

Menarche: Challenges and Coping Mechanisms with Menstrual Hygiene materials available

Author: Bhagyashree Kulkarni

Co-Author: Adrita Saha

Institute of Forensic Science, Mumbai - 32

Abstract: The current pilot research aimed to measure the experience of challenges and coping mechanisms with menstrual hygiene available and to assess the knowledge, belief pattern and challenges faced by women while coping with menstrual products (sanitary napkins, tampons, menstrual cups), to identify the menstrual pattern and menstrual products used to cope up with the menstrual flow, to uncover various myths and restrictions practiced and to check the menstrual hygiene status. Using a self-developed inventory, data was collected from a total of 140 participants (70 non-working/pursuing study, 70 working/entrepreneur) ranging within the age group of 18 – 40. The Pearson product-moment correlation coefficient was used for sampling and relative statistics. A value of 0.13 was obtained, which showed a relatively low positive correlation between the non-working/pursuing study women and working/entrepreneur women in the coping mechanisms with menstrual hygiene materials available and the challenges faced by them, which depicted a p-value of 0.342.

Keywords: Menstruation, Menarche, Puberty, Early adolescence, WASH, Absorbents, Sanitary napkin, Tampon, Menstrual cup, Incinerators.

Introduction:

Menstruation, also known as menses is the bodily process that occurs naturally, it involves releasing of blood and associated matter from uterus through the vagina. Menstruation can be defined, “as cyclical discharge of blood, tissue materials, other secretions or shedding of uterine lining through vagina, in primate females.” The word “menstruation” is derived from the Latin word “mensis” which represents the Greek word “mene” the moon, related to the lunar month and lasting for approximately 28 days. It is a natural phenomenon occurring in every female starting from menarche to menopause. Menarche is defined, “as the onset of the menstrual cycle or the occurrence of first menstruation that predominantly occurs between the ages of 10-16.” Generally, menarche is preceded by puberty-induced physical changes occurring in-between the age of 9- 16. Puberty is defined as, the “acquisition of sexual maturity, of girls and boys which occurs through a series of physical changes.” Puberty is a broad set of changes, of which menstruation is one, often considered the first step to adulthood in girls. Puberty presented and experienced by girls and boys is very distinct, it is “shameful for girls while in contrast celebrating male virility in some customs”.

In countries like India, girls and women are unable to manage their menstruation and associate hygiene with ease and dignity. They face discriminatory attitudes and beliefs around menstruation that steer them to experience their menses with shame, guilt and embarrassment. Teenage girls are even teased or are put under a range of restrictions that lead to psychological challenges like stress, anxiety, displaced aggression, sexual vulnerability and extreme emotions to mood fluctuation and at times this causes impulsive reactions to stressful situations. Menstruation is still considered a taboo or something impure, and shameful, and women are not allowed to take part in social or religious events. Familiar myths related to menstruation in India includes menstrual blood being called dirty, women being asked to stay away from deity worship, shouldn't visit any religious place, must restrict themselves and are not allowed to go out of their home, not allowed to wash their hair during their periods and it's also considered that menstruating women are impure. These myths and stigmas cause girls to miss out on normal childhood, they can't celebrate their menarche.

Factors like discriminatory environments, inaccurate information or lack of proper knowledge about it, poor facilities, and limited choice of menstrual aids like sanitary napkins, tampons, and menstrual cups largely affect school and college pursuing girls. They are unable to practice menstrual health and hygiene at school, college, or other public settings properly. Another concern that women face while managing menstrual hygiene is the lack of public infrastructure and policies in health, WASH (water, sanitation and hygiene, including safe drinking water, proper sanitation and hygiene facilities to be provided). The current Indian toilet design is a version that is the same as it used to be during British rule. It supports the patriarchy, and the design is not suitable for women. The sanitation and needs of women are rarely accounted for when it comes to the design of toilets. There is an urgent need for looking into a new toilet system keeping in mind menstrual hygiene, sanitary needs, dignity related to WASH and personal safety, which shall be female-friendly. The Indian toilet system lacks proper disposal facilities for menstrual aids. For proper disposal, there should be separate waste collection systems of menstrual wastes, a specific sanitary dispenser, and dustbins with proper lids should be placed in washrooms, and they should be regularly emptied to avoid odour, protect from other bacterial, fungal growth, flies. Menstrual wastes shouldn't be flushed through toilets or disposed of along with domestic wastes because this can lead to choking of the drainage system. Incinerators are a better option for disposing of menstrual waste, it is an eco-friendlier process.

