



## Health awareness on the usage of menstrual cup in an urban community of New Delhi, India

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### Abstract

The stated aims of the study are

1. To evaluate the knowledge of women of reproductive age regarding the menstrual cup.
2. To examine the usage patterns of menstrual cups among women of reproductive age.
3. To explore the relationship between knowledge and attitudes toward menstrual cup usage and selected socio-demographic variables, including age, education, income, and social status.

The study employed a descriptive research design. It was carried out in an urban community in New Delhi. Data was collected using a structured questionnaire designed to assess respondents' knowledge and use of menstrual cups. The collected data were coded, organized, and statistically analyzed. Descriptive statistics were used for data analysis. The study reveals that a substantial proportion of women continue to practice inadequate menstrual hygiene, with significant associations observed between menstrual practices and demographic variables.

**Keywords:** Menstrual cup, menstrual hygiene, reproductive health, sustainable menstruation, urban women, New Delhi

### Introduction

Menstruation is a complex coordinated biological process and its onset indicates the start of reproductive years in female life. Women and adolescent girls worldwide need safe, effective and affordable menstrual hygiene management product.

The views on menstruation have varied widely across cultures and time periods. In many cultures, menstruation has been surrounded by taboos and stigmas. Some societies view menstruating women as impure or unclean, leading to practices like menstrual seclusion or restrictions on women's activities during their periods. On the other hand, certain cultures celebrate menstruation as a sign of fertility and womanhood, with rituals or ceremonies marking a girl's first period.

Historically, menstruation was often poorly understood from a medical standpoint, leading to misconceptions and superstitions. In more recent times, scientific understanding of menstruation has improved significantly, but misinformation and myths still persist, contributing to shame and embarrassment surrounding the topic. Menstruation has been a topic of discussion regarding women's health, body positivity, and gender equality. Some feminists advocate for menstrual equity, which includes access to affordable menstrual products, education about menstruation, and policies to support menstruating individuals in various settings such as schools and workplaces.

With growing awareness of environmental issues, there has been increased interest in sustainable menstrual hygiene products, such as menstrual cups and reusable cloth pads. Many individuals are turning to these alternatives to reduce waste and minimize their environmental impact. Overall, attitudes toward menstruation are complex and multifaceted, influenced by a combination of cultural, social, religious, medical, and personal factors. Efforts to challenge stigma, promote education, and provide support for menstruating individuals are important steps toward fostering more positive and inclusive views on menstruation.

Menstrual cup is one of the safe, comfortable, eco-friendly and sustainable menstrual hygiene management products available throughout the world. All over the world, women and girls use their own strategies for managing menstruation that varies from country to country, depending on personal preferences, available resources, economic status, indigenous traditions, cultural beliefs, and knowledge. Although menstrual cups have been available for decades, their use in India is limited because of lack of awareness and due to popularity of sanitary pads.

### Historical Evolution

The first commercial menstrual cup, called the "Tassette," was patented in the 1930s by American actress Leona Chalmers. It was made of latex rubber and featured a bell-shaped design similar to contemporary cups. However, due to social taboos surrounding menstruation and lack of marketing, it didn't gain widespread popularity. During 1960s disposable menstrual products like pads and tampons gained popularity and overshadowed reusable options like menstrual cups.

During 1980s - 1990s a brand of menstrual cup made from natural gum rubber "The Keeper" gained some following among environmentally-conscious women. In early 2000s a resurgence in interest in menstrual cups occurred which was driven by environmental concerns, cost-effectiveness, and a growing awareness of the potential health risks associated with disposable menstrual products. Several new brands and designs entered the market, offering cups made from medical-grade silicone, which were more flexible and hypoallergenic than earlier materials.

Today Menstrual cups have become increasingly popular worldwide, with a growing number of women choosing them as their preferred menstrual hygiene product. They are widely available online and in stores, with numerous brands offering a variety of sizes and designs to suit different needs and preferences.

