

A Study to Assess the Knowledge, Attitude and Practice Regarding the Use of Menstrual Cup among Adolescent Girls in Selected Urban and Rural Community of Maharashtra

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Abstract

Background: Approximately 1.8 billion women menstruate every month and yet, it is estimated that only 1% globally use menstrual cups. However, there is a now robust evidence showing the health, educational, environmental, wellbeing, female empowerment and bodily autonomy benefits of menstrual cups. With just 1% of the carbon footprint of any other menstrual product, the environmental credentials of menstrual cups are now well established.

Among most of the menstrual hygiene management products available, disposal is a common problem faced globally. Instead of using sanitary pads, we can encourage females to use menstrual cup, which have been available for decades, still their use is limited. Despite the safety, affordability, International Journal of Academic Medicine and Pharmacy durability and eco-friendliness, there is lack of knowledge about menstrual cup and also, they have not been promoted to the desired level. People have fear of losing virginity as menstrual cup is inserted into the vagina, while a menstrual pad isn't.

Aim: To compare the knowledge, attitude and practice regarding use of menstrual cup among adolescent girls in urban and rural community of Maharashtra.

Objective

1. To assess the knowledge regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.
2. To assess the attitude regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.
3. To assess the practice regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.
4. To compare the knowledge, attitude and practice regarding use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.

5. To develop a structured teaching program to enhance knowledge, attitude and practice on use of menstrual cup among adolescent girls.

Materials and Methods: A quantitative, cross-sectional descriptive study was conducted among 200 adolescent girls aged 10–19 years, with equal representation from urban (n=100) and rural (n=100) communities. Purposive sampling was used. Data was collected using a self-structured questionnaire assessing knowledge, attitude and practice related to menstrual cup use. Descriptive statistics were applied for data analysis.

Results: In the urban community, 83% of participants demonstrated good knowledge, 11% had average knowledge, and 6% showed poor knowledge regarding menstrual cup use. In contrast, the rural community exhibited markedly lower awareness, with 82% reporting no knowledge and only 8% demonstrating good knowledge. Menstrual cup practice was low in both groups but significantly higher among urban girls (23%) compared to rural girls (1%). Urban participants showed a more positive attitude toward menstrual cups, perceiving them as safe, hygienic, cost-effective, and environmentally friendly. Rural participants expressed uncertainty and were more influenced by cultural beliefs and misconceptions.

Conclusion: The study highlights a substantial rural–urban gap in knowledge, attitude, and practice regarding menstrual cup use among adolescent girls in Maharashtra. While awareness and acceptance were higher in urban areas, actual usage remained limited overall. Structured school-based education, community awareness programs, and targeted health education interventions are essential to dispel myths, improve acceptance, and promote sustainable menstrual hygiene practices among adolescents.

Keywords: Menstrual cup, adolescent girls, knowledge attitude practice, urban–rural comparison, Maharashtra

Introduction

Menstruation is a natural physiological process experienced by adolescent girls and women of reproductive age. It is a key indicator of reproductive health and an essential aspect of a female's biological development. However, despite being a normal biological function, menstruation is often surrounded by social taboos, myths, and inadequate awareness, particularly in developing countries like India. This leads to a lack of open discussion, poor menstrual hygiene practices, and limited access to safe and sustainable menstrual products.¹

Menstrual hygiene management is vital for maintaining health, comfort, and dignity during menstruation. It involves the use of clean, safe, and acceptable absorbent materials, proper disposal, and access to adequate water, sanitation, and hygiene facilities. In India, a variety of menstrual products are available, including disposable sanitary pads, cloth pads, tampons and menstrual cups. While disposable sanitary pads remain the most widely used, they contribute significantly to environmental waste and can be financially burdensome over time.²

Menstrual hygiene products are essential for managing periods with comfort, dignity, and safety. Among the most widely used products are sanitary pads, which are absorbent layers worn in the underwear to collect menstrual blood. These come in disposable and reusable forms, with cloth pads gaining popularity for being eco-friendly and gentle on the skin.³ Tampons, another common option, are inserted into the vagina to absorb menstrual flow. They're discreet and convenient for active lifestyles, though they carry a small risk of Toxic Shock Syndrome (TSS) if not used correctly.⁴

The menstrual cup is a relatively newer and eco-friendly alternative. Made of medical-grade silicone, rubber, or latex, it is inserted into the vagina to collect menstrual blood and can be reused for several years. Its benefits include cost-effectiveness, reduced environmental impact, longer usage time, and lower risk of leakage when used correctly.⁵ Despite these advantages, awareness and acceptance of menstrual cups remain low, especially among adolescents, due to cultural beliefs, misconceptions, and limited exposure to accurate information.