Among adolescent girls, fear and shame of menstruation are frequent themes. Traditional ways of some communities, including India, have a popular practice where women make use of cloth as one of their menstrual aids in some of the households even today.

They have to wash and dry the clothes regularly, but at times they have to reuse the same piece of cloth for a second, third or even fourth time, which is very unhygienic and still likely to lead to serious infections in the urinary or reproductive tracts. Due to the shaming of periods, it was even found that girls even hid used cloth in damp and dusty places, and the cloth wasn't properly dried before use. There is still such unhygienic practice in remote villages or other parts of India due to economic constraints. Lack of menstrual knowledge, inadequate access to sanitary products and a non-facilitating environment in public places makes it difficult for women, they are afraid of getting forbidden by society. There are various restrictions put upon women as a gender, they are not allowed to share information or details about their menstrual cycle with other members of the family. Girls are generally asked to hide the menstrual aid that they are using. While purchasing generally sanitary napkins are either wrapped in paper or put into a black polythene bag, but that's nothing to be ashamed of. Where men have the access to purchase condoms so easily, there is still an aspect of shame persistence in purchasing sanitary napkins, tampons, etc. There are various campaigns where condoms are distributed for free, but women have to pay for their menstrual aids that too with taxes. Even while disposing of menstrual aids, girls are asked to dispose of them without anyone else knowing about the same. The societal stigma about menstruation has developed hesitance among women. Furthermore, there is a limited choice for menstrual aids, with women having different needs and preferences for menstrual aid material, and these, in addition, may change depending on whether they are at school, home, work, or in other public settings. Women with distinct types of physical disabilities may face challenges while coping with menstrual flow, thus they need specific types of menstrual aids depending on the physical environment. Physical disability is a term including a wide range of impairments, which limits an individual's movement, physical functionality, and dexterity, limiting the individual's active participation in anything. Some examples of disabilities that reduce physical functioning are, cerebral palsy, limb amputation, multiple sclerosis, and other spinal cord injuries. Inserting tampons, menstrual cup or using sanitary napkins are quite difficult for women with disabilities where hand movement is limited. Women with visual impairment find it extremely challenging to properly usage of menstrual aids, without any external help. Intellectual disabilities, like down syndrome, foetal alcohol syndrome, autism, traumatic brain injuries, etc, involve a problem with general mental abilities like intellectual functioning (problem-solving, reasoning, learning) and adaptive functioning (independent functioning). For women having intellectual disabilities, understanding the bodily changes, and coping with the menstrual flow is onerous. Support should be provided with proper education about menstruation and menstrual hygiene. Depending on cognitive abilities using tampons, a menstrual cup may not be good menstrual aid, rather disposable or period-proof underwear, or sanitary napkins can be the better option.

Generally, girls at their menarche find it hard to cope up given the lack of conversation about periods- according to one study, 71% of adolescent girls in India are unaware of menstruation until they get it themselves. Parents rarely prepare their daughters for something that is a natural phenomenon, this unpreparedness leads to much avoidable fear and anxiety.

