



Menstrual Health Index: A Novel Approach to Assess Safe Menstrual Practices in Adolescents and Young Adults

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Abstract

Objective To test the validity of the novel Menstrual Health Index (MHI) in order to assess safety of menstrual health and hygiene practices in adolescents and young adults.

Methods This is a community-level prospective questionnaire-based study conducted in females between the age group of 11 and 23 years. The number of participants was 2860. The participants were asked to fill in the questionnaire pertaining to four components of menstrual health, viz., menstrual cycle, menstrual absorbents, psychosocial aspects and WASH component associated with menstruation. Based on the score assigned to each component, Menstrual Health Index was calculated. A score of 0–12 was considered poor, 12–24 was considered average, and 24–36 was considered good. Educational interventions were designed to improve the MHI in that particular population according to component analysis. After 3 months, MHI was rescored to see the improvement.

Results A total of 3000 females were handed over the proforma and 2860 females participated. Among participants, 45.4% were from urban area, rest were from rural areas (35.6%) and slum areas (19%). Majority of the respondents were in the age group of 14–16 years (62%). Poor MHI (0–12 score) was seen in 48%, average score (13–24) was found in 37%, and good score was found in 15% participants. When individual components of MHI were assessed, it was found that, as high as 35% of the girls had limited accessibility to menstrual blood absorbents, 43% skipped school for more 4 times in a year, 26% suffered from severe dysmenorrhea, 32% reported difficulty in maintaining privacy while using WASH facilities and 54% were using clean sanitary pads as menstrual sanitation option. Best composite MHI was observed in urban areas, followed by rural and then slum area. In urban area and rural area, menstrual cycle component score was least. In rural area, sanitation component score was least and in slum area, WASH component scored the worst. Severe premenstrual dysphoric disorder was recorded in urban area, and maximum abstinence from school due to menstruation was seen in rural areas.

An improvement in score was seen in 87% of the girls (93% individual and 87% composite), after 3 months of education and interventional strategies.

Conclusion Menstrual health is not limited to cycle frequency and duration normalcy. It is a comprehensive subject, encompassing physical, social, psychological and geopolitical aspects. Assessing prevailing menstrual practices in a population, particularly in adolescents, is imperative to design IEC tools, and these objectives are aligned with SDG-M goals of Swachh Bharat Mission. MHI serves as a good screening tool to interrogate KAP in a particular area. Individual problems can also be addressed in a fruitful manner. Rights-based approach to provide essential infrastructure and provisions to promote safe and dignified practices to a vulnerable population like adolescents can be aided by using tools like MHI.

Keywords Menstrual health hygiene · Menstrual health index · Menstrual health · Menstrual hygiene

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Introduction

Menstruation is the basis of reproductive life, yet so conveniently ignored topic among 1.8 billion menstruators on the earth. There are rare universal phenomena which are associated with shame, taboos, myths, poor knowledge and

unsafe practices, and sadly, menstruation is one of them [1]. WHO and UNICEF Joint Monitoring Programme (JMP) for drinking water, sanitation and hygiene has used the following definition of menstrual hygiene management: 'Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required and having access to safe and convenient facilities to dispose of used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear' [2].

Different problems like lack of awareness and education about menstrual cycle, different practices and perceptions around sanitation, psychosocial aspects related to coping with this have led to profound detriment around menstrual health all across the globe. Lack of dignified access for clean menstruation sanitation options, nonavailability of toilets, water, soaps, social exclusion, stigmatization adds to the host of problems associated with menstrual cycle. Gender-based discrimination, poverty and lack of formal education in females can be held responsible for this.

Despite exhaustive and comprehensive efforts at a global level, the situation is improving at a snail's pace. Researchers and educators in this field always felt the lack of a formal dedicated assessment tool for evaluating existing practices and magnitude of the problem. This lack of validated measures related to measuring menstruation within global health and development standards becomes a critical barrier in assessing menstrual needs.

The efforts can be channelized in a more effective manner if the exact dimension of the problem is known and, secondly, there is absence of standard measures to assess progress on addressing menstruation-related interventions and thus further limits assessment of important outcomes and creation of effective programs to change them.