Throughout their history, menstrual cups have undergone significant improvements in design and materials, making

them more comfortable, user-friendly, and environmentally sustainable. They continue to evolve as a viable alternative to traditional disposable menstrual products.

### Need of The Study

An exploratory study of the impact and potential of menstrual hygiene management waste in the UK was done by L.A.G. Blair *et al* and published in Apr 2022<sup>[1]</sup> revealed that an estimated 28,114 tonnes of waste is generated annually from menstrual products, 26,903 tonnes from disposable products of which about 4% (3,363 tonnes) is lost in the environment by flushing. The less sustainable products within those studied are disposable pads, which are the main contributors to menstrual waste volumes in the UK. Many disposable menstrual products are made from non-biodegradable materials such as plastic, synthetic fibers, and bleached paper pulp. These materials can take decades or even centuries to break down in landfills, contributing to environmental pollution and harm to wildlife.

A study on Menstrual waste disposal adding to India's environmental crisis which was released by the environmental group Toxics Link and published Indian Express on 3 Jun 2021<sup>[2]</sup> revealed that about 12.3 billion or 113,000 tonnes of used sanitary pads are dumped in landfills in India every year, adding to the already existing plastic pollution in the country

The study revealed that most women are unaware that commonly available disposable sanitary napkins constitute 90 per cent plastic and they are adding to the plastic crisis

The study also raised serious concerns on improper disposal methods and non-segregation of menstrual waste from household waste, which leads to unhygienic working conditions for waste workers, and poses the risk of infectious diseases among them.

Menstrual cups are reusable and reduce solid waste generation and are environment friendly. These cups are made from higher level medical grade silicon, latex, rubber, or elastomer when inserted inside the vaginal canal are capable of collecting menstrual blood and has relatively lesser side effects. They are cost effective as they can be reinserted after emptying and requires simple boiling. A menstrual cup can be used for 2-5 yrs based on material used for it.

There are a few quality studies in this area and further research is needed. During interaction with the reproductive age group females, need was felt to assess the knowledge and attitude towards usage of menstrual cups.

### Scope of Study

A growing body of qualitative research has highlighted the challenges faced by menstruating women and adolescent girls in low-resource settings and indicated negative effects on health, education, employment, and well-being. These studies have also highlighted a complex array of factors contributing to experiences of menstruation.

Poor menstrual hygiene management is linked to adverse health and poor quality of life, particularly during emergencies.

According to the WHO/UNICEF Joint Monitoring Programme for Water Supply, Sanitation, and Hygiene, women and adolescent girls should adopt a hygienic menstrual management product that can be changed privately. They ought to have access to soap and water for

bathing and provisions for disposing of used/ soiled menstrual management products.

At individual level, there is a need for awareness and integrity—understanding the basic facts about menstrual cycle and how to manage it with dignity, without agony or fear

In 2021, Rossouw and Ross coined the phrase “period-poverty” which that connotes lack of access to much-needed hygiene services during periods and adequate facilities to use them, including basic sanitation and menstrual information

Furthermore, studies have shown that in low- and middle-income countries, such as Kenya, seven percent of women still rely on old clothes and blankets, chicken feathers, mud, and newspaper. Similarly, in India, women face significant barriers for menstrual products due to a lack of resources and proper information. Beside affordability, menstruation also causes school absenteeism among schoolgirls due to lack of proper facilities at school, as has been the case with Bangladesh.

Inappropriate disposal of used menstrual materials and improper washing and drying of reusable materials raise the possibility of compromised health and hygiene.

Information on acceptability and safety of menstrual cups is essential in order to make informed decisions and provide more comprehensive menstrual health education for women and girls. There are a few quality studies in this area and further research is needed on the safety and acceptability of menstrual hygiene management products. Further research could provide more information on the acceptability, cost effectiveness, environmental impacts of this product.

