

Perceptions on **Menstrual Hygiene** Management

A Pan-India Analysis



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1. EXECUTIVE SUMMARY

“An average 68% of women in the age group of 15-24 use hygienic methods of protection during their menstrual period, with 18 percentage points standard deviation across urban and rural areas.”

Menstruation is a biological and physiological process which naturally occurs in healthy girls, women, transgender men and non-binary persons of reproductive age. Yet several millions of menstruators are denied the right to manage their monthly menstrual cycle in a dignified and healthy way. This issue perpetuates due to prevalence of gender inequality, discriminatory social norms, cultural taboos, poverty and dearth of basic sanitation services. Adolescent young girls may face stigma and social exclusion during menstruation, while transgender men and non-binary persons may often face discrimination because of their identity, which prevents them to access the safe menstrual hygiene methods and practices. As a result, the onset of menstruation brings about restrictions— in form of mobility, freedom and choices.

Given the magnitude of the issue, Menstrual health and hygiene interventions can lead to substantial improvement in outcomes of health, education and productivity. However, for the purpose of intervention, there has seldom been any baseline study to understand the needs and demands of the menstruators. It is rather surprising on how limited data is available on menstrual hygiene in India, in fact, on a national level, the menstrual hygiene practices and behaviors are rarely, or never documented. It was only in National Family and Health Survey of 2015-16 that one question with relation to menstrual hygiene was included during data collection. It was found that on an average 68% of women in the age group of 15-24 use hygienic methods of protection during their menstrual period, with 18 percentage points standard deviation across urban and rural areas.

The present study was conducted in order to better understand and gauge people's perception towards Menstrual Hygiene Management (MHM) in India. A questionnaire was prepared in both English and Hindi language to gather key variables and indicators that define and explain menstruators behaviors, attitudes and practices during their period. The sample consisted of 11161 respondents, out of which 10023 individuals answered in English and 1138 answered in Hindi. Since the differences in responses was statistically insignificant in both language questionnaires, a combined analysis was conducted. The study comprised of majority of menstruators, amounting to 75.51% inclusive of females, Non-binary and Trans persons, and those who preferred not to specify, and 24.49% of non-menstruators inclusive of males, Non-binary and Transgender persons and those who preferred not to specify

Data processing and analysis yielded the following findings

Source and Level of knowledge on MHM

- Majority of respondents considered menstruation a biological process when they first learned, but at the same time, 11% of the sample, i.e. 1236 people had no idea about it. Around 18.8% were confused. A total of 804 respondents considered menstruation to either an abnormality, disease or curse of god.
- The family environment was the principal source of information and knowledge about menstruation. The earliest information came from mother (43.36%) followed by friends (29.9%) and School (26.1%). It was interesting to observe that more men have received information on menstrual hygiene than women from Internet and Social Media, i.e. through a self-learning mechanism.
- Majority of menstruating respondents (80%) felt one or the other negative emotions when they first experienced their periods, with fear, anxiety and anger ranking the highest at 23, 22 and 15%. On a surprising note 0.2% of the sample also felt positive emotions such as joy, fascination, relief, excitement and happiness.
- As Menstruation is associated with stigma and taboos , discussion and sharing of knowledge with regards to MHM health practices is rare. In

80%

felt negative emotions when first experienced periods

our sample, around 24.5% felt quite comfortable in discussing menstruation with their family, but around 54.4% respondents felt comfortable only with female members of their family. Respondents up to 21% were not at all comfortable in discussing menstruation.

- The study also found that fewer older people are ready to discuss about menstruation in family in comparison to younger people. This gap is even more profound in males than in females.

Menstrual Hygiene Product Usage

- Disposable Sanitary pads were the main form of protection used by menstruating respondents. There difference between usage of disposable sanitary pads and other menstrual hygiene products was stark, ranging from as high as 71% to as low as below 5% respectively.
- Further, the respondents considered disposable sanitary napkins to be safest form of MHM product, and Natural Materials as the most unsafe.
- 7230 respondents sealed and disposed off their sanitary pads in dustbins, while 274 of them disposed it off without sealing. The practice of burning and burying was carried out by 357 and 274 respondents respectively.
- The highest practice of burning was found in Kerala with 36.7% followed by Himachal Pradesh with 17.1%. In the case of burying, with 14.7%, Himachal Pradesh was the highest, followed by Uttar Pradesh at 7.9%.

Work Productivity during Menstruation

- To gauge the factors which tend to affect the productivity loss in menstruators, we found that 66.3% suffered from period pain, followed by tiredness and fatigue at 50.9%. This means that physical symptom tends to have the most effect of productivity.
- It was also found that higher percentage of younger people are affected by period related issues in comparison to older women. In the case of period cramps, 70% of younger women cited it as a reason for hindered productivity, in comparison to 43% of older women.
- Health issues with respect to menstruation was experienced by 90.2% of respondents, with majority of menstruators suffering from

36.7%

Unsafe disposal practices was found in Kerala

70%

Younger women cited it as a reason for hindered productivity

irregular periods and itch/rashes.

90.1%

Believe certain practices need to be avoided

Customs, Traditions and Taboos

- Menstruation stigma has led to 90.1% of the respondents believe that certain practices need to be avoided during the process.
- Majority of the respondents, i.e. 49.2% answered affirmative for avoiding Prayers and 36% for avoiding sexual activity during menstruation, while 29.1% considered that nothing should be avoided at all. Only 2.2% and 3.7% said they have heard practices such as “avoid talking to opposite sex” and “Bathing” respectively.
- Gender wise study reflects that fewer men are pro-avoiding these practices in comparison to other genders, except in the case of cooking, sexual activities and touching drinking water. In fact, a greater number of men perceive that nothing should be avoided in comparison to other genders.
- According to the respondents, 51.1% have experienced instances where menstruators have been isolated or excluded from any particular event because of menstruation.

43%

Believed in menstrual leave

Policy Opinions

- On an average 41% believed that there should be a provision for menstruation leave as it tends to affect productivity due to the immense discomfort a menstruator goes through, while 43%, also believed in menstrual leave but with an option for work from home. A total of 8.5% of the respondents felt that women should opt for sick leaves if cramps during periods are unbearable hindering their work capacity and efficiency, and 24.4% felt that it could lead to bias in hiring of women. Only 21.1% said that instead of menstrual leave, MHM facilities at workplaces should be improved.
- The probability of an older person wanting menstrual leave is as low as 49% in comparison to younger person, while the probability of full-time employees wanting menstrual leave is as high as 59% in comparison to other people in the study.

28.3%

Stated that teachers skip this particular topic

- 27.4% believed that menstruation was adequately discussed in school but 49% thought that information imparted to students could be improved. As high as 28.3% stated that teachers skip this particular topic in school.
- Among all our respondents, only 10% thought that the needs of Transgender and Non-binary menstruators are being addressed in contrast to 11% who thought it was not. As high as 47% thought it to be only women's issue and 31% didn't know that Transgender and Non-binary people menstruate.

Miscellaneous

- Metropolitan cities tend to be more period positive than other cities or towns or villages. (Annexure, Model 1-4)

2. INTRODUCTION

“To deal with menstruation in a healthy and dignified manner, the menstruators have to practice safe menstrual hygiene management.”

According to World Health Organization (WHO), a person aged 10-19 is considered as an adolescent ^[1]. This period is considered to be the transition period between childhood and adulthood, leading to numerous physical, psychological and biological developments of a person. This phase also marks the onset of menstruation, a biological and physiological process which naturally occurs in healthy girls, women, transgender men and non-binary persons of reproductive age. The average age of menarche is mostly consistent across the populations, that is, between 12 and 13 years of age ^[2,3]. It is characterized by shedding of the endometrium, the lining of uterus, which causes bleeding that normally last for 3–5 days and occasionally up to 7 days. ^[4] The menstrual flow may differ across range of people.

To deal with menstruation in a healthy and dignified manner, the menstruators have to practice safe menstrual hygiene management (MHM) practices. As per WHO and United Nations Children’s Fund (UNICEF), MHM is defined as “Women and girls are using clean menstrual hygiene management material to absorb or collect blood, that can be changed in privacy as and when necessary for the duration of the menstrual period, using soap and water for washing the body as required and having access to facilities to dispose of used menstrual management materials ^[5].” However, menstruators across the globe have developed their own strategies to handle this period of time, which may or may not be hygienic. These strategies vary greatly due to differing personal preferences, availability of resources, economic status, cultural beliefs, education status, and knowledge about menstruation. These practices are of a major concern, as it has tremendous impact across the life of a menstruator, affecting not only the sociological well-being but also

economic well-being. Further, it can also lead to substantial health impact if neglected, causing toxic shock syndromes, reproductive tract infections (RTI), and other vaginal diseases ^[6-8]. Yet, the importance of menstrual hygiene management has mostly been neglected by development practitioners within the WASH (water, sanitation and hygiene) sector, and other related sectors for a substantial amount of time, thereby, denying several millions the right to manage their monthly menstrual cycle in a dignified and healthy way. This issue is further due to prevalence of gender inequality, discriminatory social norms, cultural taboos, poverty and dearth of basic sanitation services. To raise awareness regarding the challenges women and girls face to deal with menstrual cycles and highlight solutions implementable at global, national, and local levels, May 28 is observed as the Menstrual Hygiene Day worldwide since 2014. ^[9] Also, it is well established and recognized that poor MHM practices will adversely affect the initiatives and performances of the countries toward achieving a number of important Sustainable Developmental Goals (SDGs) by United Nations (SDGs 3, 4, 5, 6, 8, and 12). ^[10]

Given the following considerations, and a menstruating population of greater than 310 million people ^[11], the government of India has attempted to adopt MHM into several national policies and program. The government of India has primarily focused on MHM through,

1. “Swacch Bharat, Swacch Vidyalaya” campaign to ensure that every school in India is equipped with functional and well-maintained WASH facilities inclusive of soaps, private spaces, adequate clean water supply and disposal facilities.
2. Inclusion of MHM as an integral part of the NDA governments flagship program Swacch Bharat Abhiyan, followed by publication of operational guidelines, by the Ministry of Drinking Water and Sanitation, to be implemented by state governments and district level officers for improved MHM across the country.
3. Considering MHM as a priority area in National Health Mission and in the Reproductive, Maternal, Newborn, Child and Adolescent Health (RMNCH+A) strategy.

4. Generating availability of highly subsidized sanitary napkins for adolescent girls in rural areas by Accredited Social Health Activists (ASHAs), and providing training modules to ASHA to facilitate capacity building.
5. The SABLA program of Women and Child Development Ministry, which focusses on awareness generation with regards to MHM, to improve health and nutrition.
6. Launch of 100 per cent oxy-biodegradable sanitary napkins “Suvidha” in 2018, which is sold in packs of 4 priced at Rs. 10 at Government sponsored Janaushadhi Pariyojana Stores.
7. Inclusion of menstrual hygiene products under the listing of essential items as a response to COVID-19 crisis

Apart from the above initiatives, India has also been a part of several initiatives by international organizations and civil societies, focusing on improving health, well-being, and nutrition status of adolescent girls and women. UNICEF has been instrumental in providing technical guidance and support towards raising awareness, addressing behavior change and also, in capacity building of WASH facilities for enabling safe and clean menstruation^[12]. The Water Supply and Sanitation Collaboration Council (WSSCC) has provided vital guidelines to the Ministry of Drinking Water and Sanitation to recognize the importance of MHM and taken up the task of training Master trainers on MHM through workshops. It has also conducted MHM Labs across India to create awareness with respect to menstruation hygiene practices

Despite the array of initiatives put up so far, a myriad of challenges still remains to be tackled. Ensuring healthy MHM for menstruators would require a thoughtful consideration of the intricacies related to the problem, the needs, and the influencing factors that could potentially affect the perception and practices of menstruators. However, for the purpose of intervention, there has seldom been any national level baseline study to understand the needs and demands of the menstruators by the government. It was only in National Family and Health Survey of 2015-16 that one question with relation to menstrual hygiene was included during data collection. It was found that on an average 58 per cent of women in the age group of 15-24 use hygienic

methods of protection during their menstrual period, with 18 percentage points standard deviation across urban and rural areas. And the average varies wildly between states – from 91% in Tamil Nadu to just 31% in Bihar. ^[13]

The present study was conducted in order to better understand and gauge people's perception towards Menstrual Hygiene Management (MHM) in India. A questionnaire was prepared in both English and Hindi language to gather key variables and indicators that define and explain menstruators behaviors, attitudes and practices during their period. Our sample consisted of 11161 respondents spread across the 29 States of India, and 5 Union Territories (UTs).

3. OVERVIEW OF LITERATURE

“as per UNICEF, 2016, South Asia is home to around 340 million adolescents which is greater than any other region ^[15] and India has the world’s highest number of 10- to-24-year-olds with an estimated 356 million

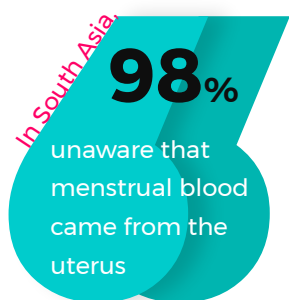
Approximately 26 per cent of the global population are menstruating each month ^[14], and on an any given day, more than 800 million girls and women between the age of 15 and 49 are going through their menses. In fact, as per UNICEF, 2016, South Asia is home to around 340 million adolescents which is greater than any other region ^[15] and India has the world’s highest number of 10- to-24-year-olds with an estimated 356 million. ^[16] Around half of these adolescents are female and among them, several

millions of girls face barriers in accessing comfortable and dignified menstrual health practices. ^[17]

3.1. Puberty Education and Awareness:

A study in South Asia found that 33% of girls in school had never heard of menstruation prior to menarche, and 98% were unaware that menstrual blood came from the uterus, and is the basis of reproductive health. ^[18] A paper by Mahon et al (2010) found that “A survey of 160 girls in West Bengal, found that 67.5% were aware about menstruation prior to menarche, but 97.5% did not know the source of menstrual bleeding. In Nepal, 92% of 204 adolescent girls surveyed had heard about menstruation, but the majority of respondents reported that they were not prepared in any way for their first period.”^[20] Estimates suggest that more than half of women and girls in low- and middle-income countries (LMICs) use homemade alternatives as their primary or secondary method for managing their periods ^[21].