Menstrual health and hygiene-related indicators are yet to be incorporated within comprehensive SRH goals, despite the potential influence of menstruation on their respective outcomes, including reaching Sustainable Development Goal-3 (SDG) targets and Swachh Bharat Mission, SBM-M.

Till date, only UNICEF has provided assessment tools for menstrual hygiene management, which have been covered in *MHM_Booklet_14 Nov 2013.indd/56* [3].

Developed by UNICEF, this booklet is exhaustive, comprehensive, but it takes time and it needs trained and dedicated menstrual educators. Moreover, it has been designed only for school girls. Majority of focus is only on menstrual part of menstrual health.

Further notably, in a Green Paper presented at Geneva in March 2019, the need for a trusted tool was emphasized and since then substantial work is going on in this field.

In India, the problem is underestimated and owing to a large number of menstruating females, we need a validated tool to ease out studies, assess problems and propose interventions to improve MHH. Thus, we present here novel Menstrual Health Index, which can assess basic problems of all the components of menstrual health.

It is user-friendly, as visual tools are also used; it is easy to comprehend and respond also. It requires minimum training and results are easy to score. This is a community assessment tool. It has been made easy for wider application.

Study Design

It was a prospective cohort questionnaire-based community-level study, done over a period of three months (January 2019 to March 2019) after obtaining ethical clearance from Institutional Ethics Committee (IEC), Rajshree Medical research Institute.

The participants were from rural, urban and slum areas. These participants were from educational camps organized by the principal investigator. A total of 13 camps were organized: six in urban schools (total participants were 1298), four in rural areas in conjunction with ASHA and supporting NGOs (total participants 1019) and three camps in slum area through supporting NGOs (total population 543).

Informed consent was taken and MHI questionnaire form was handed over to the participants which were collected by the volunteers.

The participants, who were unable to fill the form by themselves, were assisted by the student volunteers.

For the pilot study, a sample size of 3000 was taken and this was a convenience-based sampling.

In total, 2860 females participated, as 34 did not give consent, 58 were not fulfilling study inclusion criteria, and 48 were lost to follow-up.

A predesigned Proforma along with aids like VAS chart for pain, models of uterus and ovaries and charts for explaining menstrual cycles were handed over by the educators to the study participants.

Inclusion Criteria

1. All menstruating females between the age of 11 and 23 years irrespective of marital status or sexual activity.

Exclusion Criteria

1. Not willing to participate.
2. Taking any medication for menstrual disorder.
3. Lactating
4. Using any hormonal contraceptive
5. Less than 6 months from last child birth or abortion

Table 1 MHI

Average cycle length	23–28 days	< 23 days / > 38 days	Unpredictable and irregular
Average flow	++	+++ / +	Clots associated
Pain	±	++	+++
Type of menstrual blood absorbent	Clean sanitation option, like pad	Home cloth	Others like newspaper, ashes, leaves, rugs
Availability of absorbent	Available every month, easily	Available with difficulty	Not available
Accessibility of absorbent	Can purchase/procure every month	Someone else gives/buys	Not accessible
Availability of toilet	Easy access	With difficulty	Not available
Availability of water	Easily available	With difficulty	Not available
Availability of soap	Easily available	With difficulty	Not available
Privacy in availing WASH facilities	Private and safe	Difficulty in maintaining privacy	Not at all
Mood changes observed before or during periods	Nil	Yes/minimal	Severe as to disrupt social interactions
Frequency of skipping school/social activity during periods	< 2 per year	2–4 per year	> 4 times a year

Menstrual Health Index

A total of 12 parameters were assessed, each segment was given a score of 1, 2 and 3.

Minimum score was 1 and maximum score was 36 for any individual.

Score 1–12 was poor

Score 13–24 was average

Score 25–36 was good (Table 1)

Individual parameters were also evaluated, and each participant was given the study Proforma after obtaining consent. The participants who were not able to read were assisted by volunteers (Fig. 1).

The collected data were analyzed, and results were calculated by percentage method. The denominator for calculation was the total number of participants in each category (rural, urban, slum area).

Two types of calculations were done—composite MHI and component MHI. Validity of the index was assessed by Cronbach's alpha method.

Analysis was done according to three areas—urban, rural and slums.