### Problem Statement

A descriptive study to assess the Health Awareness about usage of Menstrual cup among The Women (20-40Yrs) in selected area of Urban community

### Aim of The Study

To assess the knowledge and attitude towards usage of menstrual cups by the reproductive age group of females in the urban community of New Delhi.

### Objectives

1. To evaluate the knowledge of women of reproductive age regarding the menstrual cup.
2. To examine the usage patterns of menstrual cups among women of reproductive age.
3. To find the relationship of the knowledge and attitude about the usage of the menstrual cups on the select socio-demographic variables- Age, education, income, social status.

### Operational Definitions

Assess: To estimate the effects of knowledge about menstrual cups on the usage by respondents using research.

Usage: Usage in the study was assessed in terms of duration, and frequency of menstrual cup utilization.

Menstruation: It is the regular discharge of blood and mucosal tissues from the inner lining of the uterus through the vagina

Menstrual cup: A menstrual hygienic device which is inserted into the vagina during menstruation to collect menstrual fluid.

Reproductive age group: It refers to the females between menarche and menopause. For our study age group from 18-45 is used.

Urban community: An urban community is a big city or town. It is considered as Urban community if there are more than 2,500 people living in the community

Awareness: knowledge or perception of a situation or fact

**Conceptual Framework**

**Health Belief Model**

Health belief model is a psychological model developed to explain the predict health related behaviors, particularly in regard to the uptake of health services. This was developed in 1950s by social psychologists at the U.S. Public Health Service.

This model suggests that people’s beliefs about health problems, perceived benefits of action and barriers to action and self-efficacy explains engagement in health promoting behaviour.

The various components of health belief model are:

**1. Perceived Severity**

Perceived severity refers to the subjective assessment of the severity of a health problem and its potential consequences. This encompasses beliefs about the diseases itself.

**2. Perceived Susceptibility**

This refers to subjective assessment of risk of developing a health problem. This predicts that the individual who perceives that they are susceptible to a particular health problem will engage in behaviours to reduce it.

**3. Perceived Benefits**

Perceived benefits refer to an individual’s assessment of the

value or efficacy of engaging in a health promoting behaviour. If an individual believes that a particular action will reduce susceptibility to a health problem or decrease its seriousness the he or she likely will engage in activities to reduce it.

**4. Perceived Barriers**

Perceived barriers refer to an individual’s assessment of the obstacles to behaviour change. Even if individual perceives a health condition as treating and believes that a particular action will effectively reduce the threat, barriers may prevent engagement in the health promoting behaviour.

**5. Modifying Variables**

Modifying variables are individual characteristics including demographic, psychological, structural, can affect perceptions. Demographic variables include age, sex, race, ethnicity etc.

**6. Cues to Action**

Cues or trigger is necessary for promoting engagement in health-promoting behaviour. Cues to action can be internal or external.

**7. Self Efficacy**

Self-efficacy is added to four components of this model, perceived susceptibility, severity, benefits and barriers. This was added to the model in an attempt to better explain individual differences in health behaviour.