The lack of information and awareness is ubiquitous across the LMICs due to lack of formal puberty education in school and dearth of sensitive mentors to ask questions about the changes in the body during adolescence. Moreover, a study from Tamil Nadu reported that 1.3% of the school girls were scolded by



teachers for menstrual problems [22]. Further, several studies also show that parents often do not feel comfortable in discussing puberty, menstruation or MHM with their children. There are several social determinants such as age, gender, exposure to sex education, exposure to media, school time, parental supervision and parent's education level which can influence menstrual health knowledge and outcomes among young adolescents [23]. However, effective menstruation related conversation remains a taboo, mostly a one-way prescriptive process for girls to receive abrupt and indirect messages from a same-sex parent or a teacher with a limited role of men [24-30]. The lack of information affects the health and lives on the adolescent, for instance, girls avoid seeking treatment as they feel shy [31]; boys tend to unreliable sources such as pornography to seek answers for SRH-related queries [32]; In an another study of Indian boys from three states showed that boys possessed a negative attitude towards menstruation [33]; and only 17.5% Patna boys (n = 461) were aware of the menstruation physiology as compared to 33.1% girls (n = 587) indicating significant gender difference ($p < 0.001$) [34]. Thus, SRH-related communication mostly remains non-inclusive in terms of gender and socioeconomic setting.

The deficit in understanding and lack of adequate support for managing menstruation and puberty results in fear, uncertainty and exacerbates potential of harmful behaviors, like risky sex, reduction in bathing and limitations in intake of food and water. [35-38] Further, the taboo and stigma around menstruation can lead to secrecy, shame, decreased mobility, social and religious restrictions, and impacts on confidence and self-efficacy. Further, the taboo and stigma around menstruation can lead to shame, secrecy, restrictions in mobility, social and religious barriers, and impacts on confidence. [39-40] It also affects the psychological and physiological well-being of a young girl.

When I first started menstruating I was shocked because I had not learned about it before...I was too embarrassed to tell my parents because I knew that they would not accept me and would say that I had bad behavior. I could not tell them because they would say that I shamed the family and would shout at me' (participant) [36].

The girls post menarche and older women did link menstruation with reproduction but several of them had lingering questions on why bleeding occurs ^[41]. Near universally across studies, women and girls recalled experiences of intense negative emotions and confusion if they were unaware of menstruation at menarche, with several respondents reporting that they thought they were either sick or dying. In most cases, women and girls also lacked clarity on what constituted normal periods and what are the symptoms of a disordered periods ^[42].

3.2. Menstrual Health and Life Outcomes

Evidence about the impact of poor menstrual health on other health, development and empowerment outcomes is largely inconclusive. Many studies focusing on menstrual health have small sample sizes and overly rely on qualitative, self-reported, or anecdotal data to assess impact ^[43]. However, to summarize, many studies that focused on school going girls reported consequences for education. Some highlighted full- or part day absences, and others experienced lack of focus and engagement in the class, even if they were present. Major reasons were existence of poorly perceived menstrual hygiene practices such as unreliable absorbents peaking the fear of leak, and lack of sanitation facilities in school premises ^[28, 44-47]. Unsupportive infrastructure was problematic. In many schools, girls reported that they had no adequate location to change absorbents, feared others seeing menstrual blood in latrines, or lacked facilities to dispose or clean absorbents. This meant travelling home to change menstrual materials, often resulting in part-day absences. Menstrual pain made school attendance challenging. Where menstrual restrictions forbade girls from travelling outside the home or being around males, these also directly impacted school attendance ^[44-47].

Fewer studies have researched over the experiences of adult women, and sanitation infrastructure at home and work. Some studies linked restriction of travel, social exclusion and infrastructure deficits to impacts on formal or informal employment. Apart from that, severe cramps and menstruation focus disorders such as Menorrhagia affect work. A survey based study from

Netherland stated that menstruation can lead to 33% of productivity loss among women. In this study, the respondents self-reported lost productivity in days due to menstrual related symptoms ^[48].

3.3. Customs and Traditions

Across studies it was found out that menstrual experience was impacted by myriad of unjustified customs and restrictions on girls, and women. It developed a culture of internally or externally enforced behavioral restrictions, which varied across and within regions. In some cases, women are completely secluded from the community and home during menstruation ^[20, 45]. While in many other cases, menstruating women are considered to be ritually pollution or impure. These beliefs further translated into restrictions on women's behavior, including not interacting or sitting with males; touching or cooking food; having contact with crops, livestock, or farming; or having sex. In many religions, women and girls were banned from praying, touching religious texts or entering places of worship during menstruation. The social construct is such that women and girls took special steps to ensure that others could not see or access their disposed menstrual blood such as washing materials prior to disposal, eschewing single-use disposable sanitary pads, or wrapping used absorbents to prevent detection ^[49]. These restrictions impacted confidence of women, and added to experiences of shame because failure to hide this natural process was viewed as personal failure to maintain feminine standards or menstrual etiquette ^[50].

Further, such taboos about menstruation also led large numbers of girls in many less economically developed countries drop out of school when they begin menstruating. This includes over 23% of girls in India ^[51]. In addition to this, the monthly menstruation period also led to absenteeism of female teachers due to lack of adequate menstrual protection alternatives and/or clean, safe and private sanitation facilities for female teachers and girls undermine the right of privacy ^[50].

3.4. MHM Product Usage

The availability and use of MHM products vary widely across the world, with 75% of women and girls in high to upper middle-income countries use commercial products, and over 50% of women and girls in LMICs use homemade products ^[43]. As per several studies, over 77% of menstruating girls and women in India use an old cloth, which is often reused. Further, several of women in India from low socio-economic background sometimes resort to using ashes, newspapers, dried leaves and husk sand to aid absorption ^[51]. As per NFHS (2015-16), only 58% of women use hygienic methods of protection, out of which 75% reside in urban areas. Disposable pads make up over 90% of sales in India and the continent of Africa; however, overall market penetration remains limited. It is estimated that only 10-11% of women and girls in India use disposable pads. Commercial disposable insertable are widely used in specific markets. For example, over 70% of the women and girls in Germany use tampons ^[52].

3.4.1. Demand Side Constraints:

1. Unfamiliarity with the spectrum of products available and lack of accurate knowledge about use of commercial or home-made alternatives. For example, in a random sample across three districts in Uttar Pradesh, 69% (n=6700) had heard of sanitary pads but had never used one.
2. High price of commercial products deters women and girls from using commercial products, as several women and girls struggled to afford their choice of material. Certain studies mentioned that the poor households frequently lacked money for fulfilling their basic necessities, and for such households, commercial sanitary pads were unaffordable luxury ^[41, 53]. Adolescent girls in poor households noted that requesting money for menstrual needs could cause friction in the household ^[54].

3. Discriminatory social norms lead to restriction in access and mobility to acquire MHM products ^[43].

3.4.2. Supply Side Constraints:

In India, last-mile distribution of sanitary pads remains a challenge even though decentralized models of productions have expanded in recent years ^[55-56]. Several NGOs and for-profit companies unable to reach to the grassroots due to high transportation costs, and lack of distribution-oriented infrastructure.

Research also shows that access to MHM product won't be enough without improved sanitation facilities and awareness creation. When gender-separate sanitation facilities are not available at school, work or public places—women are more likely to stay home ^[57-59]. An absence of sanitation facilities or safe spaces outside the home meant managing menstruation in these locations was more challenging, reducing confidence to travel outside the home and increasing distress and fear of shame and leakage. There were also challenges in disposing off one time MHM product, and cleaning the reusable products ^[60].

3.5. Others

Menstruation has long been viewed as an important aspect of women's health. However, scholars and healthcare providers have only recently begun to recognize that transgender men and people with masculine gender identities also menstruate, thus little is known about their attitudes toward and experiences with menstruation ^[61].

It is critical that investments in research and interventions related to menstrual health encompass all people who menstruate, including trans men and individuals who do not identify along gender binaries. Similarly, little is known about girls aged 10-14, as current survey tools often exclude very young adolescents into their sampling populations.

4. METHODOLOGY

For this study, a questionnaire was prepared in both English and Hindi languages to gather information on key variables and indicators that define and explain menstruators behaviors, attitudes and perceptions during the period. The data set consisted of 11161 respondents, out of which 10023 individuals answered in English and 1138 in Hindi Language. Since the differences in responses was statistically insignificant in both language questionnaires, a combined analysis was conducted.

The cross-section survey data collected over the course of 3 months was analyzed through cross tabulation analysis and logistic regressions to estimate the relationship between numerous demographic variables and perception associated questions. Both of the methodologies were adopted since the data was primarily qualitative/categorical in nature with most answers being in multiple response format. The cross-tabulation analysis is used to understand the relationship between two or more variables. It assists in finding patterns, trends and probabilities within raw data. The chi square statistic is used for testing the significance of a cross tabulated analysis. It determines whether the two variables are independent or related. While, the logistic regression methodology is used to conduct a relatively sophisticated analysis to test several hypotheses, majorly, the probability of a particular event occurring, when the dependent variable is dichotomous (binary). The Wald Test is used to gauge the statistical significance of the coefficients (Beta's) in the analysis.

In statistics, the logistic model (or logit model) is used to model the probability of a certain class or event existing such as pass/fail, win/lose, alive/dead or healthy/sick. In regression analysis, logistic regression (or logit regression) is estimating the parameters of a logistic model. Mathematically, a binary logistic model has a dependent variable with two possible values, such as pass/fail which is represented by an indicator variable, where the two

values are labeled "0" and "1". In the logistic model, the log-odds (the logarithm of the odds) for the value labeled "1" is a linear combination of one or more independent variables ("predictors"); the independent variables can each be a binary variable (two classes, coded by an indicator variable) or a continuous variable (any real value). The corresponding probability of the value labeled "1" can vary between 0 (certainly the value "0") and 1 (certainly the value "1"); the function that converts log-odds to probability is the logistic function.

In a binary logistic regression model, the dependent variable has two levels (categorical). The logistic regression model itself simply models probability of output in terms of input.

In the present study, several perception variables are modelled as dependent variable so as to gauge the probability of dependent variable happening given the demographic variables. For example, if we take "Nothing should be avoided during Menstruation" as our dependent variable in a model, we will get to know how likely is a person of "certain" demographic, be it age, education, work status etc. to believe that nothing should be avoided. The model specifications used in study are given in Annexure I. The analysis was conducted through R and Social Science Statistical software SPSS.

5. CHARACTERISTICS OF STUDY POPULATION

5.1 Demography

Our sample consisted of 11161 respondents, out of which majority were female, amounting to 74.3% respondents, followed by males, who were 22%. The other genders amounted to 3.4% (Chart 1A). Among these, the menstruators amounted to 75.51% of our sample and the non-menstruators amounted to 24.49%.

Chart 1A

Gender Demographic

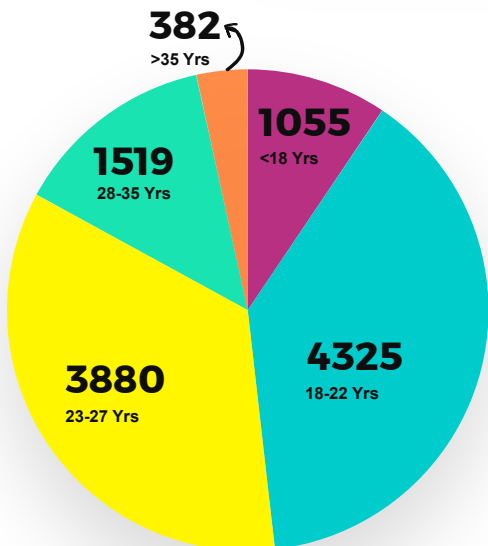
Respondants

11,161

♀ Female	8294	74.3%
♂ Male	2460	22%
♂ Others	407	3.4%
28 Non Binary	5 Transgender	374 Prefer not to specify

Chart 1B

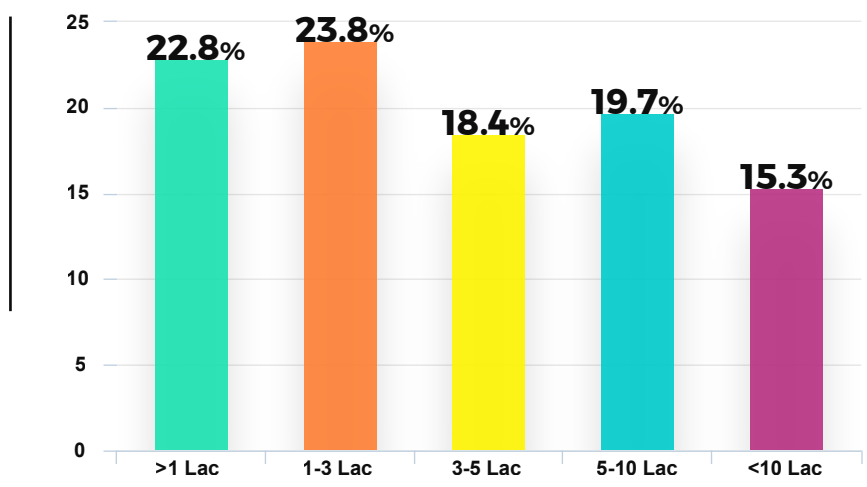
Sample Age Group



18-22 Yrs	38.3%
23-27 Yrs	34.8%
Younger than 18	9.5%
Older than 35	3.4%
28-35 Yrs	13.6%

Chart 1C

Sample Income Range



Most of the respondents belong to 18-22 age bracket at 38.3% and 23-27 age bracket at 34.8%. The sample represented 9.5% and 3.4% of younger than 18 and older than 35 population respectively. Around 13.6% of the respondents were in the 28-35 age bracket. (Chart 1B). The sample population was more or less equitably diverse across income ranges with 22.8% of population having an annual household income of less than 1 lac and 15.3% of population have an annual household income of more than 10 lac (Chart 1C).