- Two types of analysis—composite and component analysis (segmental)—were done
- Interventional tools like visit to doctor, counseling sessions, provision of sanitation options, upgrading of WASH facilities were done once a month; hence, a total of four contacts were done by the volunteers.

Educational and Interventional Strategies:

- For menstrual cycle component:- Two visits/consultation with a gynecologist were scheduled.
- For menstrual sanitation component:- Relevant IEC material was provided.

- For WASH component: Written requests to concerned authorities were sent (heads of schools, gram panchayat, supporting NGOs, etc.)
- For psychosocial component-counseling sessions, IEC material was provided.
- Volunteers were in contact with respondents for three months.

After three months.

- Follow-up composite scoring was done to analyze outcome
- Concurrent validity was mapped (construct validity needs to be done)
- Two-way mapping was done
- User and provider problems were highlighted

Results

Out of 3000 females, a total of 2860 females participated in the study. Out of the total study population, 45.4% were from urban area, 35.6% were from rural area, and 19% were from slum area (Fig. 2). Majority of the respondents were in the age group of 14–16 years (62%). Poor MHI (0–12 score) was seen in 48%, average MHI score (13–24) was found in 37% and good score was found only in 15% participants. On the assessment of individual components of MHI, it was found that, as high as 35% of the girls had limited accessibility to menstrual blood absorbents, 43% skipped school for more 4 times in a year, 26% suffered from severe dysmenorrhea, 32% reported difficulty in maintaining privacy while using WASH facilities and 54% were using clean sanitary pads as menstrual sanitation option.



Fig. 1 Components of MHI

An improvement in score was seen in 87% of the girls (93% individual and 87% composite), after 3 months of education and interventional strategies. MHI score of each area was recalculated after requisite interventions were applied and an improvement was seen in all the areas (Fig. 3).

Composite MHI

Slum area had worst composite score and on studying the components of MHI, WASH segment had the least score followed by menstrual sanitation component. Surprisingly, in rural area menstrual sanitation was available to 72% of the girls, but affordability and accessibility was an issue in 22% of the respondents.

Composite MHI had almost similar results in rural (32%) and urban areas (31%) Tables 1, 2.

Menstrual Cycle Component

In total, 38% of urban and 37% of rural study population had irregular and unpredictable cycles. Incidence of heavy menstrual bleeding and dysmenorrhea in urban girls was 37.5% and 33.2%, respectively (Table 3).

Menstrual Sanitation Component

In total, 92% of respondents from urban area had clean sanitation facilities. To our surprise, although with difficulty sanitation was available to 48% of slum dweller respondents

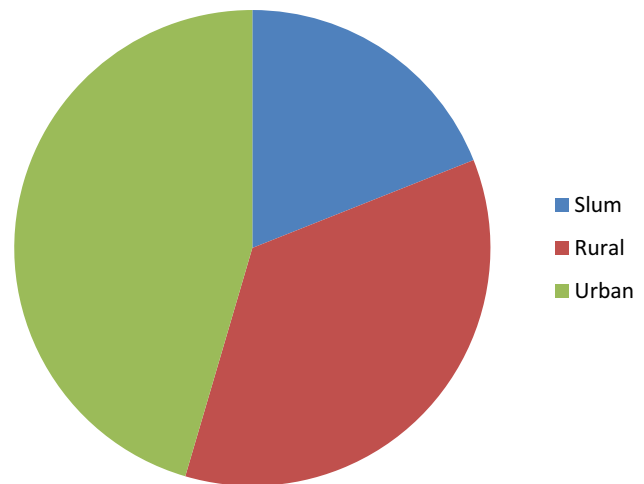


Fig. 2 Area wise distribution

and 8% of women population had difficulty in sanitation even at urban level. In total, 42% of participants from slum had lack of accessibility and affordability (Table 4).

In our study, we concluded that 36% of slum respondents had difficulty in accessing toilet and 12% of them complained of lack of water facility. It was surprising to note that 23.5% of respondents living in rural areas had difficulty in access to soap, whereas only 7% of participants living in slum areas had difficulty in access to soap (Table 5).