Background of the study

Approximately 1.8 billion women menstruate every month and yet, it is estimated that only 1% globally use menstrual cups[5]. However, there is a now robust evidence showing the health, educational, environmental, wellbeing, female empowerment and bodily autonomy benefits of menstrual cups.¹⁴

Among most of the menstrual hygiene management products available, disposal is a common problem faced globally. Instead of using sanitary pads, we can encourage females to use menstrual cup, which have been available for decades, still their use is limited. Despite the safety, affordability, International Journal of Academic Medicine and Pharmacy durability and eco-friendliness, there is lack of knowledge about menstrual cup and also, they have not been promoted to the desired level.¹⁹

People have fear of losing virginity as menstrual cup is inserted into the vagina, while a menstrual pad isn't. Women in India consider the topic of menstrual hygiene as taboo and hesitate to discuss about their experiences. The average period lasts 37 days per month, 6.25 years (2280 days) over a lifetime in women aged 13-51 years who menstruate.²⁰

There have been studies conducted on the use of menstrual cups in Maharashtra, highlighting awareness, acceptance, and challenges faced by women. One study assessed knowledge and awareness among reproductive women in India, finding that only 3.69% of respondents used menstrual cups, with social media being the primary source of information. Concerns about leakage, insertion, and allergies were common barriers, along with affordability and social taboos.²¹

Objectives

Primary objectives:

1. To assess the knowledge regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.
2. To assess the attitude regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.
3. To assess the practice regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.

Secondary objectives:

1. To compare the knowledge, attitude and practice regarding use of menstrual cups among adolescent girls in urban and rural community of Maharashtra.
2. To develop a structured teaching program to enhance knowledge, attitude and practice on use of menstrual cup among adolescent girls.

Methodology

The research approach chosen for this study was a Quantitative research approach with the aim to assess

the Knowledge, Attitude and Practice regarding the use of Menstrual Cups among Adolescent Girls in selected Urban and Rural Community of Maharashtra.

In present study this approach yielded many facts and information which help to determine the knowledge, attitude and practice of using menstrual cups among adolescent girls in urban and rural community of Maharashtra.

The Non-experimental (survey) descriptive research design was selected for the study. A descriptive design is a study in which the condition and potentially related factors were measured at a specific point in time for a defined population. The design was selected because it provides a more holistic, contextually sensitive perspective to assess the Knowledge, Attitude and Practice regarding the use of Menstrual Cups among Adolescent Girls in selected Urban and Rural Community of Maharashtra.

In this study sample comprises of 200 adolescent girls, 100 each of urban and rural community. The study sample fulfilled inclusion and exclusion criteria and willing to participate in the study were selected by purposive sampling technique.

The sample size of the study is calculated, based upon a cross-sectional study conducted by Gayathri Mallika et al. to assess knowledge, attitude and practices regarding menstrual cup among females in urban setting of South Kerala. A cross-sectional study was conducted among female of reproductive age from December 2021 to January 2022. The result of the study was that, most of the participants (93.4%) were aware of menstrual cups.

A quantitative, cross-sectional descriptive study was conducted among 200 adolescent girls aged 10–19 years, with equal representation from urban (n=100) and rural (n=100) communities. Purposive sampling was used. Data was collected using a self-structured questionnaire assessing knowledge, attitude and practice related to menstrual cup use. Descriptive statistics were applied for data analysis.