Early adolescence represents a critical progression period when gender norms may act in multiple ways to impact adolescents' lives, which may add more discomfort to teenage girls. Girls have to adapt to the bodily changes along with gender norms, where they are expected to behave and express themselves in a particular way, they are expected to be more feminine, polite, accommodating, nurturing, etc. Changes in the physical body include the growth of hair in the pubic region, armpits, and the growth of breasts along menstrual cycles. These bring about various psychological changes in teens. They tend to shy away, and due to the shaming, girls put too much strain on the ongoing changes throughout their bodies that they forget to live and develop restrictive ideologies. There are various challenges faced by teenage girls depending upon their age when they hit the age of puberty. Early puberty is when a child hits puberty before the average age for puberty, while late puberty is when children hit puberty at a later age. Depending on whether being early or late matures children's self-esteem or body image can be affected. Early puberty can be due to obesity, hormonal imbalance, or genetic factors. Generally, early puberty is more common among girls than those boys. Girls who are early mature feel more self-conscious, are teased by peers, find it difficult to cope with bodily changes, have lower self-esteem and the rate of depression, stress and other eating disorders is more. Compared to early matures, late matures were significantly less likely to report being scared, sad, and worried about menarche, and significantly more likely to report being joyful or happy. It is probably because they had healthy communication regarding menstruation or sex education at the school level or with friends and family. For girls with precocious puberty, periods are associated with negative emotions related to issues of menstrual management, particularly around schooling. In some contexts, these emotions are linked to socio-cultural norms around menstrual blood. It also affects the psycho-social well-being of the teenager. They are also unaware of the menstrual aids available; thus, are generally not sure which menstrual products to choose, rather are susceptible to suggestions made by their parents, relatives or peers. Often that doesn't meet the requirement of the menstrual flow, hence coping up with the menstrual aids becomes quite difficult among girls. Also, due to the lack of proper WASH facilities, women face various fungal and bacterial infections in the reproductive tract or urinary tract, but they have very little or no knowledge about these infections caused due to ignorance of personal hygiene during menstruation time. Hygiene is one of the important factors when it comes to menstruation. To manage menstruation hygienically and with dignity, it is essential for women to have access to clean water, sanitization, decent toilets at home, or in public settings, proper menstrual aid and good hygiene; but it's still a neglected issue. Due to improper WASH facilities in public settings, workplaces or schools, it is difficult to change sanitary napkins, and tampons or wash menstrual cups and clothes. There are other problems associated with the disposal of sanitary napkins and tampons, thus it's more likely that women don't change their menstrual aids as frequently as advised to. Many women don't like the odour associated with menstrual blood and hate the sight of it, hence this can be another reason for not having proper hygiene. Others might have financial constraints which force them to keep on using the same cloth for a period or keep tampons and sanitary napkins for a longer time. Not changing sanitary napkins or tampons frequently can contribute to moisture retention, and this accelerates the growth of harmful bacteria like Salmonella, Staphylococcus and E. coli. They can cause not only infections but also further sepsis and other complications. Candidiasis is a fungal infection that can occur along with urinary tract infections which can be life-threatening. Innumerable women can't afford menstrual hygiene

products as they are generally overpriced, with taxes imposed. Thus, women are driven to use newspapers, clothes, husks or dried leaves as a result they suffer from reproductive tract infections. Furthermore, unhygienic menstrual habits can increase the risks of cervical cancer. Thus, proper hygiene is needed to be maintained by every woman during periods.

Menstrual hygiene has been neglected as a part of gender inequality. Unequal power relations between men and women result in women's voices not being heard in decision-making within households, communities, and development programmes. This also led to cultural taboos, stigma, and shame around menstruation, including various belief systems. One such example is considering menstrual blood and menstruating women impure. Male family members should be more equally familiarized with menstruation, menstrual aids, and menstrual hygiene, such that they may support women to manage and cope with menstrual cycles effectively. Men influence women's experience of menstrual hygiene management through various roles including fathers, husbands, brothers, peers, community leaders, teachers, humanitarian practitioners and policymakers. The provision of female-friendly WASH facilities, appropriate information, and supportive menstrual supplies help women cope with menarche and subsequent menstrual cycles effectively.

The menstrual aids were not tax-free. Sanitary napkins were taxed at 12 per cent under India's Goods and Services Tax (GST) which was launched in July 2017. The decision triggered protests, petitions and court cases that questioned why the government taxed napkins as a luxury rather than an essential item, such as condoms, that are tax-free. An Indian woman spends about Rs. 300 per month in buying pads or tampons. Assuming that the menstrual age lasts for 30 years, this number crosses a lakh of rupees. Where four out of five women are estimated by campaigners to have no access to sanitary pads, as they are unable to finance sanitary napkins. Indian women face many challenges when they have their periods, especially in rural areas where a lack of awareness and the cost of pads mean many instead use unsanitary cloth or rags, increasing the risk of infections and disease. Later India scrapped the controversial tax on sanitary pads, in 2018.