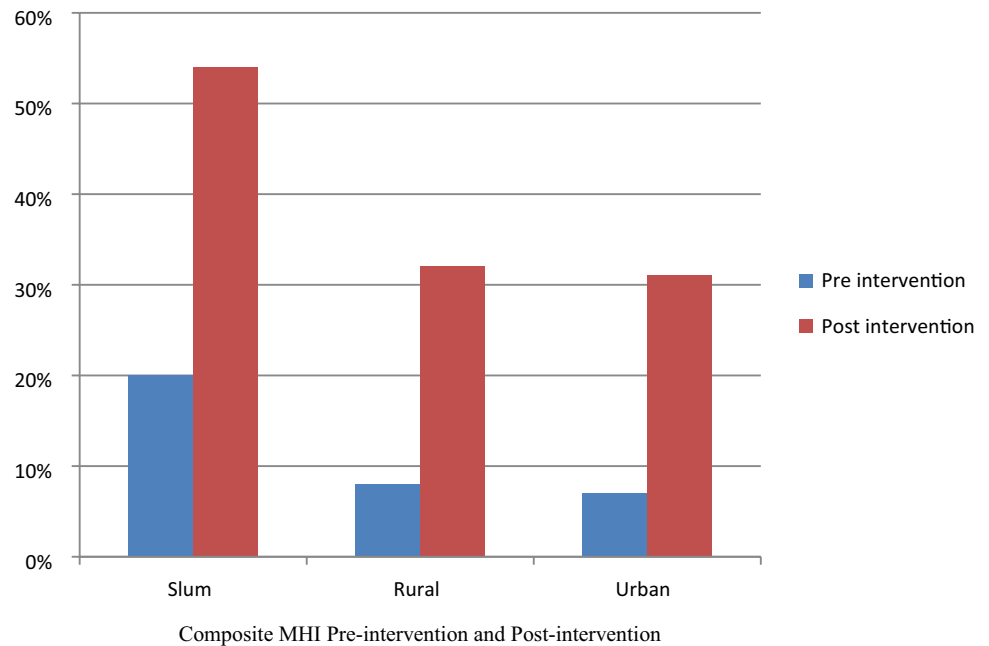
On the basis of psychosocial aspect assessment, 24% of girls from rural area skipped school. Mood changes during menses were seen relatively more in urban dwellers (17.6%) (Table 6).

Discussion

Menstruation is as primitive as the existence of human being themselves, still human existence is accepted and celebrated, while menstruation is not. Optimal menstrual health is the core of promising a dignified women's well-being. To menstruate with dignity and safety is a basic human right. If a discussion around women empowerment is generated, it is incomplete without a promise to ensure menstrual rights (Figs. 2 and 3).

Menstrual hygiene is more than access to sanitary pads and changing them. It is about ensuring that women live in an environment that is safe and supports their ability to manage their menstruation in a dignified manner.

UNICEF defines menstrual hygiene management (MHM) as 'Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, that can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and

Fig. 3 Composite MHI**Table 2** Pre and post intervention MHI

Area	Score 1	Score 2
Urban	23	25
Rural	19	22
Slum	16	19

convenient facilities to dispose off used menstrual management materials. They understand the basic facts linked to the menstrual cycle and how to manage it with dignity and without discomfort or fear,' whereas Menstrual health and hygiene (MHH) 'encompasses both MHM and the broader systemic factors that link menstruation with health, well-being, gender equality, education, equity, empowerment, and rights. These systemic factors have been summarised by UNESCO as: accurate and timely knowledge; available, safe, and affordable materials; informed and comfortable professionals; referral and access to health services; sanitation and washing facilities; positive social norms, safe and hygienic disposal; and advocacy and policy' [4].

In fact, UNICEF had added MHH in one of its five priorities to strengthen adolescent girls in its Gender Action Plan 2018–2021.

Table 4 Menstrual sanitation component

Menstrual sanitation			
Component	Slum (%)	Rural (%)	Urban (%)
Type clean	14	71	92
Availability & accessibility	48	32	8
Affordability & accessibility	42	22	15

The Gender Action Plan is UNICEF's commitment to achieving gender equality and girls' empowerment. The five priorities of the Gender Action Plan, implemented together and at scale, can dismantle some of the most stubborn barriers to gender equality and transform the lives of adolescent girls—supporting them to become healthy, educated and empowered women, able to direct the course of their own lives. The priorities of the plan are monitored and reported annually (Table 7).