Results

The research assessed the knowledge, attitude and practice regarding the use of menstrual cups among adolescent girls in urban and rural community of Maharashtra using a cross-sectional study. The research was conducted in urban and rural schools of Maharashtra including 100 participants from both communities. In urban community, despite being aware of the menstrual cups only 23 participants are using menstrual cup while in rural community only 1 participant is using menstrual cup. This study highlights the positive impact of menstrual cups as a sustainable and effective alternative for menstrual management. Participants reported improved comfort, convenience, and confidence in managing menstruation, particularly among experienced users. While challenges like insertion difficulties and lack of awareness persist, targeted education and awareness initiatives can address these barriers. The findings underscore the potential of menstrual cups to enhance menstrual health, reduce environmental waste, and promote eco-friendly practices.

Table 1: Depicts the knowledge of participants in urban community

S.NO.	KNOWLEDGE	NO. OF PARTICIPANTS
1.	Good	83
2.	Average	11
3.	Poor	06
4.	No knowledge	0

Table 2: Depicts the knowledge of participants in rural community

S.NO.	KNOWLEDGE	NO. OF PARTICIPANTS
1.	Good	08
2.	Average	06
3.	Poor	04
4.	No knowledge	82

Out of the 100 urban participants, all belonged to age group 18-19yrs studying in senior secondary school, 94% participants were Hindu, most of their parents were graduates and all participants were aware of the menstrual cups, the internet was the primary source of information followed by other sources.

On contrast in rural community, out of 100 participants majority belong to age group of 13-15 yrs studying in secondary school, 64% of the participants were Hindu, their parents had less education qualification especially their mother's who read upto secondary level with 18% being illiterate, out of all the participants only 18 were aware of menstrual cups and internet being the primary source of information.

Findings related to attitude towards menstrual cup:

In both urban and rural community, participants had positive attitude towards menstrual cups and considers menstrual cups as a safe alternative to other products and helps in reducing plastic waste and more environmental friendly. All participants agree to the point that education related to menstrual cup should be included in school education programs.

Findings related to practice of menstrual cup among adolescents:

In urban community out of 100 participants, despite having good knowledge only 23 participants are using menstrual cups and reported problems such as leaking and increase in abdominal cramps; all users are aware of proper cleaning of the menstrual cup and the method of insertion and removal. In rural community out of 100 participants only 1 participant is using menstrual cup and is aware of the proper usage and cleaning of menstrual cup.

Discussion

The present study assessed the knowledge, attitude, and practice regarding menstrual cup use among adolescent girls in both rural and urban communities of Maharashtra. When compared with the findings of **Manju George et al. (2023)**, several similarities and notable differences emerge.

1. Knowledge on Menstrual Cups

Findings of Manju George et al. (2023):

- Reported that around 50% of participants had good knowledge, while the rest demonstrated average or poor knowledge.
- Awareness of menstrual cups was present but not uniformly high among all adolescents.
- Misconceptions such as difficulty inserting, risk of infection, and concerns related to virginity were commonly noted.

Comparison with the Present Study:

- The present study revealed a wide urban–rural gap:

- Urban participants (100%) had heard of menstrual cups, whereas only 18% of rural girls were aware of them.
- Urban participants displayed very high factual knowledge on material, insertion, emptying duration, cleaning, ability to swim, leak prevention, overnight use, and environmental benefits.
- Rural participants showed poor or inconsistent knowledge, and many selected incorrect options (e.g., believing cups absorb fluid, cause infertility, or require alcohol-based cleaning).

Interpretation:

Compared to George et al., the urban group in the present study demonstrated much higher knowledge, while the rural group showed significantly lower awareness, suggesting that geographical and educational access differences strongly influence menstrual cup knowledge

2. Attitude Toward Menstrual Cups

Findings of Manju George et al. (2023):

- 81% of adolescents exhibited positive attitudes toward menstrual cups.
- None showed negative attitudes; few were neutral.
- Despite moderate knowledge, overall perceptions were favorable.

Comparison with the Present Study:

- Urban girls had overwhelmingly positive attitudes:
 - 94% strongly agreed that menstrual cups are safe.
 - 93% strongly supported promotion of menstrual cups in schools.
 - High agreement with statements on sustainability, hygiene, convenience, and flexibility.
- Rural girls, however, demonstrated more neutral and hesitant attitudes:
 - Many responses showed uncertainty regarding comfort, sustainability, hygiene, and suitability for all women.
 - Cultural myths (e.g., fear of hymen rupture) persisted more in rural areas.