The use of various absorbents as menstrual aids dates back to 3000 BC. Historians state that ancient Egyptian women used softened papyrus, and ancient Greek women used to make tampons from sea sponges or by wrapping bits of wood with lint. It was noticed that the use of a rag as a menstrual blood absorbent was very common among women from the 5th century to the 15th century. During the medieval period, there is a lot of religious shaming about menstruation and menstrual blood. Blood was thought to contain the body's toxins and excesses; hence it was considered dirty. The term "on the rag" a slang for menstruation actually originated from the use of rags as menstrual blood absorbents. The term "period" came into existence in 1822 as a replacement for menstruation but it was first spoken out loud in the commercial advertisement of Tampax in 1985. During the 1850s, the sanitary apron was made of rubber. They helped in preventing staining, but the odour and smell made it uncomfortable for use. Later women used cotton and flannel as absorbents, they pinned them into the bloomers.

The first disposable pad was made of wood pulp bandages, these were very absorbent and cheap enough to throw away later. They were used on the battlefield, helping to stop wounded soldiers from bleeding. They were commercialized around 1888. In 1897 Johnson & Johnson pioneered mass-produced sanitary napkins, which provided a much-needed alternative to the homemade methods that women had relied on. These pads were likely the first commercially produced, disposable sanitary products sold in the United States. The earliest versions were called "Sanitary Napkins for Ladies" or "Lister's Towels". But menstruation was stigmatized and related to shaming; hence, women didn't want to purchase the same, and the product ended up failing. French nurses during World War 1 invented modern sanitary napkins, they use extra cellulose, a blend of acrylic cotton used for bandages, to soak up their menstrual blood. Using cellulose, "Kotex" developed sanitary napkins made of cellulose and around the same time, Johnson & Johnson rebrand Lister's Towels as "Nupak". The sanitary napkin became more popular among women than earlier available tampons because tampons were applicator-free and quite leaky.

The first commercial menstrual cup was patented in 1937 by Leona Chalmers. Later Tassette inc. patented and started the production of disposable menstrual cups during the 1960s but it wasn't commercially successful because women didn't feel comfortable with the idea of emptying or cleaning the cup also it needed to be inserted inside the vagina. The modern tampon was invented by Earl Haas, the tampon had cotton, an applicator and a string for easy removal of it. The main advantage of this tampon was the applicator which helped in inserting the tampon without touching the vagina and menstrual blood. Yet there were myths related to tampons that women might lose their virginity while using them, thus tampons were advised only for married women. In 1933 Earl Haas's tampon patent was brought by Gertrude Tendrich and the company Tampax was created. In 1969 Stayfree marketed the first-ever sanitary napkin which had adhesive strips thus the problem related to using a menstrual belt was resolved. Later absorbent materials like polyester and carboxymethyl cellulose were used but bacteria could breed more easily in these absorbents than cotton thus these materials couldn't be used for sanitary napkins or tampons.

In the 2000s the menstrual cup and the use of washable cloth pad got popular as alternatives to sanitary napkins and tampons keeping in mind the environmental pollution caused when they are been disposed of. Around the globe, these strategies to cope with the menstrual flow vary greatly, depending on personal preferences, economic conditions, resources available and knowledge regarding menstruation. It also varies among various cultures, traditions and belief systems.

Sanitary wastes contain menstrual waste (sanitary napkins, tampons, clothes, panty lines, etc.) as well as wastes such as condoms, diapers, used cotton or syringes, etc involving human faeces, urine, blood, or any other body fluids. Such waste can't be generally categorized into wet or dry wastes. Thus, it can't be segregated daily, at the household level or as municipal waste overall. This

gives rise to an improper waste management system and is further harmful to the garbage collector as they are indirectly exposed to hazardous bio-waste or domestic waste. About 12.3 billion sanitary napkins are dumped in landfills in India every year. Sanitary napkins are mainly composed of plastic and thus they are non-biodegradable and non-compostable. Menstrual waste accounts for pollution and due to improper disposal and non-segregation of menstrual waste, it is very unhygienic for waste management workers. Small-scale incinerators have been adopted to dispose of the menstrual wastes but the toxic fumes produced on burning add to further environmental pollution, which causes harm to our health too. Tampons and organic sanitary napkins have lower amounts of plastic but menstrual cups are the only non-plastic alternative.