5.2. Work and Education Status

In our sample, majority of the respondents were students, followed by full time employees at 49.3% and 26.2% respectively. Around 10.6% were unemployed (Chart 2A.).

Chart 2A

Work Profile (in %)

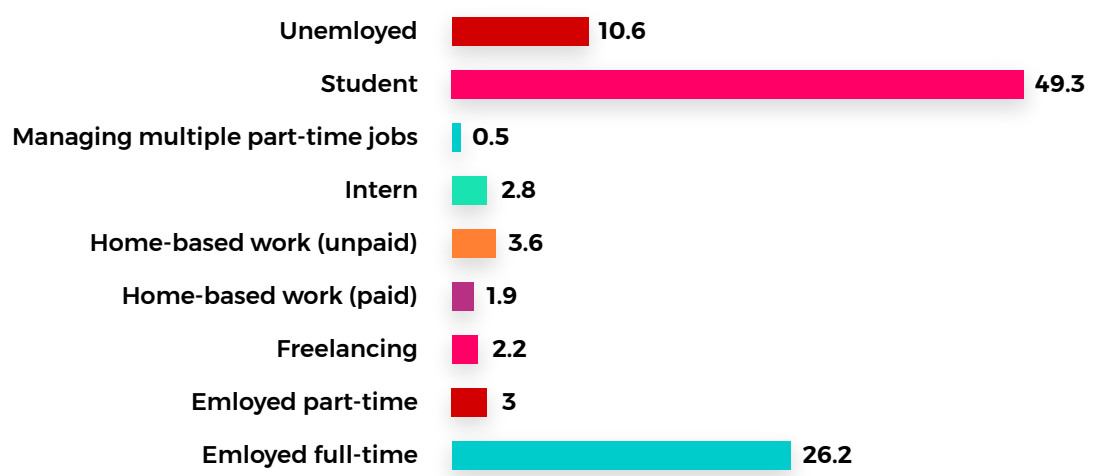
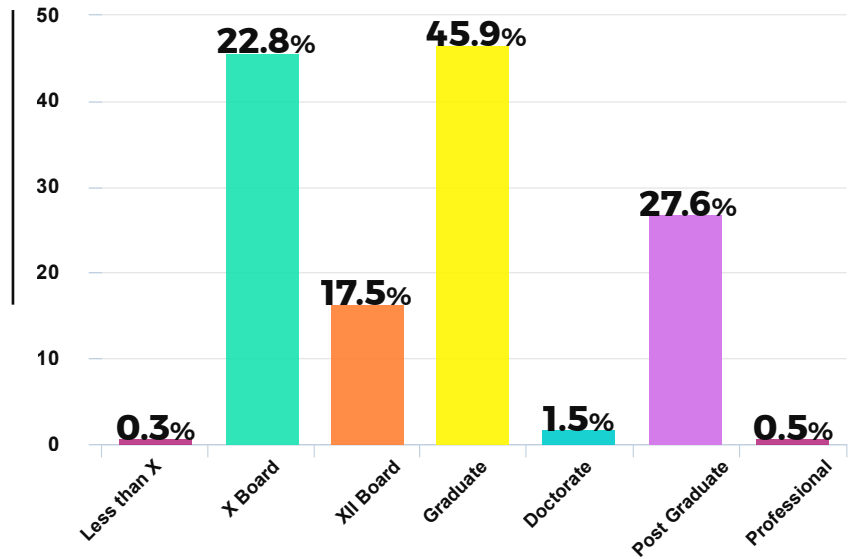


Chart 2B

Education Profile (in %)

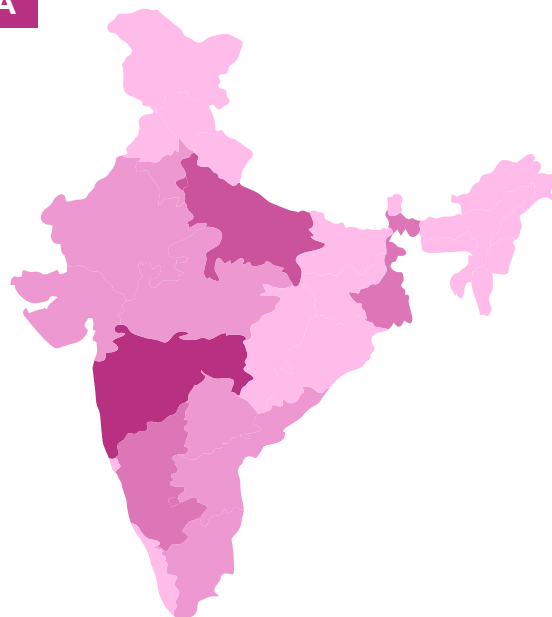


At 45.9%, the number of graduates in the sample was the highest. Further, there were 27.6% and 17.5% post graduates and matriculates respectively (Chart 3A).

5.3. Spread of the Study Population

The respondents are spread across the 29 States of India, and 5 Union Territories (UTs). The Chart 3A. represents a heat map with respect to the spread of the population.

Chart 3A



Sample Population Frequency

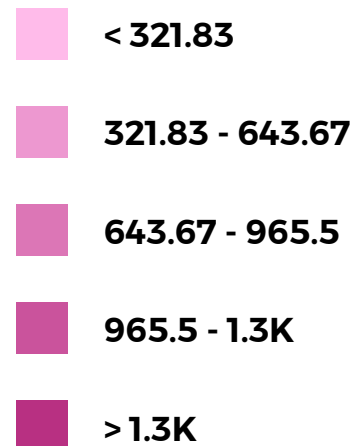


Table 1

Respondents from Metropolitan Cities

Cities	Total Number	% in Population
Delhi NCR	3002	26.9
Mumbai	1139	10.2
Kolkata	698	6.3
Bangalore	506	4.5
Hyderabad	317	2.8
Pune	315	2.8
Ahmedabad	228	2.0
Chennai	213	1.9
Total	6418	57.5

We can observe that majority of the respondents belong to Maharashtra and New Delhi, with 1931 and 1326 people respectively. It is followed by 1100 respondents from Uttar Pradesh and 880 from West Bengal. The northern and eastern states have relatively lower frequency of respondents, with 14 from Jammu Kashmir, Tripura and 10 from Mizoram. The lowest respondents are from the UTs of Leh Ladakh and Daman Diu at 1 and 2 respectively. The data is

however skewed majorly towards larger metropolitan cities such as Delhi, Mumbai, Kolkata, Bangalore, Hyderabad, Pune, Ahmedabad and Chennai (Table 1).

The data has not been weighted considering the large variability in the weighing methodology due to the variability across the states and gender which would amount to increase in standard errors. However, to account for the skewness in the data, the comparison across states has been limited to within “states” and within “gender”, than across states and gender.

6. RESULTS AND DISCUSSION

To gauge the perceptions on menstrual hygiene of young Indians, the respondents were made to answer questions across a range of spectrum. The study intends to cover,

- 6.1. Awareness
- 6.2. Menstrual Hygiene Product Usage
- 6.3. Work Productivity during Menstruation
- 6.4. Menstrual Health
- 6.5. Customs, Traditions and Taboos
- 6.6. Policy opinion

6.1. Awareness

It is often known that menstruators in India are unaware of menstruation until the day of menarche, or even if they have information, it's barely adequate to go through the process. As a result, the first experience of menstruation is of shame, fear, agony or sin.

In our sample, when respondents were asked about their understanding on the cause of menstruation when they just heard about it, 97.3% considered it to be a biological process, but at the same time, 11% of the sample, i.e. 1236 people had no idea about it. Around 18.8% were confused. A total of 804 respondents considered menstruation to either an abnormality, disease or curse of god (Chart 4A).

Chart 4A

Cause of Menstruation

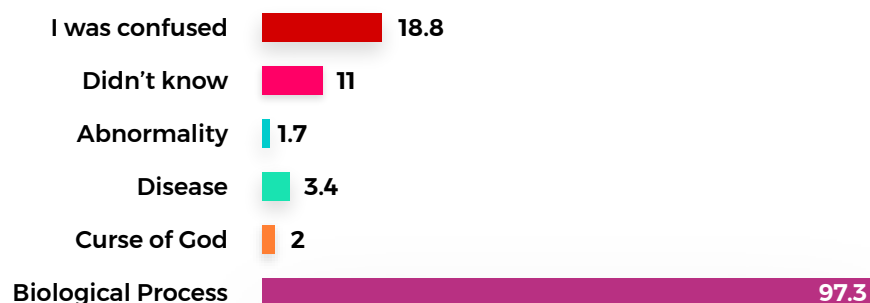
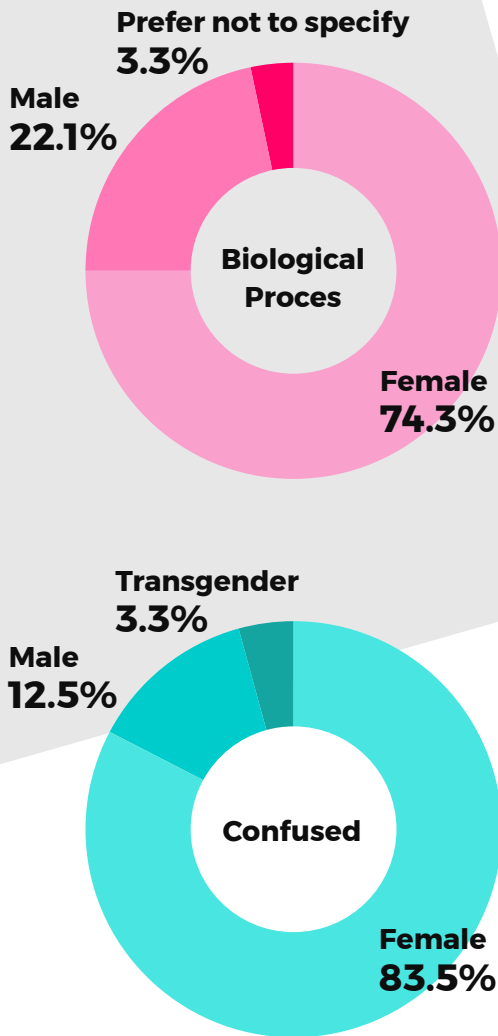


Chart 4B

Gender Spread for Biological Process and Confusion

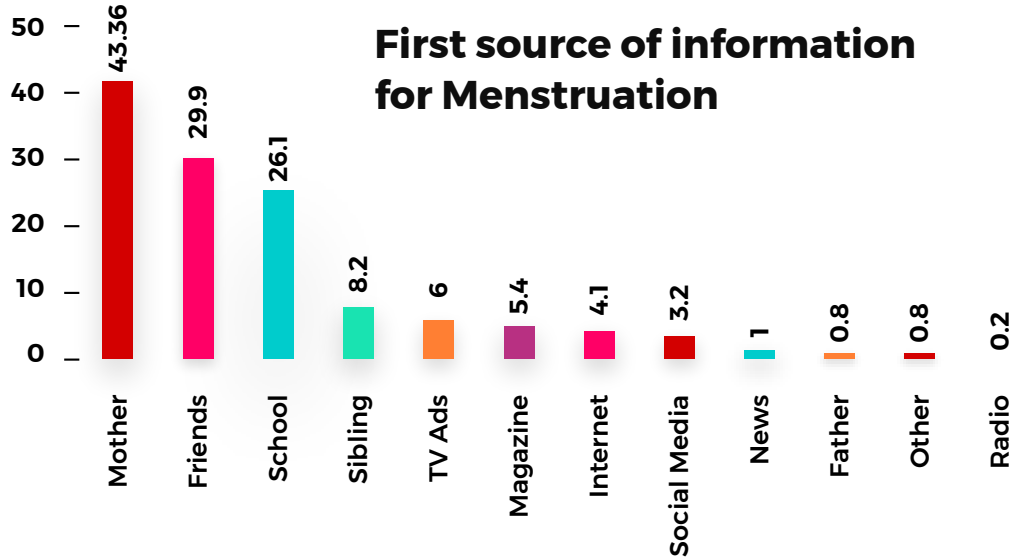


For each gender category, more than 95% of people considered menstruation to be a biological phenomenon with 8074 women, 2395 men, 356 who did not wish to specify, 5 transgender and 27 those who belong to the non-binary category.

Among all those who were confused with menstruation, 83.5% were female, amounting to 1755 individuals, which is a rather large number. Similarly, around 263 males were confused when they just heard about menstruation (Chart. 4B).