**Health Belief Model**

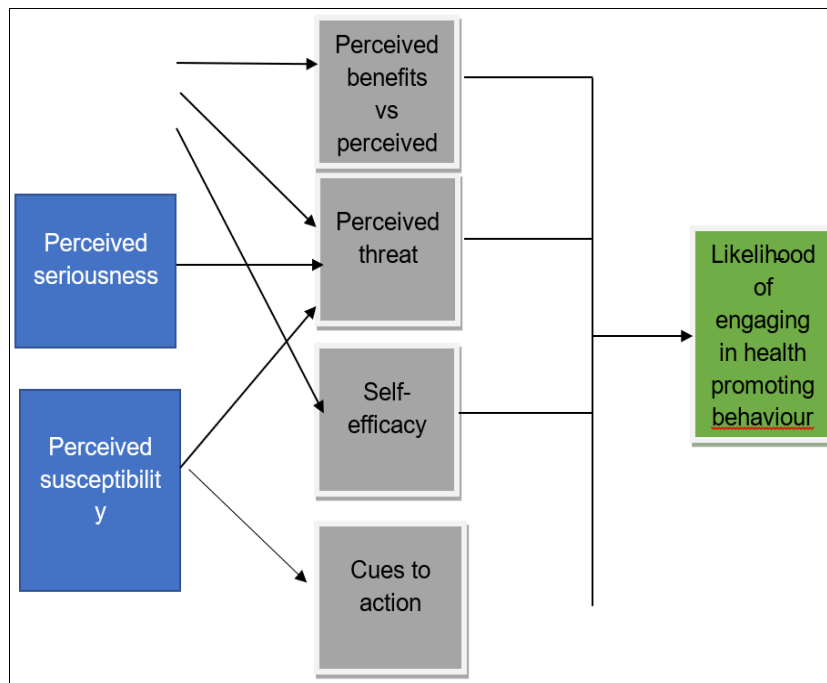


Fig 1: health belief model

Health belief model applied to present study on Knowledge and attitude regarding menstrual cups.

▪ **Modifying Variables**

The modifying variables in our study were age, economy, type of family.

▪ **Perceived Susceptibility**

The perceived susceptibility in our study were usage of Menstrual cup, effects of Menstrual cup on health.

▪ **Perceived Benefits**

The perceived benefits where Menstrual cup is used as a means of comfort and safety during menstruation.

**Perceived Barriers**

The perceived barriers were:

Effects on health

Effects were pain, vaginal irritation and infection.

**Cues to Action**

Internal cues

The internal cues can be the ill effects of Menstrual cup on health.

External cues

The external cues can be awareness programmes.

**Research Methodology**

**Research Design**

A descriptive study was conducted in an urban setting of New Delhi in January 2024 among females of 20-40 yrs of age group.

**Variables**

The study participants included students, staffs, and female attendees of a tertiary care institution.

**Population**

Population is the entire set of individuals or objects having some common characteristics selected for a research study; sometimes referred to as the universe of the research study.

- **Target Population:** The entire population in which the researcher is interested and to which researcher would like to generalize the research finding. In this study the target population were females in reproductive age group residing in urban community.
- **Accessible Population:** The aggregate of cases that conform to designated inclusion or exclusion criteria and that the accessible as subjects of the study. The accessible population in our study were in the age group from 20-40 years of New Delhi.
- **Sample:** The sample in our study were females of age between 20-40 years selected as per sampling frame.

**Sampling Technique**

Simple random technique

**Sample Size**

Total sample size =  $\frac{pq}{d^2}$ , where p is the percentage category for which we are computing the sample size=1-p, d<sup>2</sup>, =square value of the precision internal around sample estimate.

The calculated sample size as per the gold study was 364.

Due to time constraints, we have taken sample of 150

**Inclusion and Exclusion Criteria**

Women who were not willing to participate and those who had menopause were excluded from the study. Participants were selected by simple random sampling.

**Data Collection:** Data collection was done by direct & indirect interaction with the respondents to gather the information pertaining to the topic under study.

The pre-designed structured questionnaire was used for data collection.

Informed consent was obtained from the respondents and confidentiality was maintained throughout the study.

No expenses were incurred from the participants. Socio-demographic variables like age, educational status, socio-economic status, occupation, knowledge and attitude on menstrual cup usage were asked.