There is need for global action and solidarity in unifying the effort to achieve optimal menstrual health. The policies and agenda around MHH need to have background knowledge of existing practices, cultural habitudes, knowledge gap, level of skill training, prevailing incidence of menstrual

Table 3 Menstrual cycle component

Menstrual cycle			
Cycle characteristic	Slum (%)	Rural (%)	Urban (%)
Unpredictable/irregular	24	37	38
Heavy menstrual bleeding	32	24	37.5
Pain	21	25.3	33.2

Table 5 WASH component

Toilet + water + Soap + Privacy			
Component	Slum (%)	Rural (%)	Urban (%)
Toilet access with difficult	36	18	3
Water	12	4	2
Soap	7	23.5	12
Privacy & safety	34	16	8

Table 6 Psychosocial component

Psychosocial aspects			
Component	Slum (%)	Rural (%)	Urban (%)
Mood changes (severe)	7	9	17.6
Skipping of school social meets	44	24	12

disorders and psychosocial impact of menstruation on the community.

Lack of awareness about menstrual cycle and different unscientific practices are a major threat to menstrual hygiene. In a report published in *The Print*, about 71% of adolescent girls in India remain unaware of menstruation till menarche. Myths and perceptions regarding sanitation pose a great impact on hygiene and is a reason why it is not discussed among the adolescents. The fact has been laid out that 23% of girls drop out of school when they begin menstruation and the ones who do not drop out miss their schools up to five days every month [5]. Thus, it is extremely valuable to educate the people about the menstrual hygiene and in totality about all the components of MHH to consolidate the health of women and girls of our country.

Very often menstrual health is just limited to the thought of menstrual sanitation options and availability. Majority of the work being professed by government and nongovernment bodies are concentrated on that.

Some isolated work is being carried out for upgrading WASH facilities in the remote areas. Independent organizations are looking after certain menstrual cycle disorders. There is a huge gap in KAP of the socio-cultural impact of menstruation on the community at large.

In order to achieve a holistic health of women and girls, it becomes extremely pivotal to assess all the essential components enrolled in complete menstrual health.

Till date, various assessment tools have been studied, but majority of them were designed for use in emergency or displacement conditions. UNICEF MHH assessment booklet was exhaustive and comprehensive, but it was designed for use by school students and teachers. Moreover, it requires training of teachers and assessors and is lengthy [6].

M-RAT toolkit developed by Clatworthy, Sommer et al. in Columbia University was presented in joint collaboration with USAID in 2020, it essentially analyzes MHH needs in emergency situations [7].

We present novel MHI (Menstrual Health Index) as a simple, easy, comprehensive assessment tool, which analyzes four essential components of menstrual health. It has an advantage of SCORING menstrual health and individual component analysis can also be done. Thus, efforts to improve and improvise that particular component can be instituted on the basis of goal-directed interventions.

Composite MHI

It analyzes four components (menstrual pattern, sanitation, WASH facilities, psychosocial) and serves as an excellent analytic tool for assessing MHH of a population. The score assigned can be used to develop interventions and IEC tools for improving MHI.

Thus, it becomes important to survey each and every cause contributing to deterioration and poor menstrual health. M-RAT published and accessed effects of emergency situation and displacements on menstrual health of female; thus, it was an indicator of short term, poor health. So, intervention based on this tool can provide short-term solutions to the existing problems. In order to have a longitudinal assessment and effect, MHI can serve as an easy tool [8].

Components of MHI

Components of MHI includes four basic and essential integrals of menstrual health, viz., menstrual cycle component, WASH component, sanitation component, and psychosocial component.

Menstrual Cycle Component

Irregular and unpredictable cycle pattern indicates menstrual health status of women. Multiple factors like place of hail, BMI, hormone disorders, drug intake, structural diseases like fibroids, polyps affect menstrual cycle in more than one way. Each causative factor warrants individual attention. According to a camp survey, India ranks low in healthy menstrual cycle. Overall around 50% women in India have irregular menses, which is a significantly high percentage [9]. As we excluded women more than 24 years of age, the overall percentage of irregular cycles was low.