Majority of respondents “for the first time” came to know about Menstruation through their mother, followed by friends, and school. A relatively lower share of the sample got their information from siblings, TVs, Books, Internet and Social Media, ranging from 3 to 8%. Further, only marginal number of people got their first-time information from their fathers, newspapers, radios, etc. (Chart 5A)

Chart 5A

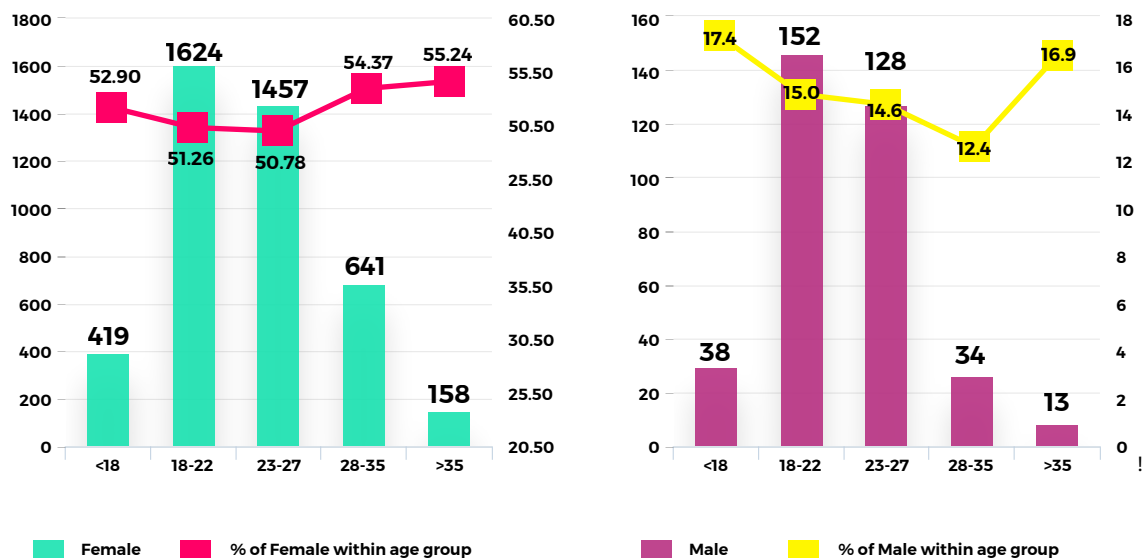


A rather interesting scenario is observed in Chart 5B where under all age brackets around 50% of the female respondents have received their first-time information on menstruation from their mother.

Similarly, under all age brackets, around 15% of male respondents have received their first-time information from their mothers. This reflects that throughout the course of years, mothers have the most profound and immediate

Chart 5B

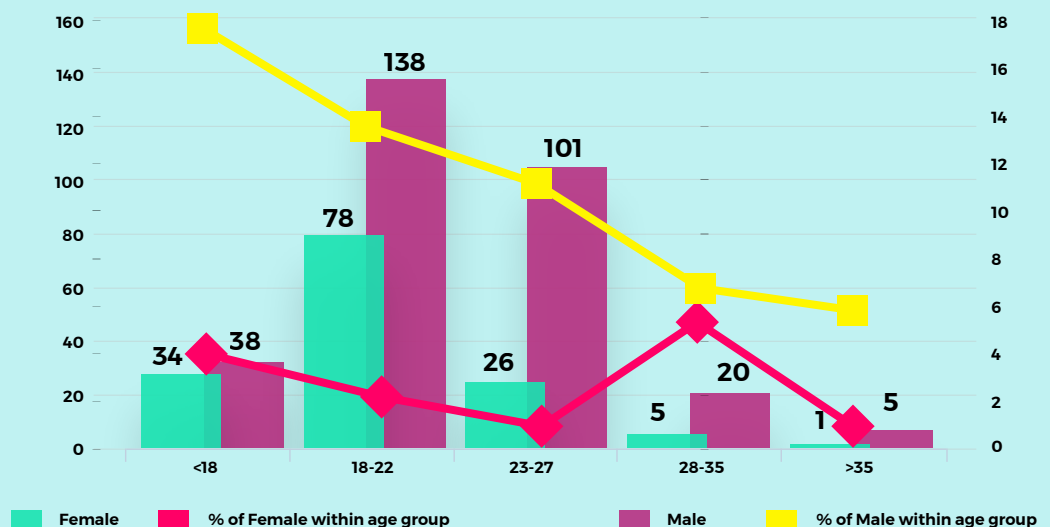
First Time Information Source- Mother



diate impact on the learnings related to menstruation. Similarly, we find that 30 per cent of both men and women have got their first-time information from School, friends and siblings. The first-time information source for trans, binary and not specified category of people was distributed across the spectrum.

Chart 5B

First Time Information Source- Internet



In Chart 5C, it is quite curious to observe that more men have received information on menstrual hygiene than women from Internet in both absolute terms and percentages. The case is similar with respect to Social Media, with 213 male respondents as compared to 33 female respondents. This may be due to the fact that families and schools most of the times tend to restrict their menstruation learning and information only towards females. As a result, men are more likely to self-learn through secondary sources on the Internet and Social Media.

Majority of menstruating respondents felt one or the other negative emotions when they first experienced their periods, with fear and anxiety ranking the highest at 23 and 22%. Around 20% of the menstruators felt no emotions at all, while on a surprising note 0.2% of the sample also felt positive emotions such as joy, fascination, relief, excitement and happiness (Chart 6). This was majorly due to excitement of finally being a woman. One of the respondents

from Assam had described an Assamese Tradition known as ‘Tuloni Biya,’ which is a celebration for welcoming the young girl’s maturity and fertility. The celebration is as grand and detailed as a small wedding. For most of us, who have been busy hiding menstruation, this fact seems to be quite astonishing. To garner family dynamics with respect to menstruation, the surveyors were

Chart 6 Emotions experienced during menarche



asked “How comfortable they are in discussing menstruation with their family?” Around 24.5% felt quite comfortable in discussing menstruation with their family, but around 54.4% respondents felt comfortable only with female members of their family. Respondents up to 21% were not at all comfortable in discussing menstruation.

When we observe the responses through gender and age, we find that fewer older people are ready to discuss about menstruation in family in comparison to younger people. This gap is even more profound in males than in females. Among both females and males, it is clearly observable that as the age increases, an individual is less likely to discuss menstruation. On the contrary, younger people, especially in the age brackets of 18-22 and 23-25 are most comfortable in speaking about menstruation (irrespective of gender) at 28 and 27% respectively (Chart 7). These results are also observed in the logistic

regression analysis with the probability of older people discussing menstruation with all members of the family being 40% lesser than that of younger people, and the probability of not discussing at all being 60% higher than younger people. Similarly, the likelihood of a female discussing to all members is 1.49 times higher than other genders. The people with higher income is have higher probability to discuss menstruation than those with lower incomes. Further, people with higher education and employment also have a higher probability of discussing menstruation. The respondents from metropolitan cities have 56% higher probability of discussing menstruation with all family members, and 46% lower probability of not discussing menstruation at all, in comparison to respondents residing outside metropolitan cities. (Annexure I, Model 1)

Similar trends were observed when respondents were asked about their comfort level in discussion menstruation with their children (now/future). Among all respondents, 81.8% were comfortable with both genders, 9.9% with daughters, 6.3% were not sure and 1.8% were not comfortable in such a discussion. With respect to partners, 93.5% of respondents said they were comfortable.

Chart 7 Comfort in discussing Menstruation with Family



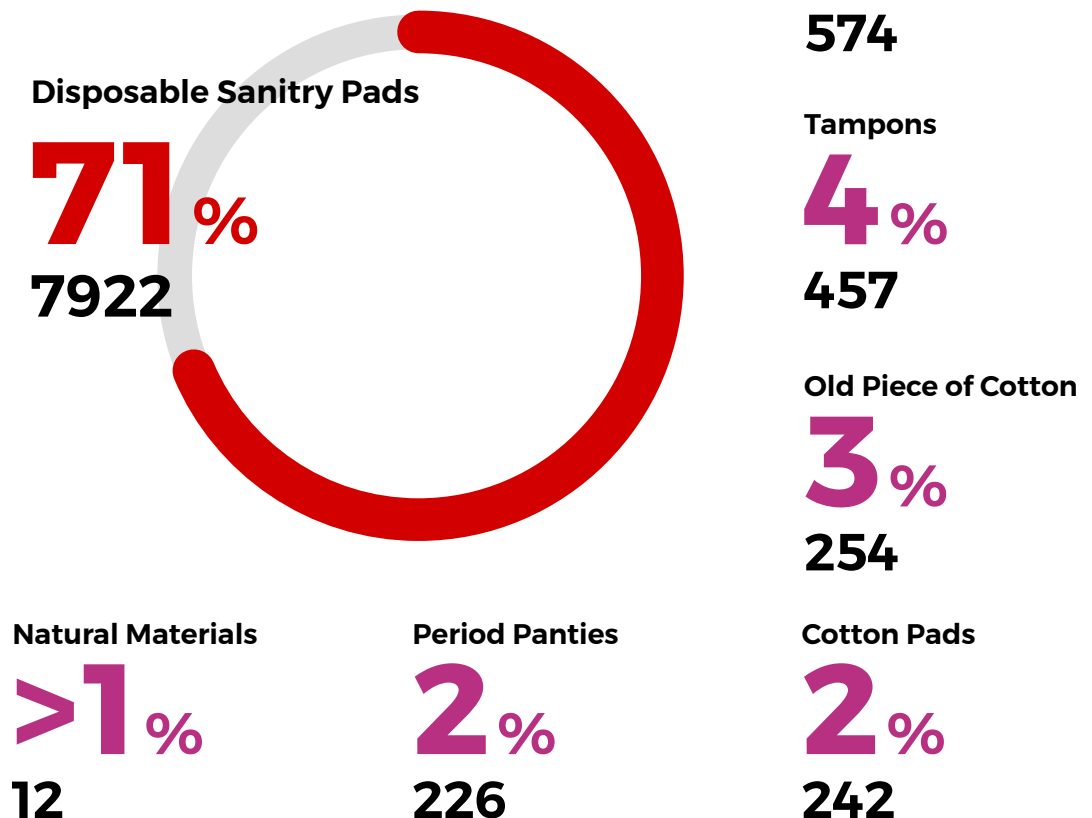
6.2. Menstrual Hygiene Product Usage

Through our survey, it was found that 71% of our menstruating respondents were heavily dependent over disposable sanitary pads. There is a stark difference between usage of disposable sanitary pads and other menstrual hygiene products ranging from as high as 70% to as low as below 5% respectively.

Since, the response was multiple choice, we found that several respondents do attempt to diversify their product usages. Around 2210 menstruators from our sample chose in pairs, such as Disposable Sanitary Pads-Reusable Cotton Pads, Disposable Sanitary Pads-Old piece of Cloth, Disposable Sanitary Pads-Tampons and Disposable Sanitary Pads-Cup. This may be due to difference in blood flow across the period cycle.

Chart 7

Chart 8. A Menstrual Hygiene Product Usage



Further, the respondents considered disposable sanitary napkins to be safest form of MHM product, and Natural Materials consisting of Hay, leaves, cow dung etc. as the most unsafe.

The respondents 63.4% of times did recognize that sanitary pads are harmful to the environment. Among women, the awareness was greater with 71.7% of total women considering it harmful, as compared to 34.6% of men. Among other genders, 72.8% considered it to be harmful. In fact, 80.7% of menstruators who find sanitary pads to have environmental consequences are ready to switch to alternate eco-friendly products, provided it provides quality protection and is affordable.

As per the logistic regression results, the probability of a metropolitan respondent finding sanitary pads to be environmentally harmful is 58 per cent in comparison to respondents from other residing in other areas, however, this recognition not necessarily leads to a desire to switch towards eco-friendly products, as the coefficient is non-significant. Also, a person with relatively higher education is more likely to recognize the harms and switch to eco-friendly products (Annexure I, Model 2).

In table 2, we can see the ways by which people dispose off their used sanitary napkins. It is essential to know, because used sanitary napkins are known to cause huge environmental and health damages. The majority of our respondent's seal and dispose off the pads, followed by burning and burying. The practice of burning and burying leads to long term consequences in the form of air pollution and period blood transfusion into the soils. Several studies in India suggest that unsafe disposal practices such as throwing absorbents in open spaces and burning was significantly higher in community studies (especially in rural and slum settings) than in school-based studies with prevalence of dustbins, and that reliable solid waste disposal of menstrual products was more common in urban settings than in rural settings. From our sample, we can observe the highest practice of burning in Kerala with 36.7% followed by Himachal Pradesh with 17.1%. In the case of burying, with 14.7%, Himachal Pradesh is the highest, followed by Uttar Pradesh at 7.9%.

With respect to accessibility to menstrual hygiene management products, 72.7% of the respondents were always able to buy MHM products from stores. This number is higher for females than for males. On the other hand, among all men, 24% of men couldn't purchase sanitary materials because they felt really uncomfortable to do so while this was the case with only 2% of females.

Table 2 Sanitary Pads Disposal Methods

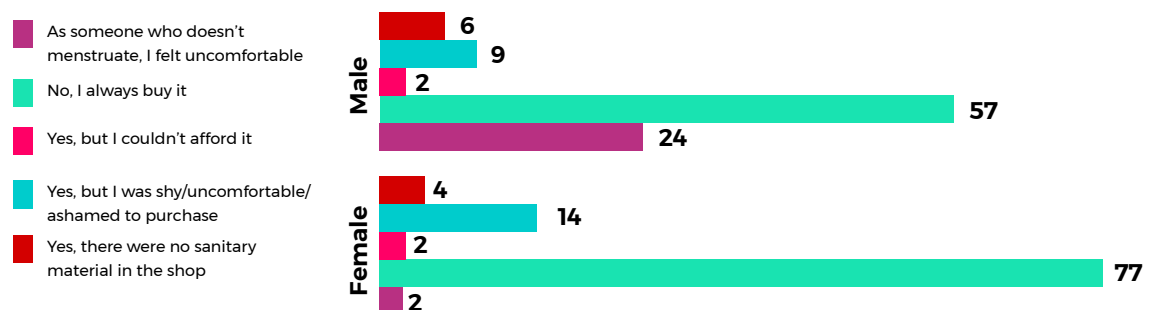
Dispose of Sanitary Pads	Respondents said "Yes"	Percentage
Burning	357	3.1
Burying	174	1.5
Disposing in dustbins without sealing	274	2.4
Flushing	108	0.9
I do not use sanitary napkins	268	2.4
Sealing and disposing in public/private dustbins	7230	64.7

14% of females, however, were able to purchase sanitary products from the store even though they felt shy and ashamed. Among the total respondents, 1.9% couldn't afford it, while 4.7% didn't find any menstrual hygiene products in the store (Chart 8B).