**Duration of Study:** 25 Jan 2024 - 30 Jan 2024.

**Data Analysis**

**Section A**

(SOCIODEMOGRAPHIC DATA)

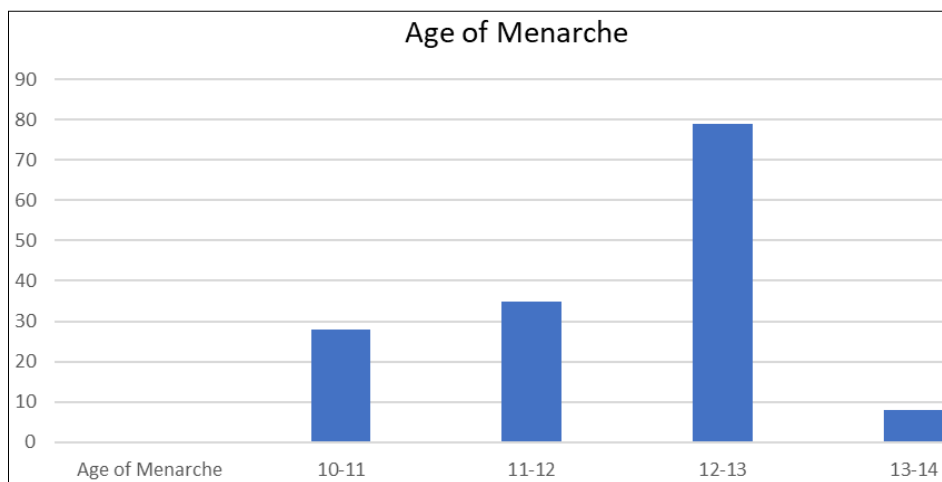
Most of the respondents belonged to the age group of 20-25 yrs of age (72%) with (73.33% of educational qualification of 10+2).

70% of respondents were from Upper middle class, 16.67% were from lower middle class and 13.33% from Upper class.

**Section B**

Awareness Usage and Knowledge about Menstrual Cups

**1. Age of menarche n=150**



**Fig 1:** shows that 5.33% of the respondents attained Menarche at the age of 13-14 yrs of age and maximum respondents attained menarche at 12-13 yrs of age.

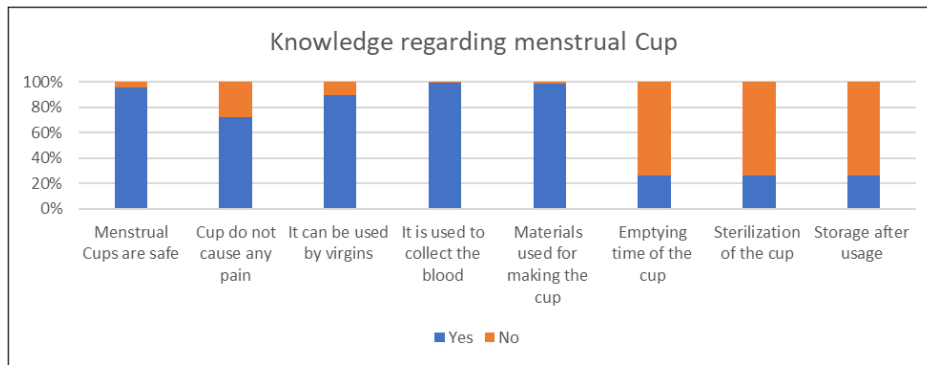
S No	Description	Yes	Percentage	No	Percentage
1.	Awareness of Menstrual cup	142	94.66	08	5.34

**2. Awareness of Menstrual cup n=150**

The data represented in table 1 shows that 142(94.66%)

were aware about menstrual cups and 8(5.34%) were unaware about the menstrual cups.