To spread awareness and promote menstrual hygiene and waste management various government or non-profit organizations among implement courses on menstruation, menstrual hygiene management, various menstrual aids available and also disposal of menstrual wastes should be included. Education regarding the same should be provided to boys and girls at the school level. Online platforms like various social media or electronic media also play an important role in making women aware of the various latest menstrual products available, menstrual hygiene, etc. Myths regarding the same is been deeply embedded in our society and must be discarded. With the increasing problem of waste management and problems for disposal, emphasis must be given to the use of reusable sanitary cloth napkins or use of menstrual cups.

Review of Literature:

Deshpande (2018) studied menstrual hygiene among adolescent girls and identified that the knowledge of parents plays a vital role in implementing hygienic practices among adolescent girls. Luvi Dian Afriyani, Eti Salafas (2020) investigated factors influencing menstrual hygiene practice among adolescent girls. The results of this study indicated that knowledge and family involvement are the most influential factors in the practice of menstrual hygiene in adolescents. The results also show that friends and media are not significantly related to menstrual hygiene practices.

Rajinder Kaur (2018) studied menstrual hygiene, management, and waste disposal: Practices and challenges faced by girls/women of developing countries and found that girls and women have very less or incomplete knowledge about reproductive tract infections caused due to ignorance of personal hygiene during menstruation. It was also found that women manage menstruation differently when at home or in any public setting. Disposal of menstrual waste in domestic waste or public toilets is a common practice. Wilmouth R, Muller N, Truyens C (2013) established interactions between menstrual hygiene management and sanitation systems, the menstrual hygiene products and practices have a significant impact on sanitation systems, as well as on the experiences, product choices, and practices of women and adolescent girls. Furthermore, the study found that sanitation systems also have an effect on menstrual hygiene management.

Acheampong Enoch (2020) studied challenges and coping strategies for adolescents with disability and found females with disabilities face additional challenges with menstrual hygiene management compared to other women, where challenges vary depending on the disability.

Method:

The hypothesis of the study was 'To study challenges and coping strategies in working and non-working women related to the use of sanitary aid in the age group of 18-40 years in the city of Mumbai.'

Participants:

The self-developed inventory was administered to a total of 140 women belonging to the age group with 18-40 from the city of Mumbai. Out of 140 individuals, 70 were non-working/pursuing study and 70 were working/entrepreneurs. These participants attempted the inventory from their homes, using the google form in an online mode.

Instrument:

The tool used was a self-developed inventory. It consisted of 40 statements. These statements pertain to the challenges and coping mechanisms with menstrual hygiene aids available. Every statement had three options each-'Yes', 'No' and 'Maybe'. The participants responded to the statements according to their preferences.

Ethical consideration:

The participants gave their consent to participate in the study after being individually contacted to complete the test. They received assurances that their responses would be treated confidentially and used only for research.

Statistical analysis:

For the Statistical analysis, the Pearson product-moment correlation was used to test the hypothesis.

Results:

A relatively low positive correlation was been found between the non-working/pursuing study women and working/entrepreneur women in their coping mechanisms with menstrual hygiene materials available and the challenges faced by them. The test were conducted on 70 non-working/pursuing study women and 70 working/entrepreneur women. The Pearson product-moment correlation obtained was 0.13. This indicates that there is a relatively low positive correlation between the two variables, which supports the hypothesis.