6.3. Work Productivity during Menstruation

For some women, the menstrual cycle is accompanied by many psychological changes, such as irritability, mood liability, depression and anxiety. The most prevalent physical symptoms of the menstrual cycle include period cramps, tiredness and fatigue, back ache etc. Apart from that, menstruation also requires

Chart 8B Respondents on if they were ever unable to buy menstrual products



accessibility to clean and safe washrooms, clean water, safety from leakage etc. All these factors combined tend to affect the productivity of women, especially for those, who deal with heavy and painful menstrual periods.

In a study conducted in Netherlands, 2017, it was found that the average woman perceived herself to be about 33% less productive during menstruation ^[48]. The respondents were asked to self-report the factors which hindered their productivity during menstruation, and it was found that period cramps and tiredness/fatigue affected 66.3% and 50.9% of the menstruators respectively (Chart 8A).

Several respondents separately mentioned back pain and vomiting, while, few of the respondents spoke about issues such as Endometriosis, which is a painful disorder in which tissue similar to the tissue that normally lines the inside of the uterus grows outside the uterus and Polycystic Ovary Disease (PCOD). The respondents suffering from Endometriosis experienced complete productivity loss, while those suffering from PCOD had to deal with hormonal imbalances throughout the long gaps between their irregular periods, affecting their mood and energy..

In Chart 9B, population has been divided between young and old. The young group consists of all menstruators below 28 years, and old group consists of all menstruators above 28 years.

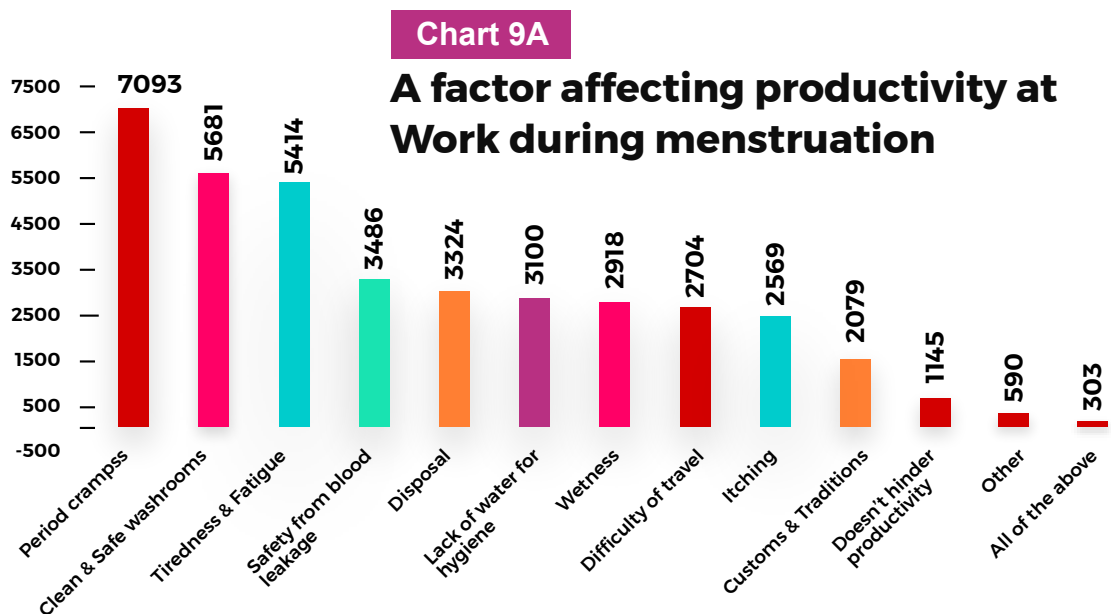
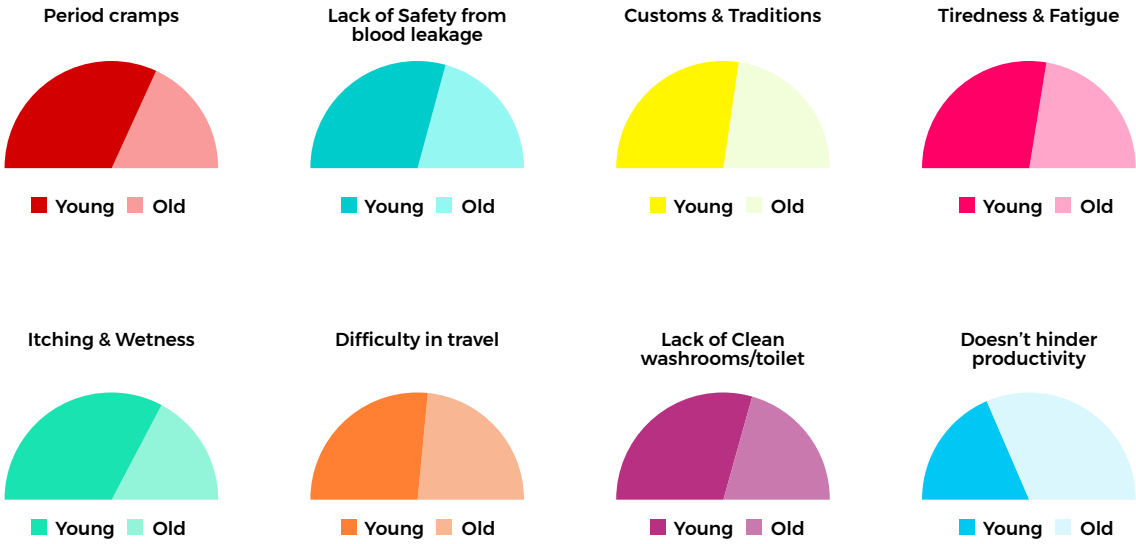


Chart 9B

Factors affecting Productivity with respect to Age



We can observe that a higher percentage of younger people are affected by period related issues in comparison to older women. In the case of period cramps, 70% of younger women cited it as a reason for hindered productivity, in comparison to 43% of older women. Similar is the case with all other factors, with marginal change in magnitude of difference.

We can also see that more older women are claiming that periods do not affect their productivity than younger women., and hence, they take comparatively less leaves (Table 3). The logistical regression analysis also finds out that the probability of an older women not being hindered at work due to menstruation is as high as 59% (Annexure I, Model 3.b) These results are tangential with several studies.^[62]

In a cross tabulation between work status and “Periods does not hinder my work productivity” variable, it was found that unemployed and freelancing respondents have answered ‘Yes’ highest number of times at 14 and 12%. The other professions were lying between 7-10%. The chi square statistics considered it to be significant at 5% level.

Table 3

Number of Leaves due to Menstruation

Dispose of Sanitary Pads	<18	18-22	23-27	28-35	Above 35	Total
1-2 days	28.9	33.1	31.4	25.3	19.9	30.6
3-5 days	3.8	3.5	3.5	3.9	3.9	3.6
5-days or more	0.4	0.3	0.6	0.9	0.5	0.5
No leaves	42.8	37.0	39.5	49.2	53.9	40.7

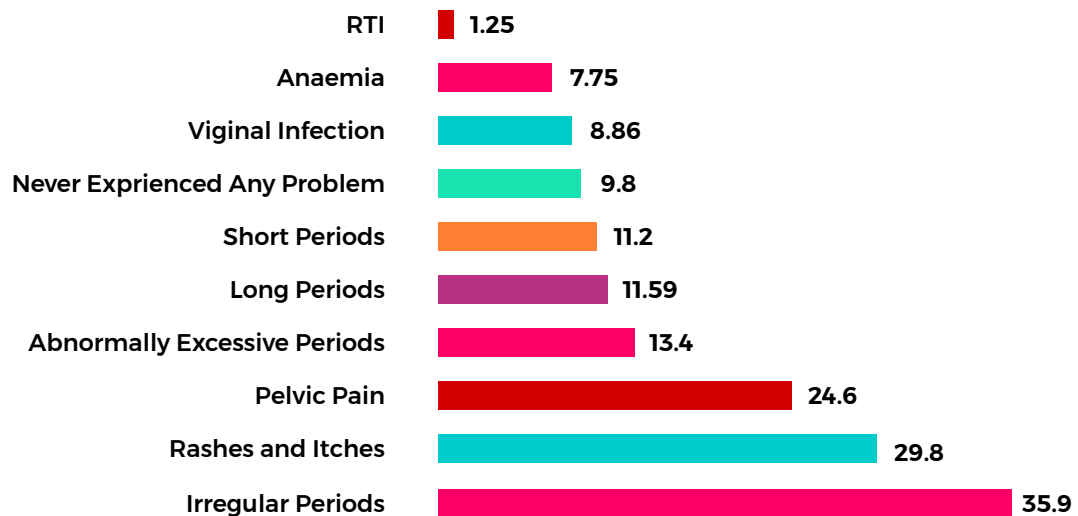
6.4. Menstrual Health

Menstrual disorders are a common presentation by late adolescence; 75% of girls experience some problems associated with menstruation including delayed, irregular, painful, and heavy menstrual bleeding.^[65]

In our sample, 35.9% of menstruators suffered from irregular periods, which can at times be a symptom of PCOD, is a condition that affects a woman's hormone levels. Women with PCOS produce higher-than-normal amounts of male hormones. This hormone imbalance causes them to skip menstrual periods and makes it harder for them to get pregnant. However, periods can also be irregular due to several other factors such as stress, pregnancy, birth control pills, uterine fibroid etc.

Chart 10

Menstrual Health Issues



From our sample, 69.1% of respondents visited doctor for irregular flow. Further, 29.8% suffer from rashes and itching, which may require a change in the method of menstrual hygiene management. In our sample, those who suffered from issues of rashes and itch, 46.2% changed their menstrual hygiene management product (Chi square test is significant at 5% level).

Around 13.4% of menstruators in our sample deal with abnormally excessive periods, which is also known as Menorrhagia in extreme cases, while 11.2% of menstruators deal with extremely short periods, also known as Hypomenorrhea in extreme cases.

We can also find that 9.8% of our sample hasn't faced or experienced any menstrual related health issues, which is sadly a very low number. As per the logistic regression analysis, the probability of a relatively highly educated female respondent stating that "one hasn't experienced any period issue" is as low as 49% than respondents with lower levels of education. This could be due to the fact that education may bring about recognition and awareness with respect to issues of menstruation. Similar is the case with respondents from metropolitan cities, who have 50% less probability of stating that they have no health issues with respect to their menstruation (Annexure I, Model 3c).

6.5. Customs, Traditions and Taboo

Menstruation is stigmatized in our society due to the traditional beliefs in impurity of menstruating women and our unwillingness to discuss it normally. It may come as a surprise, or maybe not, but all religions (excluding Sikhism) refer to menstruating woman as 'ritually unclean'.

Several practices are carried out during menstruation, which may or may not be the norm in every household. The degree of following the rules and the practices varies from family to family depending on their beliefs and on how strongly they hold on to their traditions. During menstruation some women aren't allowed to enter the kitchen and temples, sleep in the day-time, bathe,

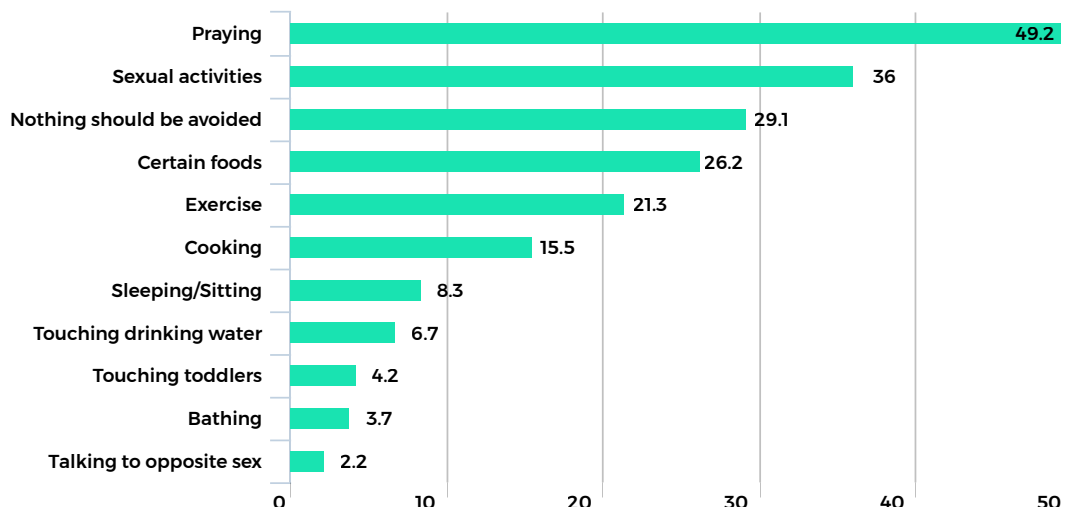
wear flowers, have sex, touch/talk other males or females, talk loudly, and touch pickle. According to mythology, a pickle touched by a menstruating woman rots away. In extreme cases, menstruating women also have to live in secluded huts during this time and eat bland food.

In our survey, we asked our respondents on what practices they have ‘heard’ which should be avoided during menstruation, Majority of the respondents, i.e. 49.2% answered affirmative for Praying, followed by sexual activity at 36% and nothing should be avoided at 29.1%. Only 2.2% and 3.7% said they have heard practices such as “avoid talking to opposite sex” and “Bathing” respectively.