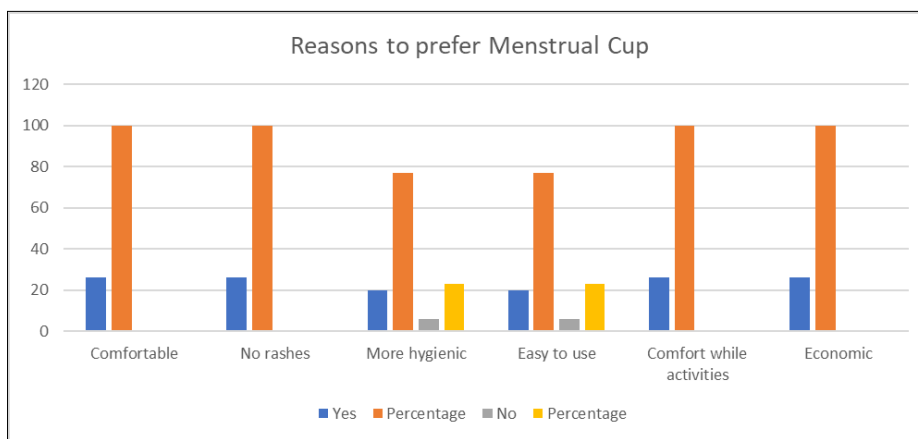
**3. Knowledge regarding menstrual Cup**



**Fig 2:** shows that 99.29% respondents were aware about the purpose of menstrual cup, 95.7% felt that they are safe but only 26.76% were aware about the emptying time, sterilization & storage of menstrual cup. 72.53% believed that it can cause pain.

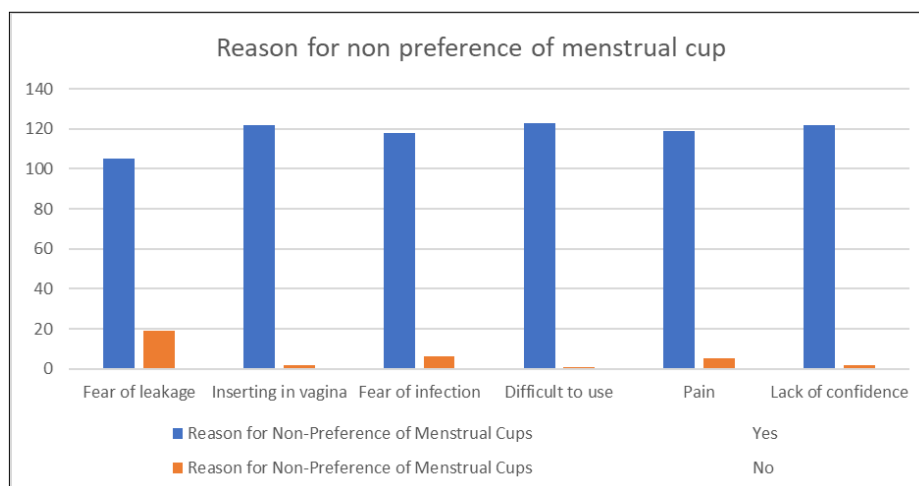
**4. Usage of menstrual cup**

Despite awareness about menstrual cups, 76.05% of respondents never used it. Only 26.76% of respondents have used a menstrual cup. Only 26 respondents were using it regularly.



The data represented in fig 3 shows that all 26 respondents were using menstrual cup as it is comfortable, provides freedom during activities, more economic and no chances of rashes. 23.08% believed that it is not easy to use and more hygienic than other products.

**5. Reason for Non-Preference of Menstrual Cups n= 124**



**Fig 4:** represents that 99.2% of respondents feel that Menstrual cups are difficult to use, 98.39% are uncomfortable to insert it and 95.27% believed that it will be painful. 98.39% respondents were not confident to use a menstrual cup and 84.68% had fear of leakage.

## Discussion

The present study is a descriptive study which was undertaken from 25 Jan 2024-30 Jan 2024 to assess the health awareness on the usage of menstrual cup in the selected population in New Delhi.

The study was intended to assess the knowledge and usage of menstrual cup by the females of age group (20-40 yrs) in the selected urban community of New Delhi.

The discussion is divided into following sub headings: -

- Knowledge about menstrual cup
- Usage of menstrual cup

A cross-sectional study on Knowledge, Attitude and Practices Regarding Menstrual Cup Among Females in an Urban Setting of South Kerala was conducted by Gayathri Mallick *et al* from December 2021 to January 2022<sup>[4]</sup>. Lack of knowledge (22.6%) and fear of insertion (56.2%) were the major reasons for not trying a menstrual cup. Out of the 350 study participants, 258(73.7%) had good knowledge scores and 92(26.3%) had poor knowledge scores. Discomfort and leakage were the most important problems reported by participants. A statistically significant association was found between younger age, educational status, socioeconomic status, marital status of females in the reproductive age group, and knowledge about the menstrual cup.