Interpretation:

The overall attitude pattern matches George et al.'s findings only for the urban subgroup of the present study. The rural subgroup diverges with lower confidence, more neutrality, and more influence of social and cultural beliefs.

3. Misconceptions and Cultural Barriers

Findings of Manju George et al. (2023):

- Misconceptions surrounding virginity, pain, and fear of infection were frequently reported.
- Participants expressed concern about inserting the cup.

Comparison with the Present Study:

- Similar misconceptions were noted, but more prominently among rural girls:
 - Neutrality or confusion about hymen rupture (12 rural girls neutral).
 - Some believed menstrual cups may cause infertility or infection.
 - Rural girls expressed greater dependence on “doctor’s advice” or “medical supervision.”
- Urban adolescents did not report significant misconceptions and mostly disagreed with myths.

Interpretation:

Both studies highlight persistent misconceptions, but they are stronger in rural participants in the present study, indicating the need for targeted educational interventions.

4. Practice of Menstrual Cup Use

Findings of Manju George et al. (2023):

- The study focused more on knowledge and attitude; only a small percentage reported actual use.
- Adoption remained low despite positive attitudes.

Comparison with the Present Study:

- Urban population: 23% used menstrual cups.
- Rural population: Only 1% used menstrual cups.
- Participants who used menstrual cups reported challenges—difficulty inserting (16 urban, 1 rural), leakage, and pain.

Interpretation:

The present study strongly supports George et al.'s observation that positive attitude does not translate into practice. However, the urban area shows comparatively higher usage, possibly due to greater prior exposure and better access.

5. Sources of Information

Findings of Manju George et al. (2023):

- Social media and peers were the primary sources of information.
- Limited structured health education.

Comparison with the Present Study:

- Urban girls: 48% received information from the internet, similar to George et al.'s findings.
- Rural girls: Learned mostly from family/friends (7%) or had no information at all (82% unaware).

Interpretation:

Urban findings align with George et al., but rural adolescents show major information deprivation, emphasizing the gap in access to menstrual health education.

6. Overall Interpretation and Implications

- The positive attitudes found in both studies indicate growing acceptability of menstrual cups among adolescents.
- However, the present study reveals that knowledge and usage vary drastically between urban and rural communities, unlike George et al.'s study which showed moderate and consistent awareness.
- Misconceptions and cultural beliefs continue to be major barriers, especially in rural areas.
- Both studies reinforce the importance of education, demonstrations, and awareness programmes to improve knowledge and bridge the gap between attitude and practice.

Recommendations:

1. Conduct long-term studies on menstrual cup usage and safety.
2. Integrate menstrual cup education into school health programs and community outreach initiatives.
3. Provide counselling and support to women considering menstrual cup usage.
4. Address concerns and myths about menstrual cups.
5. Launch awareness campaigns to promote menstrual cup usage as a sustainable and eco-friendly alternative.
6. Encourage peer-to-peer education programs where trained users can share experiences and guidance with first-time users.
7. Conduct longitudinal studies on long-term safety, comfort, and satisfaction among different age groups.
8. Compare menstrual cups with other menstrual products (pads, tampons) in terms of cost-effectiveness

and health outcomes.

9. Ensure menstrual cups are available at affordable prices, especially in rural or low-income areas.
10. **Training of Nurses and ASHA Workers:** Train healthcare providers to guide women on safe and comfortable usage.

Conclusion

The present study comprehensively assessed the knowledge, attitude, and practices regarding menstrual cup use among adolescent girls in rural and urban communities of Maharashtra. Findings revealed significant disparities between the two groups, with urban participants demonstrating higher awareness, more positive attitudes, and better self-reported practices compared to their rural counterparts. Limited exposure to menstrual health education, cultural taboos, and misconceptions contributed to lower acceptance and adoption in rural areas. Despite these challenges, the study highlights the potential of menstrual cups as a sustainable, hygienic, and cost-effective menstrual hygiene option, provided that adolescents receive appropriate education and guidance.

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