In a study that was conducted in Nagpur, India, by Thakre et al., it was estimated that 24% of women suffer from irregular menstrual pattern [10]. A nationwide cross-sectional study reveals that 33% of women working in urban sector complain of irregular menses [11]. In the present survey also, 38% of urban females reported irregular cycles.

Table 7 UNICEF. "Annual report on the implementation of the UNICEF Gender Action Plan, 2018–2021." (2020)

Strategic plan goals	Every child survives and thrives	Every child learns	Every child is protected from violence and exploitation	Every child lives in a clean and safe environment	Every child has an equitable chance in life
Gender equality for girls and boys and in care and support for all children	Gender equitable health care and nutrition Quality maternal care Gender equality in community health systems	Gender equality in assess, retention and learning Gender equality in teaching and education systems	Prevention of and response to gender-based violence against girls and boys	Gender responsive water and sanitation systems	Non gender discriminatory roles, expectations and practices
Empowerment and wellbeing for adolescent girls	Nutrition, pregnancy care, HIV and HPV prevention	Girls' secondary education and skills	Gender based violence in emergencies Child marriage and early unions	Menstrual health and hygiene	

Irregularity in cycle in urban sector occurs due to lifestyle changes leading to work-affiliated stress, smoking, obesity, further causing PCOS, unreasonable need of dieting and irrational use of oral contraceptives.

A survey was published in August 2013 in International Journal of Biomedical and Advance Research which was conducted on 323 adolescent girls, it stated that 5.6% of girls suffered from irregular menstrual cycle [12]. A landmark study was conducted by Walia D. K. et al.; among school going girls in rural areas of Himachal Pradesh, 19.8% girls have reported irregular cycles [8]. The present study shows that even 37% of rural study population had irregular menstrual cycles which is quite high. This might be due to poor knowledge and nutritional deficiency.

Further, in urban study population, 37.5% women complained of heavy menstrual bleeding. In our study, we found that more pain was experienced by urban females (33.2%) as compared to the females from rural (25.3%) and slum area (21%). T. Kotagasti et al. conducted a study and concluded that 33% of women complain of heavy menstrual bleeding [13]. Hence, probably lifestyle modification plays a substantial role in menstrual health. Thus MHI can assess and evaluate the core element that is degrading menstrual cycle pattern, which can reconcile menstrual health of the study population. Interestingly, 83% of the total respondents never reported or discussed painful menstruation with anyone. Journal of Family Medicine and Primary Care published an article which stated that 66.8% had dysmenorrhea in urban sector [14]. The present study reported that 33.2% women in urban area complained of dysmenorrhea. After analyzing poor menstrual cycle component, two visits to a gynecologist were scheduled and counseling sessions by the volunteers were done. MHI was rescored after requisite intervention and was found to be improved.

Sanitation Component

Even in today's times, menstrual sanitation challenges impose a hurdle for women and girls. Menstruating girls do not discuss their menstrual problems with reliable people, and thus, they have inferior knowledge about sanitation. A study was conducted on a big scale on menstrual hygiene products and absorbents used in Asia, it comprehended that countrywide only 11.2% women used sanitary pads [15]. Another study laid out the conclusion that only 36% of women all over India are using sanitary pads and over 77% of menstruating women are using cloth, which is often reused [16]. Furthermore, 18% of women sometimes resort to using ashes, dried leaves and husk sand to aid absorption. It was mentioned in a recent study, which had a study population of 387 girls that 60.6% girls among urban population and 30.8% girls among rural population used sanitary pads [16]. However, our current study deciphered that reduced

affordability and accessibility was 15% and 22% in urban area rural area, respectively. Not many studies have been directed on slum population regarding use of sanitary pads and their affordability and accessibility. In the present study, only 14% of women from slum areas had access to good sanitation and 48% had access to sanitation with difficulty. To our surprise, 8% of women living in urban areas also reported availability to sanitation with difficulty. It is a disgrace that even today when on one side, women are strong enough to run a society, excel in every domain they step in, half of the women are not living a basic standard life and are not able to practice healthy menstrual sanitation. By providing enhanced sanitary facilities to the menstruating women, we can upgrade our society by providing women a secure and strong environment. Acknowledging menstrual sanitation thus becomes very important to improve overall menstrual health of women and girls.