Table 1: Summary table

Sample (n)	Pearson correlation coefficient (r)	P-value	Test statistic	Covariance
70	0.13	0.3245	0.9925	6.4418

Discussion:

The proposed hypothesis as to study challenges and coping strategies in working and non-working girls and women related to the use of sanitary napkins, tampons, and menstrual cups in the age group of 18-40 years in the city of Mumbai, was supported and proven by the relatively low positive correlation between the non-working/pursuing study women and working/entrepreneur women in the coping mechanisms with menstrual hygiene materials available and the challenges faced by them. The Pearson product-moment correlation method helped in proving the hypothesis, which expected to find a linear relationship between the two variables. A positive correlation of 0.13 was obtained between the two variables on the Pearson scale, which moderately supports the hypothesis. The results of the current analysis show that although both variables tend to increase in response to each other, there is not much of a relationship between them. Changes in one variable need not cause changes in the other simply because two variables are related. Although correlations reveal a link between two variables, they are not always implicated in one influencing the other. In countries like India, women are unable to manage their menstruation and associated hygiene with ease and dignity. Approximately 67% of women faced a lack of WASH facilities and a non-facilitating environment in public or private settings. 51% of women faced challenges in finding a safe space to privately change menstrual materials and in disposing of them. The current Indian toilet style could be a version that's constant because it was used throughout British rule. There is a dire need to look into new toilet systems keeping in mind menstrual hygiene, sanitary needs, dignity related to WASH, and personal safety, which should be female-friendly. 69.5% of women believe that Indian toilets and other WASH facilities are not female-friendly. About 59% of women don't prefer to use washroom in public setting due to lack of WASH facilities, thus altering their sanitation behavior. Approximately 91% of women frequently used sanitary napkins, introduced to them during the menarche, with 78% of them being satisfied with the use of certain menstrual aids that were recommended to them. 76.2% of women found it easier to use the sanitary napkin over the tampon and menstrual cup. 90.1% felt menstrual aids shouldn't include taxes and sometimes could be distributed or given away for free.

Sanitary wastes can't be typically classified as wet or dry waste. Thus, it can't be segregated daily, either on the domestic level or as municipal waste overall. This contributes to an inefficient waste management system and is also hazardous to garbage collectors because they are indirectly exposed to hazardous bio-waste or domestic waste. 95% of women feel that there ought to be separate facilities for disposing of menstrual aid, like dustbins specifically aggregating sanitary waste. 80% of women believed that disposing menstrual aid would be more practical if incinerators were built at the community level or if each building had a minimum of one incinerator.

The inference from the study is that girls and women who receive proper knowledge and education as to handling menstrual hygiene, various available menstrual aids, face fewer challenges and this helps them cope up with menstruation. 61% of women claimed to have frequent episodes of stress, anxiety, and sudden mood changes while handling the first few cycles of menstruation, when they lacked awareness regarding the same. The newer menstrual aids that coming are not that compatible with the patriarchal washroom facilities, so newer toilet systems are the need of the hour. A special disposal system should be considered when it comes to disposing of sanitary wastes, and incinerators should be easily accessible for easier disposal of menstrual aids.

Conclusion:

Menstruation is an important indicator of reproductive health and development; therefore, menstrual hygiene practices are of major concern. The pilot study sought out to measure the correlation between the non-working/pursuing study women and working/entrepreneur women in the coping mechanisms with menstrual hygiene materials available and the challenges faced by them, which depicted a p-value of 0.342. The study also assessed the knowledge, belief pattern, and challenges faced by women while coping with the menstrual products (sanitary napkins, tampons, and menstrual cups) during menarche, identified the menstrual pattern and menstrual products used to cope with the menstrual flow, and uncovered various myths and restrictions practiced. The WASH facilities and menstrual hygiene status, as well as awareness about various reproductive tract infections, were accessed using the self-developed inventory, titled Menarche: Challenges and Coping Mechanisms with Menstrual Hygiene Materials Available. The result highlighted the need for better WASH facilities in public and private settings, female-friendly toilets, noteworthy sanitary disposal systems, proper education before menarche to cope with menstrual aids, menstrual hygiene, and other challenges faced during the first few menstrual cycles. The results of this study may be used as a basis for future investigations into the possibilities of other similar challenges faced by menstruating women. This study may also be proved useful to parents, teachers, and care givers to help female with coping up with the changes they face during menarche.

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