

Knowledge and Awareness of Menstrual Cup among Reproductive Women

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Abstract

Background: Menstrual cup (MC) is a more contemporary alternative to sanitary napkins. High-quality medical grade silicone (biodegradable) products have the benefit of reusability and have a potential lifespan of up to 10 years. The present study aimed to assess the knowledge and awareness of MC among reproductive women in India.

Methodology: A cross-sectional survey was conducted, using online questionnaire among the general population. The participants aged between 18 and 45 were included in the study.

Results: Of 325 completed responses, majority were aged between 18 and 25 (38.15%). Majority of the responders used sanitary pad (79.3%) and only 3.69% were using MC. The major source of information about the MC is social media. There is significant difference between the age group less than 35 and >35 in knowledge ($P = 0.001$) and attitude toward MC ($P = 0.001$). Majority of the responders are concerned for leakage, inserting in vagina, and fear of allergies. The reason for non-preference of MC was affordability, accessibility, social taboo, and limited knowledge.

Conclusion: Even though many of the participants were aware of the MC's use, it has not yet been widely accepted. Awareness and knowledge could be improved, as there is a room for improvement, people need to understand about the menstrual hygiene and overcome the social taboo and hesitancy. This can be achieved by addressing the fear factors and creating more awareness campaigns from voluntary organizations and government sectors.

Key words: Acceptance awareness, Menstrual cup, Social taboo

INTRODUCTION

Menstruation is a physiological phenomenon; millions of women globally experience every month. It is a normal biological process. Although it is the most common biological process, in lower- and middle-income countries, due to social issues and lack of guidance maximum of the girl's experience fear, confusion, shame, and discomfort while they try to be accustomed to their monthly period.^[1] In developing countries like India, it is subjected to stringent social stigma. Different sanitary products are used by women all across India. Some sanitary products are reusable

sanitary pads, disposable sanitary pads, tampons, cloth, period pants, and menstrual cups (MC). MCs are reusable sanitary cups which are made of medical grade silicon, latex, or a thermoplastic isomer. These cups were first patented in the USA and presently almost 100 brands are available and marketed globally.^[2] The cups can be reused for about 10 years, although they have a higher 1-time investment in comparison to other sanitary products. They are more environmentally friendly as well. MCs have been available since decades, but their use is limited.

Menstrual health and hygiene have been a relatively unexplored topic in terms of research studies conducted in India. A really small percentage of studies discussed the usage of MCs specifically. In studies conducted in low- and middle-income countries have shown that among school girls, MCs have received positive responses.^[3,4] Preliminary studies of acceptability in low- and middle-income countries suggest cups are a potential option for girls as well as women.^[5-8] Preclinical assessments did not show any

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evidence that this product was toxic or mutagenic and no health risks were observed during the post-marketing study in the USA.^[9] In a study from UK, 55% of participants indicated a desire to continue using the product due to less leakage during activity, environmentally-friendly design, and its long-term cost-effectiveness.^[10] Although acceptability of this product has been reported among different cultures,^[11] the evidence suggests that women's views on the MCs are related to sociocultural factors.^[12] Menstruation is still considered a taboo in some societies.^[11]

The Indian study conducted in Maharashtra, Chhattisgarh, Tamil Nadu among school girls on the menstrual hygiene, reported that nearly 1% of the participants were used MCs. The study highlighted that the accessibility might be one of the reasons for the low usage of the cups.^[13] There is a paucity of studies focused on the affordability of MCs and a recent meta-analysis showed that that MCs are a safe option for menstruation management and are being used internationally, perhaps the further studies are needed on cost effectiveness.^[14] There is a hesitant to switch to MCs, due to various reasons such as reluctance to change usage pattern, and fear or limited knowledge, among college going students in Udaipur.^[15] Perhaps in another study conducted in Maharashtra, the participants were willing to switch to cups as it was economically feasible and also comfortable to use.^[16] Another study on menstrual hygiene of adolescent girls in India discussed that cups may be economically advantageous to use, but its low usage may be attributed to concerns about virginity and breaking the hymen.^[17] In a study conducted in Nepal, the use of vaginal MCs for menstrual hygiene management among schoolgirls showed feasible and acceptable, as it involves practical, economic, and environmental advantages. Nevertheless, the scale-up of MCs will require resolving described concerns and discomforts and fostering peer and family support.^[18] The risk of urogenital diseases is much higher in Indian women due to certain menstrual hygiene practices such as reusing the menstrual cloth, as was emphasized.^[19] The effect of menstrual hygiene on school going girls was conducted among 751 students among which, 644 were followed-up for a median of 10.9 months. The finding highlighted that the use of MCs was associated with lower levels of bacterial infections according to a study conducted in rural Western Kenya.^[20] These studies have shown a potential option of these cups in reproductive women. Perhaps there is paucity of data on the knowledge and awareness of MC among reproductive women in India.

