Secondary	2.563***	1.850-3.549
High school & above	3.567***	2.536-5.016
Religion		
Hindu®	1.00	
Muslim	1.592**	1.074-2.361
Christian	1.063	0.761-1.485
Caste		
Scheduled Caste®	1.00	
Scheduled Tribe	0.926	0.627-1.367
Other Backward Class	1.190**	1.045-1.354
Others	0.532**	0.331-0.854
Wealth Quintile		
Poorest®	1.00	
Poorer	1.317**	0.993-1.745
Middle	1.755***	1.328-2.317
Richer	2.532***	1.851-3.464
Richest	2.365***	1.669-3.349
Type of Toilet		
Flush®	1.00	
Pit/Dry	0.937	0.617-1.425
No facility/Open space	0.841*	0.707-1.001
Others	0.765	0.534-1.097
Usually go to Cinema/Theatre at least once in a month		
No®	1.00	
Yes	1.238**	1.057-1.451

Note: *** Significant at $p < 0.001$, ** Significant at $p < 0.05$, * Significant at $p < 0.01$

disposal issues.¹⁹ These issues were not much high in Tamil Nadu state due to the sanitary napkin vending machines and incinerators installed in schools. The state government's initiatives, series of activities, inter-departmental collaboration and coordination, participation of civil society and

coupled with community, helped Tamil Nadu to make a sustainable MHM model.

The socio-economic factors associated with menstrual hygiene practices reveals that the use of hygienic method of menstrual protection among young women (15-19 years) was higher compared to 20-24 year age group. The study observed that the line of division between rural and urban becomes very feeble. This outcome is contradictory to the findings reported by Anand et al (2015) that the use of hygienic method was higher among unmarried women in urban area (52 %) as compared to rural area (25 %).²⁰ Few other studies by Paria et al (2014) and Thakre et al (2011), were also found similar contradictions with our study in rural and urban difference.^{21,22} The possible reason may be that the availability and accessibility of sanitary napkins in rural and urban areas were almost similar due to the various government initiatives in the state.

Our study reveals that highly educated women were more likely to use hygienic methods compared to illiterate women. Hence, education level of an individual is a significant contributory factor in deciding the menstrual hygiene practice. A study done among rural women in Tamil Nadu reported that among the illiterate women 95 percent were used cloths during menstruation, while women who had completed high school and graduation more than 70 percent and 94 percent used sanitary pads during menstruation, respectively.²³ Another study by Ray and Dasgupta found that menstrual hygiene practices was more among girls with literate mothers.²⁴ Women belong to richer category of wealth index were more than two times likely to use hygienic methods as compared to poorest category. The result were corroborates with the study by Nath et.al., reported that menstrual hygiene practices were associated with education, religion, economic status and availability of toilet facilities.²⁵ Our study also found that those who have flush toilet facility at home, were more likely to practice menstrual hygienic methods.

This study observed that the usage of hygienic methods during menstruation was higher among those women who have exposure to any mass media and going to cinema or theatre once in a month. The distribution of free Television by the state government also helped to improve the spread of awareness through the advertisements in the media. There was film named “*Pad Man*”

released in 2018, based on the life of a Social activist, Arunachalam Muruganantham from Tamil Nadu and also known as '*Menstrual Man*'. He brought the revolution in the concept of menstrual hygiene in rural India by creating a low-cost sanitary napkin machine.²⁶ A study conducted by Tarhane reveals that 79 percent of the girls used sanitary pads and the reason was reported as the high availability and influence to television.²⁷ Watching cinema from theatre is a part of their life among common peoples in Tamil Nadu. Patil (2014) shows in her study that level of menstrual hygiene increases with an increase in time spent on watching television or listening to radio.²⁸

Conclusion

More than 50 percent of the districts have prevalence of hygienic practice above 90 percent and rests have above 80 percent in the state. The state government's initiatives, inter-departmental collaboration and coordination, participation of civil society and coupled with community, helped Tamil Nadu to stand top among the other states in India. The paper concludes that women in the richest quintile, with higher education, living in urban areas with higher awareness and attitude were more likely to use hygiene methods. The

usage of hygiene methods were higher among women those who have flush toilet facility at their home as compared to women who do not have toilets at their home. The usage of menstrual hygienic methods were three times higher among young women those who have access to media almost every day (watching television or reading newspaper or listening radio) compared to those who have never access to these medium of communication. In short, for much better management of Menstrual Hygiene, requires very good knowledge and awareness on menstrual hygiene, safe and secure sanitary products, good water, sanitation and hygiene (WASH) facilities and menstrual management facilities, too.

Ethical Approval: The study was done based on the secondary data source; hence, no ethical approval was required.

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