In the present study the gender wise distribution revealed that 72 % respondents were in the age group of 20-25 yrs of age. Among, these 99.29% respondents were aware about the purpose of menstrual cup and had good knowledge about the menstrual cups. Lack of confidence and difficulty in inserting the menstrual cups were the main reasons for not using menstrual cups.

### ▪ Knowledge about menstrual cup

The present study focused on the knowledge about menstrual cups in terms of material used to make menstrual cups and purpose of using the menstrual cup.

It was found that 142 out of 150 respondents had knowledge about the menstrual cups and were aware about its purpose. Out of which 72% were 20-25 yrs old and 93.33 % were under graduates.

### ▪ Usage of menstrual cup

The present study revealed that although 94.66% respondents were aware about the menstrual cups 74.67 % respondents never used it. Only 38 out of 150 respondents had used it and 17% only were the regular users despite of good knowledge about the menstrual cups.

A cross-sectional study was conducted by Pavithra Gangadharan *et al* in 2022<sup>[3]</sup> to assess menstrual cup awareness among the female medical college students. Among the 355 female medical students, 80% of the students had knowledge regarding menstrual cups, in which majority were aware of the material used to manufacture the cups. The cup was preferred by 100 (28%) and 54 (15%) of them used menstrual cups for its comfort, easiness to wear and less odor. Few of them had pain, dryness and rashes after the use of menstrual cup. Problem of leakage was encountered in 15-26%.

## Summary, Recommendation & Conclusion

This section presents a brief summary of the study and includes major finding, conclusion from the finding, limitations, implication and recommendation for the future research.

## Major findings of the study

The knowledge of the menstrual cup was present within an overwhelming majority (n=142) of the sample study. This knowledge was checked with a nuanced questionnaire assessing certain fundamental aspects of menstrual cups, viz; function, material, available sizes etc. However, only a minority professed to using it at all (n=38). Even among this small minority, only 26 respondents are using it on a regular basis.

Among those using it on a regular basis, the foremost reasons were comfort, hygiene and perceived economy. On the other hand, among the non-users, the reasons were diverse and chiefly perceptual. Perceived difficulty of use and fear of foreign body in the vagina undermined their confidence in the menstrual cup.

Previous researches conducted in India also reported low levels of usage of menstrual cup practices among Indian women.

The study suffers from several limitations that should be taken into consideration while interpreting the results. Firstly, the observational nature of the study does not allow conclusively the establishment of any causal relationship. Secondly, the self-reported nature of the data is subject to recall or reporting biases. This may result in an underestimation or overestimation of the actual use vis a vis other menstrual hygiene practice.

## Conclusion

This study reveals that a substantial proportion of women continue to practice inadequate menstrual hygiene, with significant associations observed between menstrual practices and factors such as age, education, place of residence, religion, socioeconomic status, and access to sanitation facilities. Despite ongoing efforts by governmental and non-governmental bodies to improve menstrual hygiene management in India, there remains a pressing need to strengthen and expand these initiatives, particularly among socially and economically marginalized populations.

The development and implementation of culturally sensitive, region-specific educational programs that address the biological, psychological, and social aspects of menstruation are essential. Training frontline health workers to deliver accurate, respectful information and ensuring that healthcare facilities are adequately equipped to support menstrual health are equally important. Moreover, policy interventions that guarantee access to affordable menstrual products and improved sanitation infrastructure are critical to promoting safe menstrual hygiene practices and advancing public health outcomes.

**Certificate of Conflict of Interest:** The author declares no conflict of interest.

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