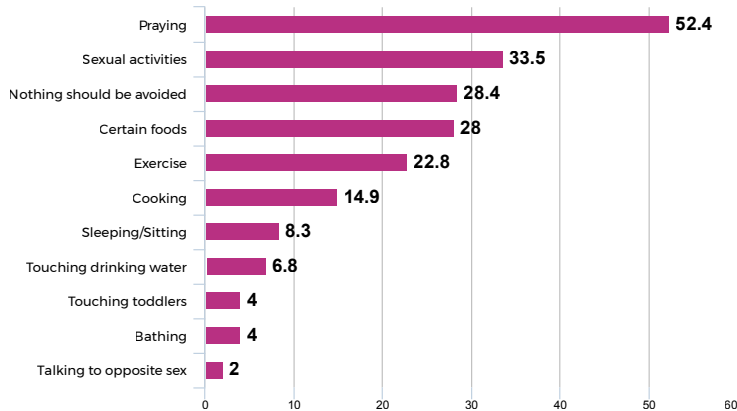
In Chart 11A, we can observe that fewer men are have heard about avoiding these practices in comparison to other genders, except in the case of cooking, sexual activities and touching drinking water. In fact, the logistic regression analysis reflects that females are 47% less likely to state that nothing should be avoided in comparison to other genders. Similar is the case with older people. However, respondents, both who have relatively higher income and stay in metropolitan cities are more likely to state that nothing should be avoided. (Annexure I, Model 3)

In Chart 11B, we observe heat map of India with respect to practices of avoid-

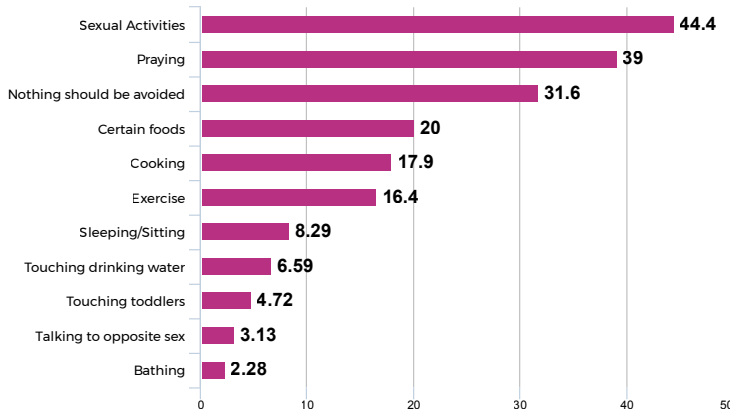
Chart 11A Practices avoided during Menstruation



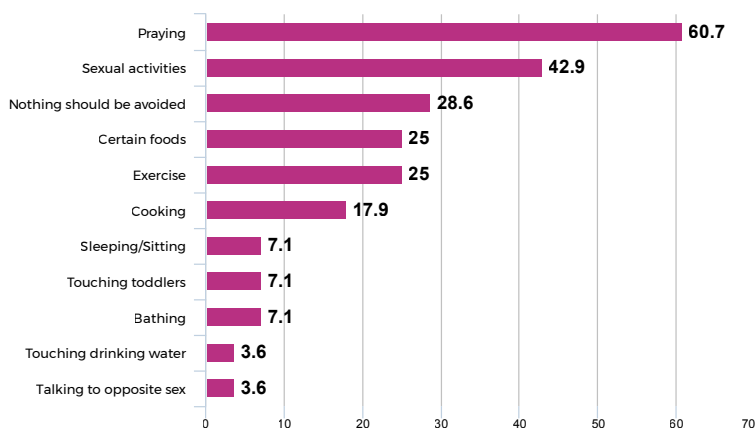
Female (Within Gender)



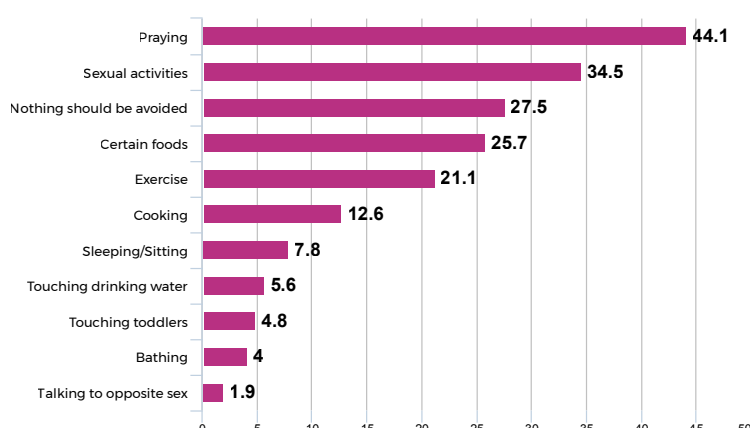
Male (Within Gender)



PNTS (Within Gender)



Non-Binary (Within Gender)



ing prayers, sexual activities and avoiding nothing at all during menstruation.

The heatmaps are formulated using the Within Group Percentages for each of the states.

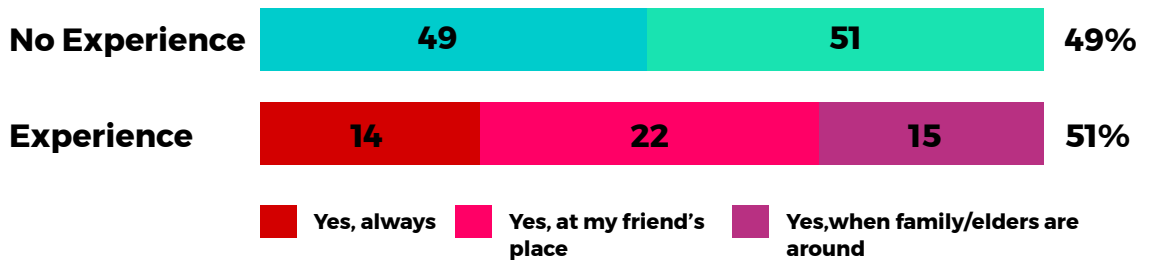
In figure A, the belt of Central India reflects that most of the respondents in these areas are most likely to have heard of avoiding prayers during menstruation, with Madhya Pradesh ranking at the top, with 71.1% of its population, followed by Jharkhand, Uttar Pradesh, Rajasthan, Bihar and Chhattisgarh within the range of. 67% to 55%. The majority of people from north eastern states, i.e. 80% of respondents from the states, do not believe that prayers should be avoided during menstruation.

Similarly, in figure B, the northern states of Uttarakhand and Punjab have the highest number of people who heard that sexual activities need to be avoided during menstruation, with 78 and 73% respectively. The states ranking low are

Nagaland, Odisha, Chhattisgarh and Manipur, but even these states have more than 50% of population believing that sexual activities should be avoided. In figure C, the states of Kerala, Punjab, Arunachal Pradesh and West Bengal, have the highest number of people within each state who responded that “Nothing Should be Avoided” during menstruation.

Among our respondents, 51% have witnessed some form of isolation, among which 14% have always experienced it., i.e. as much as 1598 individuals. While, 22% and 15% have experienced it either at their friends place or when elders/-family members are around. (Chart 11C) The statistics on isolation is rather shocking, highlighting the utmost necessity on educating people on menstruation and its customs and taboos. The event of isolation can hinder a menstruator both social and economic mobility. It can lead to loss of opportunities, and curb freedom of mobility and choice.

Chart 11C Respondents who have witnessed Isolation during Menstruation



6.6. Policy Opinions

A) Menstrual Leave Policy

Menstrual Leave Policy is passed by the state when it recognizes the distress and discomfort periods can cause to a menstruating person, thereby, affecting their productivity and hence allowing them to have an option to take a paid or unpaid leave from employment by law. It is a controversial topic because it is assumed by the critics to be sexist, while those who support it consider it to be a promoter of gender equality.

In January 2018, a member of Parliament from Arunachal Pradesh, Ninong Ering, moved a private members bill, known as the Menstruation Benefit Bill,

Chart 11B

Heat Map of India with respect to certain practices*

Fig. A

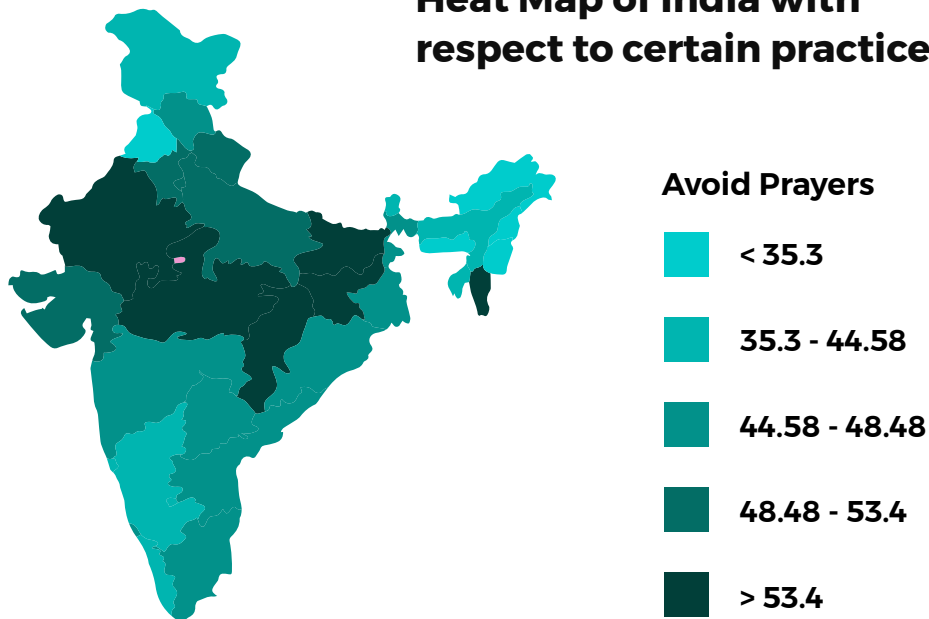


Fig. B

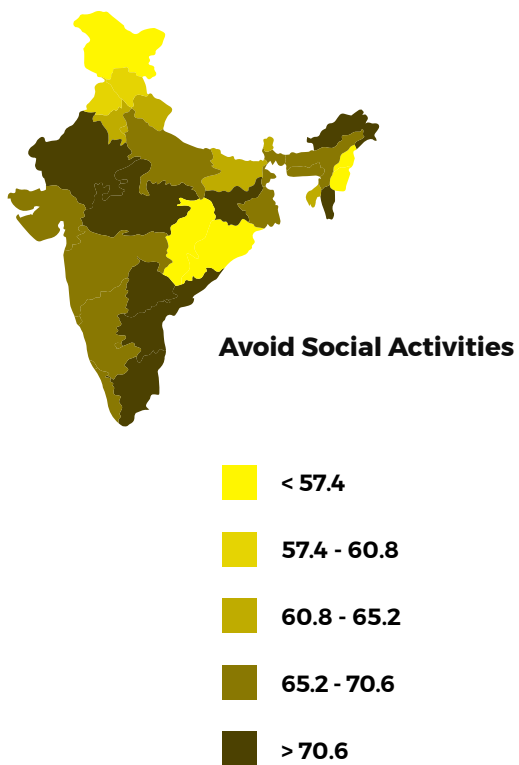
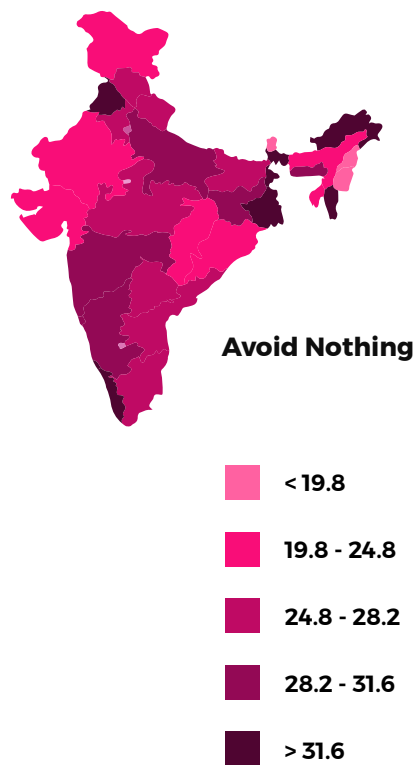


Fig. C



2017, which suggested that women working in both private and public sector should get two days paid menstrual leave each month by law. However, the ministry of Women and Child development denied passing any legislation over the issue. The response acted as a spark to fire the debate on the issue,

Those in favor of period leave argue that it is a mark of an organization's sensitivity to the physiological needs of its women employees. They tend to cite several public health researches which recognizes the widespread presence of conditions such as endometriosis, Menorrhagia, adenomyosis and PCOS, which are associated with severe and unmanageable period pains and cramps, leading due to heavy bleeding, for example, endometriosis affects about 10% of women in the reproductive age group (Rogers et.al, 2009). They also argue that a legislation may be helpful in addressing taboos around menstruation by bringing it into the mainstream, through discussion and transparency. There are however several concerns with regards to the bill, primarily that it focusses only on the needs and requirements of the urban privileged office-going women, and totally disregards the concerns of vast majority of Dalit and Non-Dalit women involved in unskilled or semi-skilled work, who seldomly have access to Menstrual Hygiene Products. (TK Lama, 2017). The argument also extends to homemakers, whose work is not considered, in spite it's vital economic and non-economic contribution.

On the other hand, the economic interest group which argues against the legislation of menstrual leave policy, state that women as a group are already disadvantaged in the job market, given the several constraints they face due to their biological and sociological responsibility. They believe that additional leaves for menstrual will further exacerbate discrimination and reinforce the stereotypes. The focal point of the discussion is a possibility of increase in the gender pay gap, which is already 24.81% as of 2013, and increases with seniority, age and qualifications (Varkkey & Korde, 2013) and the impossibility of breaking the glass ceiling, due to introduction of additional constraints and burdens over the employers.

Very few of the countries in the world have looked past the criticism with a

broader goal of making organizations and workplaces inclusive of women's bodies and bodily functions (Chart 11A), while several other countries, inclusive of India are battling the never-ending debate on whether leaves should be made formal or not. However, one thing which cannot and should not be debated is accessibility to better sanitation facilities, and comfortable environment for menstruators.

Indonesia

Under the Labor Act of 1948, women have a right to two days of menstrual leave per month

Japan

Under Article 68 of the Labor Standards Law, employer cannot deny leave to a women who finds it difficult to work during menstruation

Zambia

Women are legally entitles to a day off each month due to their menstrual leave policy, known as 'Mother's Day'

Taiwan

The Act of Gender Equality in Employment gives women three days of "menstrual leave" per year, which will not be calculated towards the 30 days of "common sick leave".