METHODOLOGY

A cross-sectional and observational study was conducted among the females of reproductive age, between October

2022 and December 2022. A questionnaire was prepared using Google Forms and was shared through various social media platforms. The study was approved by the Institutional Ethics Committee, Apollo Hospitals, Chennai. Females with reproductive stage and who understand the contents of the questionnaire and willing to participate in the study were included in the study. The questionnaire consists of the following sections: the first section includes demographic and anthropometric details which included age, marital status, educational qualification, occupation, and monthly expenditure toward sanitary products were recorded accordingly. The second section includes the questions related to perception, knowledge, and awareness related to MC. The baseline characteristics of the participants were presented as frequency and percentages. The data were analyzed using SPSS version 22.0 (IBM). $P \leq 0.05$ was considered statistically significant for all analyses.

RESULTS

A total of 340 participants were responded, among with 325 were included in the study. Table 1 shows the demographic profile of the respondent. In the present study, majority of the responders were aged between 18 and 25 (38.15%), followed by 26–35 years (34.76%). Majority of the responders belongs to urban area (41.23%). Occupation of the women shows that 32% of the respondents are employed, 25.84% students, 22.46% unemployed, and 15.07% are home makers. Expenditure toward the sanitary products ranged between 100 and 300 Rs. per month (44.9%). The source of information about the MC for the responders was friends (68.92%), followed by family (23.07%), media (4.30%), and medical personal (3.69%). In terms of usage of sanitary pads, majority of the responders used sanitary pads (79.38%), followed by cloths (12.38%). Of the study population, only 3.69% actually use MC.

Table 2 shows the knowledge on MC among age groups. Majority of the participants responded that the MC is a safe device (54.76%), it can be used in virgins (60.61%), aware about the mechanism of action (58.59%), aware about the emptying time of the cup (6–12 h) (48.30%), sterilization of the cup (60.61%), and used during postpartum (57.84%). There is significant difference between the age group less than 35 and >35 in knowledge on MC ($P = 0.001$).

Figure 1 depicts the attitude toward MC. Majority of the responders agreed that the MC is environmentally friendly (88.3%), easy to adapt (76.61%), would be comfortable (73.84%), hygiene (72.3%), easy to clean (70.46%), easy

to wear (68.30%), and easy to remove (63.07%). Perhaps majority of the individuals feels that it is not cheaper (68.3%). There is a significant difference between the responders aged <35 years and aged above 35 years ($P = 0.001$).

Figure 2 depicts the technical concerns about the MC. Majority of the responders are concerned for leakage (57.84%), inserting in vagina (57.23%), and fear of allergies

(57.84%). Perhaps among the responders who were using MC (3.69%), they were not concerned about the leakage, vaginal insertion, or allergies. About 63.07% of the responders would like to use MC if it is made available. The reason for non-preference of MC were affordability (88.92%), followed by accessibility (60.92%), social taboo (52%), and limited knowledge (45.23%) [Table 3].

DISCUSSION

The present study highlighted that the social media is an effective information source (68.92%), with the majority of participants getting their information through social media, whereas in previous studies, only about 36.7% were reported to know about the MC from social media.^[21,22] In the same survey, the respondents reported that the durability, low economic costs, eco-friendliness, and reusable nature of the MC were the main reason behind its popularity. In the present study maximum of the study, participants were in the 18–25 years of age group. Maximum number of earlier studies assessed the level of knowledge of MC usage among the adolescent girls.^[3] Perhaps the present study focused on the reproductive group. A recent study finding suggested that a total of 82% were aware about the MC, perhaps only 2.6% have used.^[2] Similarly, in the present study, only 3.6% were used MC. To maintain sanitary hygiene on menstrual days, the majority of responders utilized sanitary pads either alone or in combination with cloth, tampons, and MCs. According to research conducted in India, most girls who attend school and adults also use sanitary napkins.^[23–25] This may be because napkins are offered at primary health-care centers for free or because menstruation cups are less popular among women of these ages than sanitary pads and cloth.^[14,25]