WASH Component

Another presuming aspect of menstrual hygiene is Water, Sanitation and Hygiene (WASH) facility. WASH continues to contribute to high prevalence of lack of hygiene during menstruation. About 732 million people, almost half of India's total population is devoid of toilets and women and girls suffer the most due to lack of toilet installation. It was reported in a study that 23% of girls drop out from school due to no availability of sanitation [13]. Girls limit their water intake to minimize their use of toilets which in turn causes serious health issues. According to the United Nations, 'In 2016, one third of all primary schools lacked basic drinking water, sanitation and hygiene services, affecting the education of millions of school children, but particularly girls managing menstruation.' Another important survey conducted by UNICEF illustrated that 22% of Indian schools did not have appropriate toilets for girls [17]. For keeping a check on WASH facilities evaluating tools have been built-up in schools and healthcare facilities. In 2015, a WHO/UNICEF global review reported that 40% healthcare facilities lack water supplies, 19% lack sanitation, and 35% do not have hand hygiene material [18]. After conducting survey for the present study, it was established that 36% of slum study population had access to these facilities with difficulty. It was challenging for 3% of urban population for access to WASH facilities which is an eventful number for urban zone and 18% of rural women who took the survey had access to WASH facilities with difficulty. If we talk about the availability of water and soap, 12% of slum population was getting basic facility like water and only 7% were supplied with hand washing material. Around 2% of urban participants reported nonavailability of water and 12% of the

urban population did not have availability of soap, which is a remarkable number. It is thus becoming clear that holistic approach is needed and we need to link water and sanitation to health education to achieve SDG and MDG.

Psychosocial Component

Often mood changes and socially recluse behavior are not even mentioned in menstrual health and hygiene. Up to 75% of women experience premenstrual syndrome which includes affective symptoms, irritability, depressed mood, anxiety and impulsive behavior [21]. The challenge of addressing the socio-cultural taboos and beliefs in menstruation is further compounded by the fact that girls' knowledge level and understandings of puberty, menstruation and reproductive health are very low. A study showed that in India, for 1 out of 2 girls, mothers are the source of information about menstruation, followed by friends. In total, 70% of mothers consider menstruation "dirty," further perpetuating taboos [20]. In some rural parts of India, menstruating girls are asked to stay away from religious spaces, kept in isolation and not allowed to go to school. Till date no composite menstrual hygiene analysis has been done which includes accessibility to absorbent aids along with relatable rather consequential aspects like psychosocial. MHI index has been created to include all the aspects of menstrual hygiene, and according to the index 17.6% of women from urban sector experienced severe mood changes, whereas 7% of slum dwelling women experienced severe mood swings. This difference may be due to inescapable stress that follows modified lifestyle of urban zone. It is important to take a note, that in our study, we found that 24% of girls from rural areas and 44% from slum area skipped schools during menstruation. This significant difference may be due to lack of sense of security and privacy in schools apart from inconvenient sanitation facilities. Another factor is the nonrational preaching and myths delivered to adolescent girls, which get inculcated in them and wrong practices continue. Speaking of the percentage seen in urban area, the relationship between stress and its effect on menstrual cycle has been debated since years. More data needs to be presented in view of relationship of stress with menstrual disorders.

Conclusion

Menstrual health needs more than just making low-cost absorbent aids available to females. In times where menstrual health is not prioritized due to lack of ignorance, information and mindfulness regarding healthy menstrual practices, a tool was needed to be designed that evaluates menstrual hygiene in felicitous manner. This is why Menstrual Health Index was thoughtfully invented. This is a

tool that assimilates all the aspects of menstrual health that causes hindrance in healthy sanitation and menstrual regularity. In addition MHI serves as a good prognostic maker and a test for seeing results after implementing interventions.

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Declarations

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Statement All procedures performed in studies involving human participants were in accordance with the ethical standards of the institute where this study was carried out and the permission was granted by Institutional Ethics Committee (IEC), Rajshree Medical Research Institute, Bareilly and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Ethical permission The study was approved by the Bioethics Committee of the Rajshree Medical Research Institute, Bareilly, UP.

Informed consent Informed consent was obtained from all individual participants included in the study.

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