South Korea

Female employees entitled to menstrual leave according to the Article 71 of the Labor Standards Law, and are also ensured additional pay it they do not take the menstrual leave that they are entitled to.

Among our respondents, on an average 41% believed that there should be a provision for menstruation leave as it tends to affect productivity due to the immense discomfort a menstruator goes through, while 43%, also believed in menstrual leave but with an option for work from home. A total of 8.5% of the respondents felt that women should opt for sick leaves if cramps during periods are unbearable hindering their work capacity and efficiency, and 24.4% felt that it could lead to bias in hiring of women. Only 21.1% said that instead of menstrual leave, MHM facilities at workplaces should be improved.

Several respondents felt that menstruation is not a sickness, and doesn't require special leaves. They stated that if menstruation is not seen as a taboo

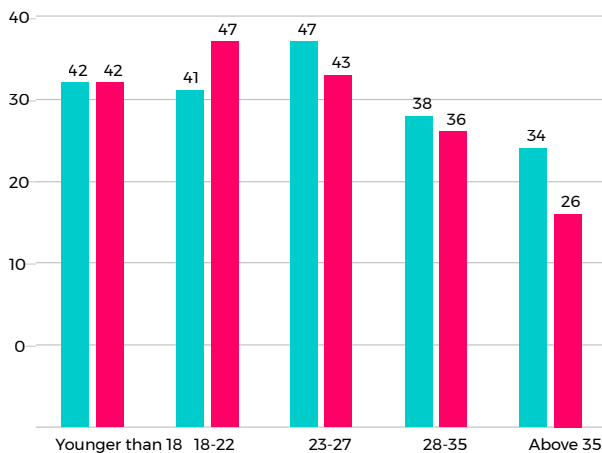
and clean menstrual friendly environment is provided it won't hamper the work at all. While, some other respondents advocated for provision of sick rooms in offices itself for resting purposes during difficult times.

In Chart 12B, we can observe that the trend for respondents who said "Yes" for a provision of menstrual leave declines with respect to age, i.e. an older person is less likely to lobby for menstrual leave in contrast to a younger person. Similarly, older people said "No" for menstrual leave much more than younger people, especially in the case of "taking sick leaves" and "Hiring Bias." However, this was not the case in the argument for provision of healthy sanitary conditions. Around 30 per cent of people above 35 years of age considered that adequate MHM facility in workplaces should suffice to avoid productivity loss, in contrast with only 21% of younger respondents.

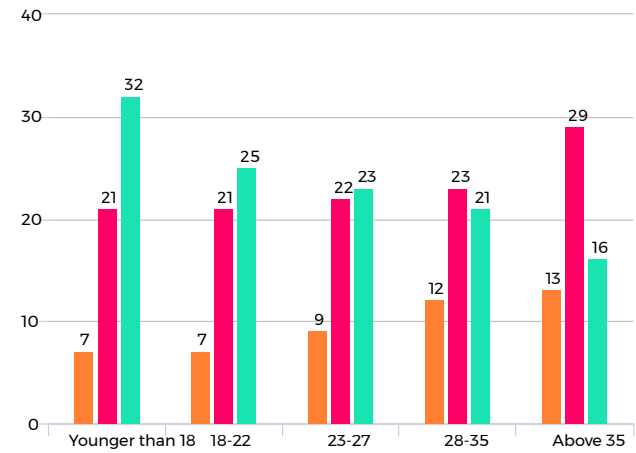
The logistic regression analysis conducted with "yes_affects work" as the dependent variable also reinforces the previous argument that younger people are more likely to lobby for menstrual leave as compared to older people. The probability of an older person wanting menstrual leave is as low as 49% (Annexure I, Model 4.a).

Chart 9A Response on Menstrual Leave (Within Age-Group)

Respondents who said "Yes" for menstrual leave



Respondents who said "No" for menstrual leave



■ Yes, as it affects productivity
■ Yes, but option to work from home

■ No, will create bias in hiring
■ No, should take sick leave
■ No, but provide adequate MHM facility at workplace

In Table 4, the responses on menstrual leave are categorized “Within Work-Status Groups,” with the highest-ranking groups being shaded darkest shade of blue, followed by lighter shades in subsequently ranked groups. Around 44 per cent of full-time employees stated that menstrual leave should exist as menstruation affects their productivity and 42.3% wanted an option to work from home. Only 20.6% thought adequate MHM facility at workplace would be sufficient to deal with menstruation related issues, and 9.1% opted for usage of sick leaves for menstruation, while 24.5%t thought it could create bias in hiring women. In all, it can be presumed that majority of people employed full-time prefer Menstrual Leave Policy to No Menstrual Leave Policy, it may be in form of leaves or provisions to work from home. Similar is the case among all other work status groups, majority of respondents have opted for “yes” for menstrual leave policy. Similar results are found in logistic regression analysis where the probability of full-time employees wanting menstrual leave is as high as 59% (Annexure I, model 4.a).

Table 4 **Response on Menstrual Leave (Within Work-Status Groups)**

	Productivity	option of work from home	take sick leaves	adequate MHM facility at work	hiring bias
Employed	43.9	42.3	9.1	20.6	24.5
Unemployed	40.9	35.1	14.1	23.6	17.5
Students	40.7	46	6.6	22.4	26.6
Home based work (unpaid)	35.3	34.8	9.6	21	19.8
Others	37.1	40.89	11	24	21.91

B) Menstruation in School Curriculum

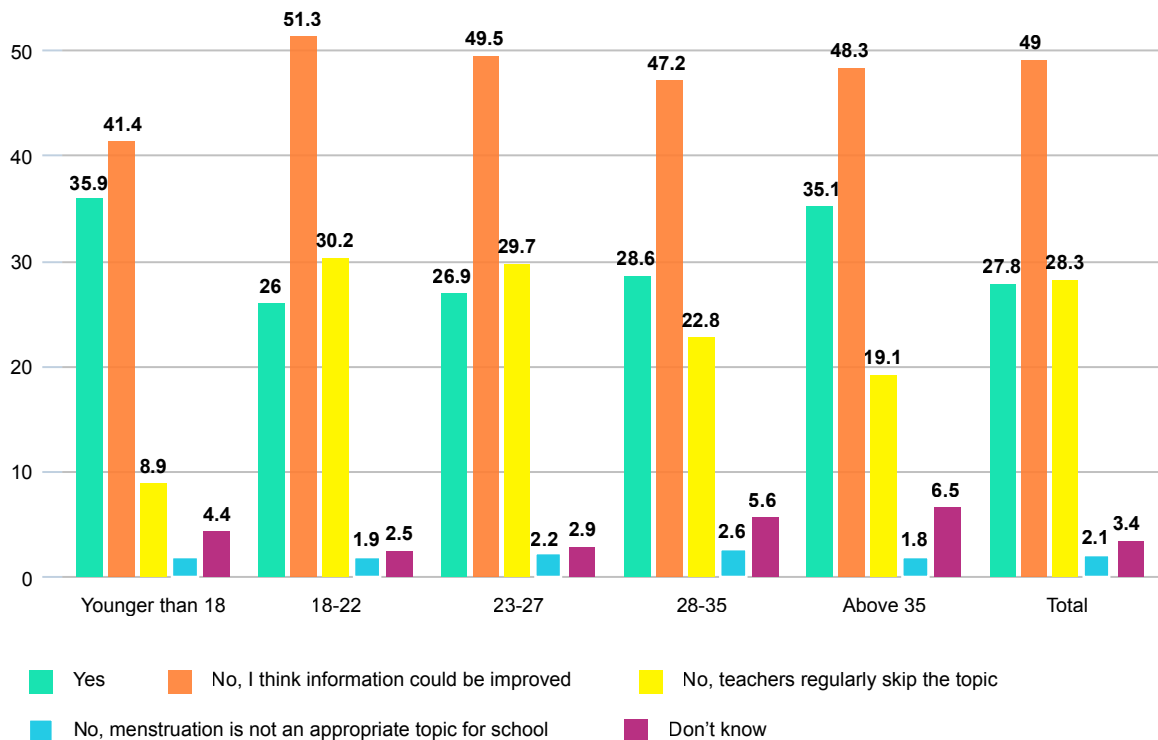
The respondents were asked their opinion on whether menstruation was adequately discussed in School, for which 27.4% said “Yes”, but 49% thought that information imparted to students could be improved. As high as 28.3% stated that teachers skip this particular topic in school.

In Chart 11C, a pattern seems to exist representing improvement in the curriculum of menstrual hygiene. This can be observed when we look at the

responses of population younger than 18, since higher percentage of people under it believe that menstruation is adequately discussed in school, and in contrast, relatively lower percentage within the age-group in comparison to other age -group thinks that information could be improved. The similar case is observed where only 8.9% of the age-group said that people regularly skip menstruation as a topic, in contrast to 22.8% and 19.1% of those who belong to 28-35 and above 35 age group.

The changes, if any, into the curriculum/teaching style of Menstruation and Menstruation related hygiene would be fairly recent, as the answers of age group from 18-22 to Above 35 more or less seem to be similar. The state of education however depends a lot on the school one attends, and also the society one belongs to. If the subject is taboo even for a teacher, it is more likely to be skipped. On the other hand, some schools do have special workshops conducted to make students understand menstruation in depth, and also explain about the usage of various MHM products. Some of our respondents also mentioned gender sensitization classes for men, for making the future generation equitable and sensitive to the needs of women.

Chart 11C Menstruation as part of School Curriculum

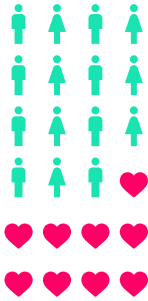


C) Trans and Non- Binary Menstruating Community

Menstruation is considered to be a women's issue, and seldom does the discussion under it accommodate the trans and Non-Binary menstruating community. There needs to be a special push for more awareness and attention for gender-neutral menstruators.

Menstruation can be a source of heightened anxiety for transgender and non-binary people, who do not identify as female but must shop for products from the 'women's health' aisles and in most cases, the products may have pretty feminine packaging. The categorization of MHM products as women's product tends to alienate the community, and thereby, at some cases even acting as a deterrent to purchase them. Apart from the issue of access to supplies, the community also finds it daunting to access public restrooms, given that the sound of opening a tampon or a pad, or simply carrying a product can lead to unnecessary attention. In fact, in most cases men's restrooms don't even have places to throw away menstrual products within a toilet stall. They may also miss out on menstrual hygiene products which are sometimes available free of cost in women's restroom.

Among our respondents, 47% thought it to be only women's issue and 31% didn't know that trans and non-binary community menstruate. While 10% thought the community's, needs are being addressed in contrast to 11% who thought it was not. In our sample, we have 5 people who identify as Transgender and 28 people who identify as Non-Binary. Among the trans people, 2 of them said that menstruation is only discussed as women's issue, and 2 said that their needs are not being addressed, while one among them said that their menstrual need is addressed. In the case of non-binary people, 5 individuals didn't know if the needs are being addressed, and 13 felt that its only discussed as a women's issue. While 5 of them thought that the needs are being adequately addressed and rest 5 thought that it is not being adequately addressed.



Did you know?

47%

of the sample thought menstruation to be only women's issue



31%

Didn't know that Trans and Non-binary community menstruate



of the sample agreed that the menstrual need of Trans and Non-binary community is not being addressed



of the sample agreed that the menstrual need of Trans and Non-binary community are being addressed

7. CONCLUSION

The issues regarding menstrual hygiene management needs to begin with a menstruators journey from adolescence to adulthood, as the initial learning impact can influence behaviours and actions across life time. There has been a lot of progress in the arena of MHM, yet, there is a lot to be done to ensure a healthy and dignified menstruation cycle.

The following points could be summarized as key conclusions that have emerged during the course of the evaluation:

- a). **Initiation of dialogue on MHM:** Dialogue around MHM is still either neglected completely or only fostered around mothers and daughters, reflecting the immense need of engaging men into the conversations. The engagement of male counterparts would not only lead to ease of accessibility to menstrual products but also sensitized home, work and school environments, thereby, fostering a more considerate society. Further, it is essential to provide factual information on menstruation to young adolescents before the onset of first period, so as to instill better management skills and alleviate negative emotions.
- b). **Improve knowledge transmission:** Most of the awareness efforts towards menstruation hygiene management is mostly targeted towards adolescent girls, though not enough, ignoring young boys and their puberty oriented needs. They tend to self-learn through unverified sources on Internet and Social Media. Hence, the dissemination of information regarding menstruation along with SRHR should be imparted to all adolescents, irrespective of their gender.
- c). **Push for Sustainability:** The dependency on sanitary napkins by the menstruating population has tremendous environmental costs. The recognition of the

fact nudges people towards eco-friendly safe alternatives, given its availability. Hence, awareness should be created for the same and public policy should promote production, sale and distribution of eco-friendly products. The knowledge of diversity of products promotes choice and allows Menstruators to choose the products they feel most comfortable with. Further, menstruators should also be aware of the consequences of disposing used menstrual products in open or flushing them in toilets or burning them.

- d). **Addressing Social Restrictions and Taboos:** Bending norms and restrictions around menstruation is in the nascent stage. While family members and the community in general display greater willingness in easing restrictions pertaining to diet, mobility and disposal of menstrual absorbents, religious restrictions are meticulously followed to a great extent. At extreme cases, even isolation. The religious restrictions can be attempted to bend by engaging religious leaders as MHM champions.
- e). **Menstrual Work Policy:** Menstruation leads to distress and discomfort of varying magnitude, which may or may not lead to productivity loss. As a result, there needs to be certain provisions to recognize those who go through painful monthly cycles, and grant them ease on those days. Further, there should be facilitation of adequate menstrual hygiene facilities at work places.
- f). **Inclusive MHM dialogue:** Transgender men and non-binary community menstrual needs should be included in the mainstream. There should be dustbins in men restrooms inside the stall, the packaging of MHM products should be more inclusive, among other things.