In a meta-analysis, 70% of people from 13 studies indicated their readiness to continue using menstruation cups.^[14] Although most of the participants in the present study were aware of MCs, most had never ever used one. Moreover, only 3.6% of women were found to have

Table 1: Demographics parameters of the study participants

S. No.	Variable	n (%)
1	Age	
	18–25	124 (38.15)
	26–35	113 (34.76)
	36–45	88 (27.07)
2	Place of residence	
	Urban	134 (41.23)
	Semi urban	111 (34.15)
	Rural	80 (24.61)
3	Occupation	
	Student	84 (25.84)
	Employed	104 (32)
	Unemployed	73 (22.46)
	Homemaker	49 (15.07)
	Business	15 (4.6)
4	Monthly expenditure toward sanitary products (Rs)	
	0–100	39 (12)
	100–300	146 (44.9)
	300–500	97 (29.84)
	>500	43 (13.2)
5	Sanitary products currently used	
	Sanitary pads	258 (79.38)
	Tampons	5 (1.53)
	Menstrual Cups	12 (3.69)
	Cloths	50 (15.38)
6	Source of information	
	Family	75 (23.07)
	Friends	224 (68.92)
	Media	14 (4.30)
	Medical personnel	12 (3.69)
7	Menstrual cup made up of	
	Silicon	91 (28)
	Rubber	65 (20)
	Latex	114 (30.07)
	All the above	55 (16.92)

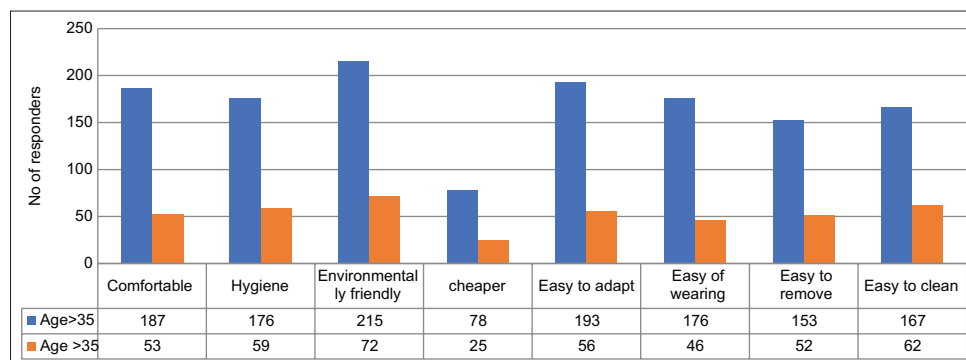


Figure 1: Attitude toward menstrual cup

Table 2: Knowledge on menstrual cup among age groups

S. No.	Variable	n (%) n=325	Age >35 years n=237 (%)	Age <35 years n=88 (%)
1	Menstrual cup is safe device			
	Yes	178 (54.76)	112 (47.25)	66 (75)*
	No	147 (45.23)	125 (52.74)	22 (25)*
2	Can it be used in virgins			
	Yes	197 (60.61)	145 (61.18)	52 (59.09)
	No	128 (39.38)	92 (38.81)	36 (40.9)
3	Awareness of mechanism of action			
	Yes	168 (51.69)	126 (53.16)	42 (47.72)*
	No	157 (48.3)	111 (46.83)	46 (52.27)*
4	Mechanism of action			
	Collection	98 (58.33)	78 (32.91)	20 (22.72)*
	Absorption	70 (41.66)	48 (38.09)	22 (52.38)*
5	Emptying time of cup			
	2 h	54 (16.61)	31 (24.6)	23 (54.76)*
	6–12 h	157 (48.3)	113 (47.67)	44 (50)
	Don't know	114 (35.07)	93 (39.24)	21 (23.86)*
6	Mode of sterilization of cup			
	Washing with water	87 (26.76)	72 (30.37)	15 (17.04)*
	Boiling	114 (35.07)	82 (34.59)	32 (36.36)
	Using microwave	74 (22.76)	42 (17.72)	32 (36.36)*
	All the above	50 (15.38)	41 (17.29)	9 (10.27)*
7	Sterilization of cup			
	Yes	197 (60.61)	160 (67.51)	37 (42.4)*
	No	128 (39.38)	77 (32.48)	51 (57.95)*
8	Can it be used in postpartum			
	Yes	188 (57.84)	162 (68.35)	26 (29.54)*
	No	137 (42.15)	75 (31.64)	62 (70.45)*
9	Can it be used while swimming			
	Yes	186 (57.23)	151 (63.71)	35 (39.77)*
	No	139 (42.76)	86 (36.28)	53 (60.22)*
10	Can it be used while bathing			
	Yes	247 (76)	195 (82.27)	52 (59.09)*
	No	78 (24)	42 (17.72)	36 (40.9)*
11	Can it be used while sleeping			
	Yes	186 (57.23)	147 (62.02)	39 (44.31)*
	No	139 (42.76)	90 (37.97)	49 (55.68)*

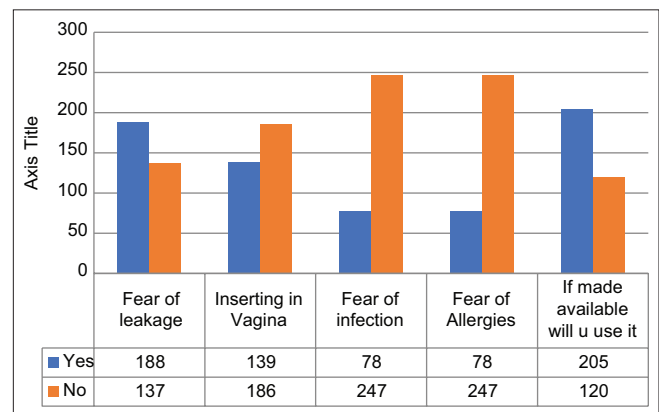
*P≤0.001

Table 3: Reason for non- preference

S. No.	Reason for non-preference	n (%)
1	Accessibility	198 (60.92)
2	Social Taboo	172 (52.92)
3	Limited knowledge	147 (45.23)
4	Affordability	289 (88.92)

used a MC. Therefore, additional analysis of cleanliness and MC leaking was outside the purview of the study. Similar research in Gujarat revealed that adults between the ages of 20 and 50 preferred using MCs because they were simpler to insert and remove, more comfortable, less smelly, and had less side effects including rashes and dryness.^[24] Even though the study participants were well aware of the practice and hygiene of the MC, the assessment of acceptability of the cup based on the questionnaire should be further investigated by prospective observational studies.

Although menstruation cups have many advantages over

**Figure 2: Technical concerns about menstrual cup**

other products used for the period management, it has not been widely adopted due to poor knowledge and promotion. The urgent requirement is to raise awareness of the product and make it available in all pharmacies and super markets. Healthcare workers can be involved

in creating awareness and also to assist the use of MC to improve the hygiene. It is simple to raise the level of health with the assistance of health increase menstrual hygiene knowledge and support the use of MCs to enhance it at a reduced cost.

CONCLUSION

In the present study, the MC knowledge and attitudes, and behaviors of reproductive women were carefully examined. This study concluded that even though many of the participants were aware of the MC's use, it has not yet been widely accepted or used. There is a significant disconnect between women's understanding about and desire to use menstruation cups. The use of these cups can be implemented because they are, environmentally friendly, and reusable, especially in rural areas of India. This survey also revealed that the majority of participants are willing to utilize the MC if one is made available. There was a lack of awareness on the advantages of the MC over sanitary pads. In developing countries like India, there is an inadequate solid waste management, thus there is a need to increase the use of MCs. Youth should be addressed, since they are more receptive to the idea of eco-friendly products, to increase the adoption rate of menstruation cups. MCs can last up to 10 years and produce less waste when compared to other traditional methods. Thus, it is economically feasible and cost effective. Government must implement awareness campaigns in rural areas and continue to disseminate awareness among all socioeconomic levels, for "pad free country."

The knowledge, attitude, and acceptance for the usage of menstruation cups among the educated classes are well acknowledged despite the limitations of this study. Despite the fact that most individuals are aware of MC, many myths are prevalent. Between willingness to use and actual use, there is a significant gap. The usage of menstruation cups among Indians, particularly in rural areas where access to basic resources is prohibited, can be implemented thanks to the fact that they are reusable, require less water to clean, and also promote cleanliness. Therefore, managing menstrual hygiene is a growingly significant (but sometimes ignored) topic that is closely linked to girls' empowerment, education, and societal growth. Therefore, promoting the use of cups and counseling initiatives that emphasize excellent sanitary hygiene practices for females by government agencies through health workers should be prioritized as the main objective. In the long run, these programs may have an effect on a larger number of women who are not now participating. To improve the KAP, targeted health education programs are required.

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