8. ANNEXURE

I. Questionnaire

1) How old are you?

- a) Less than 18 years
- b) 18 to 22 years
- c) 23 to 27 years
- d) 28 to 35 years
- e) Above 35 years

2) What gender do you identify with the most?

- a) Male
- b) Female
- c) Trans
- d) Non-Binary
- e) Prefer not to specify

3) Which city are you currently living in?
(City, State)

4) What is your average yearly household income?

- a) Below 1 lac
- b) 1 to 3 lac
- c) 3 to 5 lac
- d) 5 to 10 lac
- e) Above 10 lac

5) What is your highest/ current level of education?

- a) X Board
- b) XII Board
- c) Graduate
- d) Post Graduate
- e) Doctorate
- f) Other

6) Currently you are:

- a) Studying
- b) Interning
- c) Employed full-time
- d) Employed part-time
- e) Managing multiple part-time jobs
- f) Home based work (paid)
- g) Home based work (unpaid)
- h) Freelancing
- i) Unemployed

Awareness and Perception:

7) Did you know about menstruation before your menarche (first period)?

(Question for those who opted for female, non-binary or trans as their response)

- a) No
- b) Yes, I knew some things
- c) Yes, I was very well informed
- d) Doesn't apply

8) According to you, what did you think was the main cause for menstruation when you first heard about it?

- a) Biological process
- b) Curse of god
- c) Disease
- d) Abnormality
- e) Didn't know
- f) I was confused
- g) Others, please specify

9) From whom did you first come to know about menstruation?

- a) Mother
- b) Father
- c) Siblings
- d) Friends
- e) School
- f) Internet
- g) Social media platforms (like Facebook, Twitter, Snapchat, Instagram)
- h) Books and magazines
- i) Television ads and movies
- j) Newspapers
- k) Radio
- l) Others, please specify

10) Did you experience any of the following unwelcome emotions during your first period? (Question for those who menstruate)

- a) Anxiety
- b) Guilt
- c) Fear
- d) Shock
- e) Shame
- f) No such emotion
- g) Others, please specify

11) Does your family openly discuss menstruation?

- a) Yes, very comfortably irrespective of them being male or female members of the family
- b) Yes, but only with my mother/sister or any female member of the family
- c) No, we don't talk about it

12) As a parent/ guardian, will you be comfortable (now or later) discussing about menstruation with your child?

- a) Yes, only with my daughter
- b) Yes, irrespective of my child's gender
- c) No
- d) Don't know

13) Will/ are you be comfortable (now or later) discussing about menstruation with your partner?

- a) Yes
- b) No
- c) Don't know

(Questions only for menstruators starts from here)

14) What is now your go-to source of information on menstruation and any related issue?

- a) Mother
- b) Father
- c) Siblings
- d) Friends
- e) Websites that have SRHR information
- f) Social media platforms (like Facebook, Twitter, Snapchat, Instagram)
- g) Books and magazines
- h) Healthcare professionals
- i) Others, please specify

15) What kind of menstrual hygiene management products do you use?

(Question for those who menstruate) (You may select more than one response)

- a) Disposable Sanitary Pads
- b) Reusable cotton Pads
- c) Old piece of cloth
- d) Tampons,
- e) Menstrual Cups
- f) Natural Material (Hay, leaves, cow dung)
- g) Period panties
- h) Others, please specify

16) Which of the following menstrual hygiene products do you think is the safest according to you? (Please choose one)

- a) Disposable Sanitary Pads
- b) Cotton Pads
- c) Cloth pads made of old pieces of cloth
- d) Tampons
- e) Menstrual Cups,
- f) Period Panties
- g) Natural Material (Hay, leaves, cow dung)
- h) Toilet Paper
- i) Don't know

17) Which of the following menstrual hygiene products do you think is the most unsafe according to you?

- a) Disposable Sanitary Pads
- b) Cotton Pads
- c) Cloth pads made of old pieces of cloth
- d) Tampons
- e) Menstrual Cups, Cups
- f) Period Panties
- g) Natural Material (Hay, leaves, cow dung)
- h) Toilet Paper
- i) Don't know

19) How do you dispose of your sanitary pads? (For those who selected sanitary napkins in Q13)

- a) Burying
- b) Sealing and disposing in public/private dustbins
- c) Disposing in dustbins without sealing
- d) Burning
- e) Flushing
- f) Others, please specify

20) According to you, what can hinder your work/education productivity during menstruation? (Mark as many as applicable)

- a) Period Cramps
- b) Lack of safety from blood leakage
- c) Customs and Traditions
- d) Tiredness and Fatigue
- e) Itching
- f) wetness
- g) Difficulty to travel
- h) Lack of clean and safe washrooms
- i) Lack of water for hygiene
- j) No place to dispose of my used menstrual hygiene product
- k) Others, please specify
- l) It doesn't hinder my work/education productivity
- m) Doesn't apply

21) Is it easy for you to change your menstrual hygiene product when you are at home or at work

- a) Yes, I have access to a hygienic wash-room at home and all other places
- b) I don't have access to safe and clean sanitation facilities outside of home, but I use the public washrooms during menstruation
- c) I don't have access to safe and clean sanitation facilities outside of home, so I avoid using public washrooms anywhere I go
- d) I don't have access to safe and clean sanitation facilities both at home and outside

22) How often do you miss studies/work per month because of menstruation?

- a) 1 day
- b) 1-2 days
- c) 3-5 days
- d) 5 days and more
- e) I don't miss studies/work/school because of menstruation

23) Which of the following menstruation-related health and hygiene issues have you experienced?

- a) Irregular periods
- b) Abnormally excessive periods
- c) long periods
- d) Anaemia
- e) Short or scanty periods
- f) Vaginal infections
- g) Reproductive tract infections
- h) Rashes and itching
- i) Pelvic Pain
- j) Never experienced any problem
- k) Others, please specify

If you have experienced any, did you change the method of your menstrual hygiene management?

- a) Yes
- b) No

Did you consult a doctor for any of these problems?

- a) Yes
- b) No
- c) If no, why?

You did not consult a doctor because:

- a) I did not think it was that serious an issue
- b) I could not find a reliable health practitioner
- c) I was told that this is how menstruation works, and this is nothing unusual
- d) I felt shy and uncomfortable
- e) I did not know who to go to

(Questions only for menstruators ends here)

24) Which of the following have you heard should be avoided during menstruation?

(Mark as many applicable)

- a) Cooking
- b) Eating certain foods
- c) Praying
- d) Sleeping on Bed/Sitting on Sofa
- e) Talking to the opposite sex
- f) Exercise
- g) Sexual Activities
- h) Touching toddlers
- i) Bathing
- j) Touching drinking water
- k) Others, please specify
- l) Nothing should be avoided

25) Have you ever been isolated during your periods (kept in a different room/not participate in gatherings etc.)?

- a) Yes, always
- b) Yes, only when family/elders are around
- c) Yes, at my friend's place
- d) Never
- e) Doesn't apply

26) Have you seen instances of menstruating people being isolated (kept in a different room/not participate in gatherings etc.)? - Question for those who don't menstruate

- a) Yes, always
- b) Yes, only when family/elders are around
- c) Yes, at my friend's place
- d) Never

27) Have you ever wanted to buy menstrual hygiene products from a shop but have been unable to?

- a) Yes, there were no sanitary materials (pads, etc) in the shop
- b) Yes, but I was shy/ uncomfortable ashamed to purchase

- c) Yes, but I couldn't afford it
- d) As someone who does not menstruate, I felt uncomfortable
- e) No, I always buy it

28) Do you think disposable menstrual hygiene management products are harmful to the environment?

- a) Yes
- b) No

29) Will you be willing to switch to alternate eco-friendly products?

- a) Yes
- b) No

30) Do you think the needs of menstruating trans and non-binary community are being addressed with regards to menstruation?

- a) Yes
- b) No
- c) Can't say
- d) Have only seen menstruation being discussed as a 'women's issue'

31) Do you think a separate Bill on Menstrual Leave should be introduced within the formal work space?

- a) Yes, as women experience immense discomfort while menstruating and thus lack productivity during work
- b) Yes, but there should be an option of working from home
- c) No, women should take sick leave during tough period days
- d) No, provided women can access adequate menstrual products and services (including water) in the workplace
- e) No, it will create bias in hiring of women

f) Others, please specify

35) Do you think menstruation is adequately discussed within school curriculum?

- a) Yes
- b) No, I think information could be improved
- c) No, teachers regularly skip this topic
- d) No, but menstruation is not an appropriate topic for school
- e) Don't know
- f) Other, please specify

II. Test of Significance

Table 1: Chi-Square Tests between Age and Source of Information- Mother

Age		Value	df	Asymptotic Significance (2-sided)
18 - 22	Pearson Chi-Square	416.90	4	0.00
	Likelihood Ratio	459.06	4	0.00
	N of Valid Cases	4325.00		
23 - 27	Pearson Chi-Square	360.65	4	0.00
	Likelihood Ratio	399.07	4	0.00
	N of Valid Cases	3880.00		
28 - 35	Pearson Chi-Square	158.40	4	0.00
	Likelihood Ratio	177.26	4	0.00
	N of Valid Cases	1519.00		
Above 35	Pearson Chi-Square	39.24	4	0.00
	Likelihood Ratio	43.34	4	0.00
	N of Valid Cases	382.00		
Younger than 18	Pearson Chi-Square	88.50	3	0.00
	Likelihood Ratio	95.73	3	0.00
	N of Valid Cases	1055.00		
Total	Pearson Chi-Square	1058.61	4	0.00
	Likelihood Ratio	1167.29	4	0.00
	N of Valid Cases	11161.00		

Table 2: Chi-Square Tests between Age and Source of Information- Internet

age		Value	df	Asymptotic Significance (2-sided)
18 - 22	Pearson Chi-Square	213.54	4	0.00
	Likelihood Ratio	171.01	4	0.00
	N of Valid Cases	4325		
23 - 27	Pearson Chi-Square	240.32	4	0.00
	Likelihood Ratio	191.54	4	0.00
	N of Valid Cases	3880		
28 - 35	Pearson Chi-Square	62.25	4	0.00
	Likelihood Ratio	44.94	4	0.00
	N of Valid Cases	1519		
Above 35	Pearson Chi-Square	15.13	4	0.00
	Likelihood Ratio	11.42	4	0.02
	N of Valid Cases	382		
Younger than 18	Pearson Chi-Square	48.56	3	0.00
	Likelihood Ratio	39.73	3	0.00
	N of Valid Cases	1055		
Total	Pearson Chi-Square	541.32	4	0.00
	Likelihood Ratio	434.27	4	0.00
	N of Valid Cases	11161		

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III. Model Specifications:

Models for logistic regression were selected with an aim to understand the likelihood of any particular event happening given the different demographic variables.

The model variables are given as follows:

Model 1: Family discussion on Menstruation			
	a	b	c
IV	Discuss_All	Discuss_female	Discuss_none
Intercept	-2.42***	-0.57***	0.86***
Old	-0.38***	0.004	0.41***
Female	0.39***	1.05***	-1.80***
Income	0.13***	-0.025	-0.12***
Education	0.031*	0.003	-0.03*
Employed	0.43***	0.048	-0.51***
Metropolitan	0.26***	-0.078	-0.24***
WaldTest	0.00	0.00	0.00

Model 2: Perception on Environmental Impact of Sanitary Pads		
	a	b
IV	Sanitary Pads harmful to Environment	Ready to switch to eco-friendly products
Intercept	-1.29***	1.53***
Old	0.05	0.28*
Female	1.39***	-
Income	0.12***	0.002
Education	0.071***	0.08***
Employed	0.05	0.22*
Metropolitan	0.09*	0.094
WaldTest	0.00	0.00

Model 3: Perception on Menstrual Related Issues						
	a		b		c	
IV	Nothing should be avoided		Does not hinder work productivity		No health issues	
Intercept	-1.05***	-1.26***	-2.31***	-2.17***	-1.58***	-1.6***
Old	-0.29***	-0.23***	0.37***	0.33***	0.13	0.15
Female	-0.11*	-0.101*	-	-	-	-
Income	0.08***	0.07***	0.014	0.02	0.001	0.002
Education	0.004	0.010	0.030	0.026	-0.059**	0.054*
EmployedFT	0.034	-	-0.034	-	0.07	-
Employed	-	0.24***	-	-0.14	-	0.021
Metropolitan	0.092*	0.083	-0.107	-0.101	-0.146*	-0.139*
WaldTest	0.00	0.00	0.00	0.00	0.00	0.00

Model 4: Policy Opinion on Menstrual Leave

	a		b		c		d		e	
IV	Yes_affects work		Yes_workhome		No_sickleaves		No_accessmhm		No_hirebias	
Intercept	-0.44***	-0.60***	-0.89***	-0.96***	-1.57***	-1.4***	-1.11***	-1.03***	-1.09***	-1.30***
Old	-0.26***	-0.18**	-0.41***	-0.41***	0.49***	0.46***	0.20***	0.15*	-0.23***	-0.19**
Female	0.389***	0.37***	-0.07	-0.05	-0.16*	-0.2**	-0.33***	-0.32***	-0.24***	-0.23***
Income	-0.05***	-0.04***	0.16***	0.15***	-0.23***	-0.2***	0.04*	0.04*	0.11***	0.09***
Education	-0.01	0.007	0.020	0.015	-0.024	-0.017	0.011	-0.001	-0.04**	-0.03**
EmployedFT	0.277***	-	-0.11*	-	0.152	-	-0.18**	-	0.023	-
Employed	-	0.1009	-	0.112	-	-0.29***	-	-0.04	-	0.236***
Metropolitan	-0.07	-0.05	0.39***	0.38***	-0.26***	-0.22***	-0.21***	-0.22***	0.21***	0.206***
WaldTest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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